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1. Scope

This document defines the Control Plane signaling procedures of the PoC Client and PoC Server for Push to Talk over Cellular (PoC) service. Example detailed signaling flows for the reference points POC-1, POC-2 and IP-1 are also included in this specification.

This Control Plane specification is based on the procedures specified in [OMA-PoC-AD] "*High level procedures*".

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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 specified in [RFC2119].

All subclauses and appendixes, except clause 1 “*Scope*” and clause 4 “*Introduction*”, are normative, unless they are explicitly indicated to be informative.

3.2 Definitions

1-1 PoC Session	A feature enabling a PoC User to establish a PoC Session with another PoC User
1-many-1 Session	A PoC Group Session for a Pre-arranged PoC Group in which one Participant is a Distinguished Participant and all other Participants are Ordinary Participants.
Access Control	User specified rules that restrict the set of other users that may establish PoC Sessions to the user.
Active PoC Session	An Active PoC Session is a PoC Session that carries both RTP and Talk Burst Control Protocol based packets to the user. If the user has multiple PoC Sessions, at most only one may be active at any given time.
Ad-hoc PoC Group	An Ad-hoc PoC Group Session is a PoC Session for multiple PoC Users that does not involve the use or definition of a Pre-arranged or Chat PoC Group.
Answer Mode	The current Answer Mode setting preference of the PoC User..
Answer Mode Indication	The Answer Mode Indication is the current Answer Mode PoC service setting of the PoC Client.
Application Server	An Application Server in 3GPP IMS or 3GPP2 MMD is a functional entity that implements the service logic for SIP sessions. When the SIP/IP Core used for the PoC service is according to 3GPP IMS or 3GPP2 MMD specifications, the PoC Server implements the Application Server functionality.
Authenticated Originator's PoC Address	The authenticated Originator's PoC Address is the PoC Address of the originating PoC Client that has been authenticated by the SIP/IP Core.
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.
Chat PoC Group	A Chat PoC Group is a persistent Group in which a PoC User individually joins to have a PoC Session with other joined PoC Users, i.e., the establishment of a PoC Session to a Chat PoC Group does not result in other members of the Chat PoC Group being invited.
Chat PoC Group Session	A Chat PoC Group Session is a PoC Session established to a Chat PoC Group.
Conference-factory-URI	A Conference-Factory-URI for PoC service is a provisioned SIP URI that identifies the PoC service in the Home PoC Network.
Confirmed Indication	A Confirmed Indication is a signalling message returned by the PoC Server to confirm that the PoC Server, all other network elements intermediary to the PoC Server and a terminating PoC Client are able and willing to receive Media.
Control Plane	The Control Plane is the specification of the signaling between the PoC Client and PoC Server, and between PoC Servers for the Push to talk over Cellular (PoC) service.
Controlling PoC Function	The Controlling PoC Function is implemented in a PoC Server and provides centralized PoC Session handling, which includes RTP Media distribution, Talk Burst Control, policy enforcement for participation in Group Sessions, and the Participant information.
Distinguished Participant	The Distinguished Participant is a Participant in a 1-many-1 Session that sends RTP Media to all Ordinary Participants, and that receives RTP Media from any Ordinary Participant.
Exploder URI	An Exploder URI is an address of a SIP URI-list service. A URI-list service is a specialized application service that receives a SIP request with a list of URIs and generates a similar SIP request to each of the

	URIs on the list. The SIP URI-list service includes a copy of the body of the original SIP request in the generated SIP requests.
Filter Criteria	Filter Criteria is routing logic used in the 3GPP IMS or 3GPP2 MMD SIP Core to route SIP requests to the correct Application Server.
Group	A Group is a predefined set of PoC Users that is identified by a SIP URI. A PoC Client uses the Group to establish PoC Sessions and to define PoC Session access policy.
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.
Home PoC Network	The Home PoC Network is a network comprising a SIP/IP Core and PoC Server, both 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 service provider that provides PoC service to the user.
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 PoC Session Barring	Incoming PoC Session 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 PoC Session requests.
Instant Personal Alert	Instant Personal Alert is a feature in which a PoC User sends a SIP based instant message to a PoC User requesting a 1-1 PoC Session.
Invited PoC Client	An Invited PoC Client is a PoC Client that is invited to a PoC Session.
Invited PoC User	The PoC User who has been invited to a PoC Session.
Inviting PoC Client	An Inviting PoC Client is a PoC Client that invites other PoC User(s) to a PoC Session.
Manual Answer Mode	Manual Answer Mode is a mode of operation in which the PoC Client requires the PoC User to manually accept the PoC Session invitation before the PoC Session is established.
Media Parameters	Media Parameters are SIP/SDP based information exchanged between the PoC Server and the PoC Client that specify the characteristics of the media for a PoC Session being established or that already exists.
On-demand Session	An On-Demand Session is a PoC Session set-up mechanism in which all Media Parameters are negotiated at PoC Session establishment.
Ordinary Participant	An Ordinary Participant is a Participant in a 1-many-1 Session that is only able to send media to the Distinguished Participant, and that likewise is only able to receive media from the Distinguished Participant.
Originating PoC Service Point Trigger	An Originating PoC Service Point Trigger is a filter criterion for a dialog initiating SIP request from a (PoC) SIP User Agent. For a definition and addition information on "Service Point Triggers" when the SIP/IP core is IMS or MMD, see [3GPP TS 29.228] or [3GPP2 X.S0013.005] for more information.
Participant	A Participant is a PoC User in a PoC Session.
Participating PoC Function	The Participating PoC Function is implemented in a PoC Server, and provides PoC Session handling, which includes policy enforcement for incoming PoC Sessions and relays Talk Burst Control messages between the PoC Client and the PoC Server performing the Controlling PoC Function. The Participating PoC Function may also relay RTP Media between the PoC Client and the PoC Server performing the Controlling PoC Function.
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 Client	A PoC Client is a PoC functional entity that resides on the PoC User Equipment that supports the PoC service. service
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 Identity	The PoC Group Identity is a SIP URI of the Pre-arranged PoC Group or Chat PoC Group.
PoC Group Name	Indicates the name of the PoC Group that can be presented to the PoC User.

PoC Group Session	A PoC Group Session is a Pre-arranged PoC Group, Ad-hoc PoC Group or Chat PoC Group Session.
PoC Server	The PoC Server implements the 3GPP IMS and 3GPP2 MMD application level network functionality for the PoC service. A PoC Server may perform the role of the Controlling PoC Function or Participating PoC Function, or both at the same time.
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, or Chat PoC Group Session.
PoC Session Identity	SIP URI received by the PoC Client during the PoC Session establishment in the Contact header and/or in the TBCP Connect message in case of using Pre-established Session.
PoC User	A PoC User is a user of the PoC service. NOTE: In [PoC RD V1.0] the term “PoC Subscriber” is sometimes used to mean the same as term “PoC User” in [OMA PoC AD], [OMA PoC CP] and [OMA PoC UP].
Pre-arranged PoC Group	A Pre-arranged PoC Group is a persistent PoC Session Identity that has an associated set of PoC members. The establishment of a PoC Session to a prearranged PoC Group results in all members being invited.
Pre-established Session	The Pre-established Session is a SIP Session established between the PoC Client and the PoC Server that performs the Participating PoC Function. 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 user, the PoC Server conferences other PoC Servers/Users to the Pre-established Session so as to create an end-to-end connection.
Primary PoC Session	The Primary PoC Session is a PoC Session that the PoC User selects in preference to other PoC Sessions. When the user has Simultaneous PoC Sessions, the Primary PoC Session has a priority over Secondary PoC Sessions.
Restricted Group	A Group that can be joined only by a PoC User that is a member of the Group. A Restricted Group has a Group List.
RTP Media	RTP Media is the media carried in an RTP payload.
RTP Session	A RTP Session is considered as an association that allows exchange of RTP Media streams and RTCP messages among a set of PoC functional entities.
Secondary PoC Session	A Secondary PoC Session is a PoC Session for which the PoC User receives media when there is no media present on the Primary PoC Session.
Session Type	A Session Type is a SIP URI-parameter used to convey the type of SIP URI, and may take on one of the following values: adhoc, prearranged, chat or 1-1.
Served PoC User	A PoC User that obtains a PoC service from a PoC Server located in the Home PoC Network.
SigComp	SIGCOMP is a signaling compression mechanism specified in [RFC3320]; SIGCOMP in PoC provides for the compression of SIP requests and responses.
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, 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. A dialog was formerly known as a call leg in RFC 2543.
SIP URI	From RFC 3261: "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 User Agent	A SIP User Agent is any SIP peer that performs SIP signaling [RFC3261].
Talk Burst	A Talk Burst is the flow of media from a PoC Client while that has the permission to send media.
Talk Burst Control	Talk Burst Control is a control mechanism that arbitrates requests from the PoC Clients, for the right to send media. NOTE: In [PoC RD V1.0] the term “Floor Control” is used to mean the same as term “Talk Burst Control” in [OMA PoC AD], [OMA PoC CP] and [OMA PoC UP].

Talk Burst Control Protocol	Talk Burst Control Protocol (TBCP) is a protocol for performing Talk Burst Control, and is defined in these specifications.
Talker Identification	Talker Identification is the procedure by which the current talker's identity is determined and made known to listeners on the PoC Session.
Terminating PoC Service Point Trigger	A Terminating PoC Service Point Trigger is a filter criterion for a dialog initiating SIP request to a (PoC) SIP User Agent. For a definition and additional information on "Service Point Triggers" when the SIP/IP core is IMS or MMD, see [3GPP TS 29.228] or [3GPP2 X.S0013.005] for more information.
Unconfirmed Indication	The Unconfirmed Indication is an indication returned by the PoC Server to confirm that it is able to receive media and believes the PoC Client is able to accept media; the PoC Server sends the Unconfirmed Indication prior to determining that all egress elements are ready or even able to receive media.
Unrestricted Group	An Unrestricted Group is a PoC Group that any PoC User may join.
User	A User is any entity that uses the described features through the User Equipment.
User Equipment	User Equipment is a hardware device that supports a PoC Client e.g., a wireless phone.
User Plane	The User Plane includes the media and media control signaling (e.g., Talk Burst Control Protocol) between the PoC Client and PoC Server as well as between PoC Servers.

3.3 Abbreviations

3GPP	3 rd Generation Partnership Project
3GPP2	3 rd Generation Partnership Project 2
AD	Architecture Document
APP	Application-defined RTCP packet
B2BUA	Back to Back User Agent
DM	Device Management
IAB	Incoming Personal Alert Barring
IANA	Internet Assigned Numbers Authority
IETF	Internet Engineering Task Force
IMS	IP Multimedia Subsystem
ISB	Incoming Session Barring
IP	Internet Protocol
MIME	Multipurpose Internet Mail Extensions
MMD	MultiMedia Domain
MO	Management Object
OMA	Open Mobile Alliance
PDA	Personal Digital Assistant
PoC	Push to talk over Cellular
RFC	Request For Comments (IETF specifications)
RTCP	RTP Control Protocol
RTP	Real-time Transport Protocol
SCR	Static Conformance Requirements
SDP	Session Description Protocol
SIP	Session Initiation Protocol
TBCP	Talk Burst Control Protocol

TS	Technical Specification (3GPP specifications)
UAC	User Agent Client
UAS	User Agent Server
UCS	Universal Character Set
UDP	User Datagram Protocol
UE	User Equipment
UP	User Plane
URI	Uniform Resource Identifier
URL	Uniform Resource Locator
USD	User Specific Dictionary
UTF-8	UCS Transformation Format 8
XDM	XML Document Management
XML	Extensible Mark-up Language

4. Introduction

This specification contains the Control Plane procedures for the Push-To-Talk over Cellular (PoC) service on the POC-1, POC-2 and IP-1 reference points as specified in [OMA-PoC-AD].

The document is structured in the following way:

Clause 5: "*Common procedures*" defines the common procedures and general principles, which are not described in the 3GPP/3GPP2 specifications.

Clause 6: "*Procedures at the PoC Client*" defines the originating and terminating procedures at the PoC Client in order to realize the respective features of the PoC service.

Clause 7: "*Procedures at the PoC Server*" defines the originating and terminating procedures at the PoC Server, when it performs Controlling and Participating PoC Functions and the determination of the PoC Server role.

Appendix A: "*Static conformance requirements (SCR)*" is an informative annex containing tables of mandatory and optional features.

Appendix B: "*The parameters to be provisioned for PoC service*" is a normative annex for PoC provisioning parameters.

Appendix C: "*Presence Information Elements and Procedures*" is a normative appendix that defines the PoC specific Presence Information Elements and the Presence procedures, which the PoC functional entities follow in order to perform Presence related actions.

Appendix D: "*Initial Filter Criteria*" is an informative annex to describe with logic examples the originating and terminating filter criteria for the IMS to support the PoC functionality.

Appendix E: "*Documentation of SIP, SDP and XML extensions*" is an informative annex to describe the needed extensions in SIP, SDP and XML.

Appendix F: "*Examples of Signalling Flows*" is an informative annex to describe some of the signaling flows.

Appendix G: "*Change History*" describes the document version history.

5. Common procedures

5.1 General

All Control Plane signalling requests and responses between PoC Client and PoC Server, as well as between PoC Servers, SHALL route via the SIP/IP Core as specified in [OMA-PoC-AD]. When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, then the SIP routing procedures are specified in [TS24.229] / [3GPP2 X.S0013.4].

5.2 Authenticated Originator's PoC Address

The Authenticated Originator's PoC Address is the PoC Address of the originating PoC Client that has been authenticated by the SIP/IP Core or the PoC Group Identity when the PoC Server performing the Controlling PoC Function invites PoC Users to a PoC Group Session.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, then the Authenticated Originator's PoC Address is contained in the P-Asserted-Identity header according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4]. The PoC Client MAY insert a P-Preferred-Identity header, which contains a PoC Client preferred identity, for the SIP/IP Core to use inside the P-Asserted-identity header. If privacy is required, the From header SHALL contain an anonymous URI and optionally a nickname or "Anonymous".

The From header MAY be used to carry the Authenticated Originator's PoC Address, and MAY be supported by the PoC Server. The PoC Server MAY be able to support an Authenticated Originator's PoC Address in the From header if the PoC Server has transitive trust with the SIP/IP Core, and if the SIP/IP Core is able to perform proxy authentication of the PoC Client.

If the PoC Server cannot obtain an Authenticated Originator's PoC Address for an initial request it SHALL reject the request with a SIP 403 "Forbidden" response.

5.3 Signaling compression

If the SIP/IP Core supports SIP signaling compression, the SIP/IP Core SHALL support SIGCOMP, as specified in [RFC 3320], [RFC 3485] and [RFC 3486].

The PoC Client SHOULD compress the SIP signaling according to rules and procedures of [RFC 3320], [RFC 3485] and [RFC 3486] to reduce the transmission delays.

If the PoC Client initiate the signaling compression according to rules and procedures of [RFC 3320], [RFC 3485] and [RFC 3486], then the SIP/IP Core SHALL compress the SIP signaling according to rules and procedures of [RFC 3320], [RFC 3485] and [RFC 3486].

The PoC Client and the SIP/IP Core MAY support stateful compression like dynamic compression, User Specific Dictionaries (USD) or other SigComp extended operations to improve the compression efficiency and to further reduce transmission delays (a definition of dynamic compression, USD and a description of other SigComp extended operations is specified in [RFC 3321]).

NOTE: Dynamic compression and USD can be implemented without using the extended operations mechanisms of [RFC 3321], which is referenced here in the interest of thoroughness.

6. Procedures at the PoC Client

6.1 PoC Client originating procedures

6.1.1 PoC service registration

6.1.1.1 General

The PoC Client SHALL register, re-register and de-register to the SIP/IP Core according to rules and procedures of [RFC3261] with the clarifications in the following subclauses.

When registering and re-registering, the PoC Client

- 1. SHALL generate a SIP REGISTER request;
- 2. SHALL include the PoC feature-tag '+g.poc.talkburst' in the Contact header of the SIP REGISTER request;
- 3. SHALL include the PoC feature-tag '+g.poc.groupad' in the Contact header of the SIP REGISTER request if the receiving of Group Advertisement messages are supported;
- 4. SHALL include a Require header with the option tag "pref" according to rules and procedures of [RFC3840]; and,
- 5. SHALL include the User-Agent header in the SIP REGISTER request to indicate the PoC release version as specified in subclause C.4.1 "Release version in User-agent and Server headers".

When de-registering, the PoC Client

- 1. SHALL generate a SIP REGISTER request;
- 2. SHALL include the PoC feature-tag '+g.poc.groupad' in the Contact header of the SIP REGISTER request if the PoC Client needs to continue to receive Group Advertisement messages;
- 3. SHALL include a Require header with the option tag "pref" according to rules and procedures of [RFC3840]; and,
- 4. SHALL include the User-Agent header in the SIP REGISTER request to indicate the PoC release version as specified in subclause C.4.1 "Release version in User-agent and Server headers".

6.1.1.2 PoC service registration and re-registration

When the PoC Client sends a SIP REGISTER or SIP re-REGISTER request to the SIP/IP Core the PoC Client:

1. SHALL generate a SIP REGISTER request as specified in subclause 6.1.1.1 "General";
2. SHALL insert in the SIP REGISTER request any necessary security parameters (e.g. Digest response) according to rules and procedures of the SIP/IP Core; and,
3. SHALL send the SIP REGISTER request towards the SIP/IP Core according to rules and procedures of the SIP/IP Core.

Each time the PoC Client has successfully performed an initial registration the PoC Client SHALL publish the PoC service settings as specified in subclause 6.1.2 "PoC service settings procedure".

NOTE 1: The SIP/IP Core may challenge and authenticate the SIP REGISTER request requiring the resending of the SIP REGISTER request with authentication credentials.

NOTE 2: Periodical application level re-registration is initiated by the PoC Client to refresh an existing registration based on the re-registration requirements of the SIP/IP Core.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS the PoC Client SHALL use 3GPP/3GPP2 IMS registration mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.1.3 PoC service de-registration

The PoC Client MAY deregister for the PoC service by either:

- If the terminal needs to remain SIP/IP Core registered the PoC Client SHALL reregister with the SIP/IP Core without including the PoC feature-tag '+g.poc.talkburst' and the feature-tag '+g.poc.groupad'; or
- If the terminal also needs to deregister from the SIP/IP Core, the PoC Client SHALL send a SIP REGISTER request with an Expires header set to 0.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS the PoC Client SHALL use 3GPP/3GPP2 IMS registration mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.2 PoC service settings procedure

To set, update or refresh the PoC service settings, the PoC Client:

- 1. SHALL generate a SIP PUBLISH request according to rules and procedures of [RFC3903] and [draft-poc-isb-am];
- 2. SHALL set the Request-URI of the SIP PUBLISH request to the PoC Address of the PoC User;
- 3. SHALL include the PoC Address of the PoC User as the Authenticated Originator's PoC Address as specified in subclause 5.2 “*Authenticated Originator's PoC Address*”;
- 4. SHALL include an Accept-Contact header with the PoC feature-tag '+g.poc.talkburst' along with 'require' and 'explicit' parameters according to rules and procedures of [RFC 3841]; and,
- 5. SHALL send the SIP PUBLISH request according to rules and procedures of SIP/IP Core.

On receiving the SIP 200 "OK" response to the SIP PUBLISH request the PoC Client MAY indicate to the PoC User the successful communication of the PoC service settings to the PoC Server.

NOTE: It needs to be studied whether a single PoC Address can be used with more than one PoC Client.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS 24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.3 PoC Session initiation

6.1.3.1 General

The PoC Client SHALL generate an initial SIP request according to rules and procedures of [RFC3261]. The PoC Client:

- 1. SHALL include an Accept-Contact header with the PoC feature-tag '+g.poc.talkburst' along with 'require' and 'explicit' parameters according to rules and procedures of [RFC3841] in all initial SIP requests;
- 2. SHALL include a User-Agent header to indicate the PoC release version as specified in subclause C.4.1 “*Release version in User-agent and Server headers*”;
- 3. SHALL include the PoC feature-tag '+g.poc.talkburst' in the Contact header;
- 4. SHOULD include an Allow header with all supported SIP methods;
- 5. SHALL include the PoC Address of the PoC User as the Authenticated Originator's PoC Address as specified in subclause 5.2 “*Authenticated Originator's PoC Address*”.

The PoC Client SHALL generate an initial SIP INVITE request according to rules and procedures of [RFC3261]. The PoC Client:

- 1. SHALL include the option tag 'timer' in the Supported header; and,
- 2. SHOULD include the Session-Expires header with the refresher parameter set to "uac" according to rules and procedures of [draft-ietf-sip-session-timer].

NOTE: The use of the option tag 'precondition', as specified in [RFC3312], and the option tag '100rel', specified in [RFC3262], is not defined for POC-1 reference point.

On receipt of a SIP final response or SIP provisional response to the SIP request, the PoC Client:

- 1. SHALL store the list of SIP methods that the PoC Server supports if received in the Allow header; and,

- 2. SHALL store the contact if received in the Contact header.

On receipt of the SIP 200 "OK" response to the initial SIP INVITE request the PoC Client:

- 1. SHALL start the SIP Session timer using the value received in the Session-Expires header according to rules and procedures of [draft-ietf-sip-session-timer].

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS Session establishment mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.3.2 Using Pre-established Session

6.1.3.2.1 PoC Client initiates a Pre-established Session

When the PoC Client initiates a Pre-established Session the PoC Client:

- 1. SHALL generate an initial SIP INVITE request as specified in subclause 6.1.3.1 "General";
- 2. SHALL set the Request-URI of the SIP INVITE request to the Conference-factory-URI for the PoC service in the Home PoC Network of the PoC User;
- 3. SHALL include a MIME SDP body as a SDP offer according to rules and procedures of [RFC3264] and [RFC2327] as follows;
 - a) set the IP address and the port number for the RTP Session;
 - b) include the codec(s) and Media Parameters being offered by the PoC Client for the PoC Service;
 - c) if another IP address or port number is used instead of the default IP address and port number specified by [RFC3550], set the IP address and port number to be used for RTCP at the PoC Client according to rules and procedures of [RFC3605];
 - d) the offered Talk Burst Control Protocol(s), Talk Burst parameter(s) and the port number(s) for the Talk Burst Control Protocol(s); and,
 - e) if the PoC Client is not able/willing to receive media streams immediately then the PoC Client SHALL set the media to 'inactive' as specified in [RFC3108] when generating the SDP offer.
- 4. SHALL send the SIP INVITE request towards the PoC Server according to rules and procedures of the SIP/IP Core.

Upon receiving a SIP 200 "OK" response to the SIP INVITE request the PoC Client:

- 1. SHALL store the list of supported SIP methods if received in the Allow header;
- 2. SHALL store the PoC Session Identity received in the Contact header; and,
- 3. SHALL interact with the User Plane as specified in [OMA-PoC-UP] "PoC Client procedure at Pre-established Session initialization".

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS Session establishment mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.3.2.2 PoC Client initiates an Ad-hoc PoC Group Session and 1-1 PoC Session

Upon receiving a request from a PoC User to establish an Ad-hoc PoC Group Session or 1-1 PoC Session within a Pre-established Session the PoC Client:

- 1. SHALL generate a SIP REFER request according to rules and procedures of [RFC3515];
- 2. SHALL set the Request-URI of the SIP REFER request to the PoC Session Identity of the Pre-established Session;
- 3. SHALL in case of a 1-1 PoC Session either set the Refer-To header of the SIP REFER request to the PoC Address of the Invited PoC User according to rules and procedures of [RFC3515]; or continue in the step 4;
- 4. SHALL in case of Ad-hoc PoC Group Session modify the SIP REFER request according to rules and procedures of [draft-multiple-refer] with the following clarifications:

- a) include in the Refer-To header of the SIP REFER request a URL identifying the body part containing the MIME resource-list body with the Invited PoC Users; and,
 - b) include a MIME resource-lists body according to rules and procedures of [draft-multiple-refer] with the list of the Invited PoC Users. The PoC Client SHALL check that the number of Invited PoC Users on the URI-list does not exceed the maximum number of Participants allowed in an Ad-hoc PoC Group Session as indicated in "MAX-ADHOC-GROUP-SIZE" parameter provisioned for PoC Client. If exceeded, the PoC Client SHOULD notify the PoC User. Otherwise, continue with the rest of the steps.
- 5. SHALL include in the Require header the option tag "norefersub" according to rules and procedures of [draft-norefersub] when more than one PoC User is invited, and MAY include in the Require header the option tag "norefersub" according to rules and procedures of [draft-norefersub] when only one PoC User is invited;
 - 6. SHALL include value "id" in the Privacy header according to rules and procedures of [RFC3325], if anonymity is requested;
 - 7. SHALL in case the PoC User has requested Manual Answer Override include in the SIP REFER request a P-Alerting-Mode header with the value "MAO" according to rules and procedures of [draft-poc-p-headers];
 - 8. SHALL send the SIP REFER request towards the PoC Server within the SIP dialog of the Pre-established Session according to rules and procedures of the SIP/IP Core.

Upon receiving a SIP 2xx final response to the SIP REFER request the PoC Client SHALL interact with User Plane as specified in [OMA-PoC-UP] "*PoC Client procedures at PoC Session initialization*".

Upon receiving an incoming SIP NOTIFY request that is part of the same dialog as the previously sent SIP REFER request the PoC Client:

- 1. SHALL handle the request according to rules and procedures of [RFC3515] and [RFC3265]; and,
- 2. MAY display information to the PoC User based on the information in the SIP NOTIFY body.

NOTE: The PoC Server does not send any SIP NOTIFY request in case the "norefersub" option tag was included in the SIP REFER request.

In addition to this, the PoC Client MAY subscribe to the Conference State Event Package as specified in subclause 6.1.10 "*PoC Client subscription to the Conference State Event Package*".

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.3.2.3 PoC Client initiates a Pre-arranged PoC Group Session or joins a Chat PoC Group Session

Upon receiving a request from a PoC User to establish a Pre-arranged or Chat PoC Group Session within the Pre-established Session the PoC Client:

- 1. SHALL generate a SIP REFER request according to rules and procedures of [RFC3515];
- 2. SHALL set the Request URI of the SIP REFER request to the PoC Session Identity of the Pre-established Session;
- 3. SHALL set the Refer-To header of the SIP REFER request to the URI of the Pre-arranged PoC Group or Chat PoC Group according to rules and procedures of [RFC3515] and include Session Type uri-parameter set to "pre-arranged" or "chat", respectively as specified in C.5.1 "Session Type uri-parameter";
- 4. MAY include in the Require header the option tag "norefersub" according to rules and procedures of [draft-norefersub];
- 5. SHALL in case the PoC User has requested Manual Answer Override include in the SIP REFER request a P-Alerting-Mode header with the value "MAO" according to rules and procedures of [draft-poc-p-headers];
- 6. SHALL include value "id" in the Privacy header according to rules and procedures of [RFC3325], if anonymity is requested; and,
- 7. SHALL send the SIP REFER request towards the PoC Server within the SIP dialog of the Pre-established Session according to rules and procedures of the SIP/IP Core.

Upon receiving a SIP 2xx final response to the SIP REFER request the PoC Client SHALL interact with User Plane as specified in [OMA-PoC-UP] "*PoC Client procedures at PoC Session initialization*".

Upon receiving an incoming SIP NOTIFY request that is part of the same dialog as the previously sent SIP REFER request the PoC Client:

- 1. SHALL handle the request according to rules and procedures of [RFC3515] and [RFC3265]; and,
- 2. MAY display information to the PoC User based on the information in the SIP NOTIFY body.

In addition to this, the PoC Client MAY subscribe to the Conference State Event Package as specified in subclause 6.1.10 "*PoC Client subscription to the Conference State Event Package*".

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS 24.229] / [3GPP2 X.PS0013.4] with the clarifications given in this subclause.

6.1.3.2.4 PoC Client releases a Pre-established Session

When a PoC Client needs to release a Pre-established Session as created in subclause 6.1.3.2.1 "*PoC Client initiates a Pre-established Session*", the PoC Client:

- 1. SHALL generate a SIP BYE request according to rules and procedures of [RFC3261];
- 2. SHALL interact with the User Plane as specified in [OMA-PoC-UP] "*PoC Client procedures at Pre-established Session release*";
- 3. SHALL set the Request-URI of the SIP BYE request to the PoC Session Identity of the Pre-established Session;
- 4. SHALL include value "id" in the Privacy header according to rules and procedures of [RFC3325] , if anonymity is requested; and,
- 5. SHALL send the SIP BYE request towards the PoC Server within the SIP dialog of the Pre-established Session according to rules and procedures of the SIP/IP Core.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.3.3 Establishment of an On-demand PoC Session

6.1.3.3.1 PoC Client initiates an Ad-hoc PoC Group Session and 1-1 PoC Session

Upon receiving a request from a PoC User to establish an Ad-hoc PoC Group Session or a 1-1 PoC Session the PoC Client:

- 1. SHALL generate an initial SIP INVITE request as specified in subclause 6.1.3.1 "*General*";
- 2. SHALL set the Request-URI of the SIP INVITE request to the Conference-factory-URI for the PoC service in the Home PoC Network of the PoC User;
- 3. SHALL insert in the SIP INVITE request a Content-Type header with multipart/mixed as specified in [RFC2046];
- 4. SHALL include in the SIP INVITE request a MIME SDP body as a SDP offer according to rules and procedures of [RFC3264] and [RFC2327] as follows:
 - a) set the IP address and port number for the RTP Session;
 - b) include the codec(s) and Media Parameters being offered by the PoC Client for the PoC service;
 - c) if another IP address or port number is used instead of the default IP address and port number specified by the [RFC3550], set the IP address and port number to be used for RTCP at the PoC Client according to rules and procedures of [RFC3605]; and,
 - d) the offered Talk Burst Control Protocol(s), Talk Burst parameter(s) and the port number(s) for the Talk Burst Control Protocol(s).
- 5. SHALL insert in the SIP INVITE request a MIME resource-lists body with the PoC Address(es) of the Invited PoC User(s) according to rules and procedures of [draft-URI-list]. The PoC Client SHALL check that the number of Invited PoC Users on the URI-list does not exceed the maximum number of Participants allowed in an Ad-hoc PoC Group

Session as indicated in "MAX-ADHOC-GROUP-SIZE" parameter provisioned for PoC Client. If exceeded, the PoC Client SHOULD notify the PoC User. Otherwise, continue with the rest of the steps;

- 6. SHALL in case the PoC User has requested Manual Answer Override include in the SIP INVITE request a P-Alerting-Mode header with the value "MAO" according to rules and procedures of [draft-poc-p-headers];
- 7. SHALL include value "id" in the Privacy header according to rules and procedures of [RFC3325], if anonymity is requested; and,

NOTE 1: If anonymity is not allowed for the PoC Group indicated with the Request-URI of the SIP INVITE based on rules specified in the [PoC XDM Specification] the PoC Session will not be allowed by the PoC Server hosting the PoC Group.

- 8. SHALL send the SIP INVITE request towards the PoC Server according to rules and procedures of the SIP/IP Core.

On receiving a SIP 180 "Ringing" response to the SIP INVITE request the PoC Client:

- 1. SHALL store the list of supported SIP methods if received in the Allow header;
- 2. SHALL store the PoC Session Identity if received in the Contact header; and,
- 3. MAY indicate the progress of the PoC Session establishment to the Inviting PoC User.

On receiving a SIP 200 "OK" response to the SIP INVITE request the PoC Client:

- 1. SHALL store the list of supported SIP methods if received in the Allow header;
- 2. SHALL store the PoC Session Identity received in the Contact header;
- 3. SHALL interact with the User Plane as specified in [OMA-PoC-UP] "PoC Client procedures at PoC Session initialization"; and,
- 4. MAY notify the answer state to the PoC User (i.e. "unconfirmed" or "confirmed") if received in the P-Answer-State header in the response.

NOTE 2: According to [draft-URI-list] the received 200 "OK" means that the conference was created successfully, that the client that generated the SIP INVITE request is in the conference, and that the server understood the URI-list. If the client wishes to obtain information about the status of other users in the conference it SHOULD use general conference mechanisms, such as the conference package.

In addition to this, the PoC Client MAY subscribe to the Conference State Event Package as specified in subclause 6.1.10 "PoC Client subscription to the Conference State Event Package".

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS Session establishment mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.3.3.2 PoC Client initiates a Pre-arranged PoC Group Session or joins a Chat PoC Group Session

Upon receiving a request from a PoC User to establish a PoC Group Session with a PoC Group Identity, identifying a Pre-arranged PoC Group or a Chat PoC Group the PoC Client:

- 1. SHALL generate an initial SIP INVITE request as specified in subclause 6.1.3.1 "General";
- 2. SHALL set the Request-URI of the SIP INVITE request to the PoC Group Identity identifying the PoC Group;
- 3. MAY include Session Type uri-parameter in the Request-URI set to "prearranged" or "chat" depending on the PoC Group Identity as specified in C.5.1 "Session Type uri-parameter";
- 4. SHALL include in the SIP INVITE request a MIME SDP body as a SDP offer according to rules and procedures of [RFC3264] and [RFC2327] as follows:
 - a) set the IP address and port number for the RTP Session;
 - b) include the codec(s) and Media Parameters being offered by the PoC Client for the PoC service;

c) if another IP address or port number is used instead of the default IP address and port number specified by the [RFC3550], set the IP address and port number to be used for RTCP at the PoC Client according to rules and procedures of [RFC3605]; and,

d) the offered Talk Burst Control Protocol(s), Talk Burst parameter(s) and the port number(s) for the Talk Burst Control Protocol(s).

- 5. SHALL in case the PoC User has requested Manual Answer Override include in the SIP INVITE request a P-Alerting-Mode header with the value "MAO" according to rules and procedures of [draft-poc-p-headers];

NOTE: The PoC Server performing the Controlling PoC Function will ignore the Manual Answer Override indication in case the PoC Group Identity identifies a Chat PoC Group.

- 6. SHALL include value "id" in the Privacy header according to rules and procedures of [RFC3325], if anonymity is requested; and,

NOTE: If anonymity is not allowed for the PoC Group indicated with the Request-URI of the SIP INVITE based on rules specified in the [PoC XDM Specification] the PoC Session will not be allowed by the PoC Server hosting the PoC Group.

- 7. SHALL send the SIP INVITE request towards the PoC Server according to rules and procedures of the SIP/IP Core.

On receiving a SIP 180 "Ringing" response to the SIP INVITE request the PoC Client:

- 1. SHALL store the list of supported SIP methods if received in the Allow header;
- 2. SHALL store the PoC Session Identity if received in the Contact header; and,
- 3. MAY indicate the progress of the PoC Session establishment to the Inviting PoC User.

On receiving a SIP 2xx response to the SIP INVITE request, the PoC Client:

- 1. SHALL store the list of supported SIP methods if received in the Allow header;
- 2. SHALL store the PoC Session Identity received in the Contact header;
- 3. SHALL interact with the User Plane as specified in [OMA-PoC-UP] "*PoC Client procedures at PoC Session initialization*"; and,
- 4. MAY notify the answer state to the PoC User (i.e. "unconfirmed" or "confirmed") if received in the P-Answer-State header in the response.

In addition to this, the PoC Client MAY subscribe to the Conference State Event Package as specified in subclause 6.1.10 "*PoC Client Subscription to the Conference State Event Package*".

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS Session establishment mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.4 PoC Client PoC Session modification

6.1.4.1 General

The PoC Client SHALL generate either a SIP UPDATE request according to rules and procedures of [RFC3311] or a SIP re-INVITE request according to rules and procedures of [RFC3261]. A SIP UPDATE request MAY be used only if the PoC Server has indicated support for the SIP UPDATE method.

NOTE: The use of the option tag 'precondition', as specified in [RFC3312], and the option tag '100rel', as specified in [RFC3262], is not defined for the POC-1 reference point.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS Session mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.4.2 PoC Client placing media on hold

This subclause describes the optional procedures that the PoC Client SHALL use if placing a media component on hold.

When the PoC Client sets a media component on hold the PoC Client:

- 1. SHALL generate a new Media Parameter SDP offer using a SIP UPDATE request or a SIP re-INVITE request as specified in subclause 6.1.4.1 "General";
- 2. SHALL include in the SIP request a MIME SDP body as a SDP offer according to rules and procedures of [RFC3264] and [RFC2327] with the modified capabilities;
- 3. SHALL include an "a=sendonly" attribute for a media component which is placed on hold; and,
- 4. SHALL send the SIP request towards the PoC Server according to rules and procedures of the SIP/IP Core.

On receipt of the SIP 200 "OK" response the PoC Client SHALL interact with the User Plane as specified in [OMA-PoC-UP] "Media on Hold" and start to use the media capabilities received in the MIME SDP body.

If a SIP 200 "OK" response is not received the PoC Client SHALL continue to use the previously agreed Media Parameters.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS session mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.4.3 PoC Client placing media off hold

This subclause describes the procedures that the PoC Client SHALL use when activating a media component again, when media is on hold.

When the PoC Client activates a media component, the PoC Client:

- 1. SHALL generate a new Media Parameter SDP offer using a SIP UPDATE request or a SIP re-INVITE request as specified in subclause 6.1.4.1 "General";
- 2. SHALL include in the SIP request a MIME SDP body as a SDP offer according to rules and procedures of [RFC3264] and [RFC2327] with the modified capabilities;
- 3. SHALL include an "a=sendrecv" attribute for a media component which is activated again; and,
- 4. SHALL send the SIP request towards the PoC Server according to rules and procedures of the SIP/IP Core.

On receipt of the SIP 200 "OK" response the PoC Client SHALL interact with the User Plane as specified in [OMA-PoC-UP] "Media on Hold" and start to use the media capabilities received in the MIME SDP body.

If a SIP 200 "OK" response is not received the PoC Client SHALL continue to use the previously agreed Media Parameters.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS session mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.4.4 User Plane adaptation

This subclause describes the optional procedures that the PoC Client SHALL use when initiating User Plane adaptation during an ongoing PoC Session.

When initiating User Plane adaptation the PoC Client:

- 1. SHALL generate a new Media Parameter SDP offer using a SIP UPDATE request or a SIP re-INVITE request as specified in subclause 6.1.4.1 "General";
- 2. SHALL include in the SIP request a MIME SDP body as a SDP offer according to rules and procedures of [RFC3264] and [RFC2327] with the modified Media Parameters; and,
- 3. SHALL send the SIP request towards the PoC Server according to rules and procedures of the SIP/IP Core.

On receipt of the SIP 200 "OK" response the PoC Client SHALL interact with the User Plane as specified in [OMA-PoC-UP] "User Plane adaptation" and start to use the Media Parameters received in the MIME SDP body.

If a SIP 200 "OK" response is not received the PoC Client SHALL continue to use the previously agreed Media Parameters.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS Session mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.4.5 SIP Session refresh

Prior to the expiry of the SIP Session timer the PoC Client:

- 1. SHALL generate either a SIP UPDATE request or a SIP re-INVITE request as specified in subclause 6.1.4.1 "General";
- 2. SHOULD include the Session-Expires header with the refresher parameter set to 'uac' according to rules and procedures of [draft-ietf-sip-session-timer];
- 3. SHALL include option tag timer in the Supported header; and,
- 4. SHALL send the SIP request towards the PoC Server according to rules and procedures of the SIP/IP Core.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS Session refresh mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.5 PoC Client rejoining a PoC Session

6.1.5.1 On-demand PoC Session establishment

Upon receiving a request from a PoC User to re-join a PoC Session the PoC Client:

- 1. SHALL generate an initial SIP INVITE request as specified in subclause 6.1.3.1 "General";
- 2. SHALL set the Request-URI to the PoC Session Identity;
- 3. MAY include in the Request-URI the Session Type uri-parameter indicating the PoC Session type e.g. "session=prearranged", "session=chat" or "session=adhoc" as defined in C.5.1 "Session Type uri-parameter";
- 4. SHALL include a MIME SDP body as a SDP offer according to rules and procedures of [RFC3264] and [RFC2327] as follows:
 - a) Set the IP address and port number for the RTP Session;
 - b) Include the codec(s) and Media Parameters being offered by the PoC Client for the PoC service;
 - c) If another IP address or port number is used instead of the default IP address and port number specified in [RFC3550], set the IP address and port number to be used for RTCP at the PoC Client according to rules and procedures of [RFC3605]; and,
 - d) The offered Talk Burst Control Protocol(s), Talk Burst parameter(s) and the port number(s) for the Talk Burst Control Protocol(s).
- 5. SHALL send the SIP INVITE request towards the PoC Server according to rules and procedures of the SIP/IP Core.

On receiving a SIP 200 "OK" response to the SIP INVITE request the PoC Client:

- 1. SHALL store the list of supported SIP methods if received in the Allow header;
- 2. SHALL store the PoC Session Identity received in the Contact header; and,
- 3. SHALL interact with the User Plane as specified in [OMA-PoC-UP] "PoC Client procedures at PoC Session initialization".

In addition to this, the PoC Client MAY subscribe to the Conference State Event Package as specified in subclause 6.1.10 "PoC Client subscription to the Conference State Event Package".

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS Session establishment mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.5.2 Pre-established Session

Upon receiving a request from a PoC User to re-join a PoC Session within a Pre-established Session established as specified in subclause 6.1.3.2.1 "*PoC Client initiates a Pre-established Session*", the PoC Client:

- 1. SHALL generate a SIP REFER request according to rules and procedures of [RFC3515];
- 2. SHALL set the Request-URI of the SIP REFER request to the PoC Session Identity of the Pre-established Session;
- 3. SHALL set the Refer-To header of the SIP REFER request to the PoC Session Identity of the PoC Session to be re-joined with including the Session Type uri-parameter indicating the PoC Session type e.g. "session=pre-arranged", "session=chat" or "session=ad-hoc" as defined in C.5.1 "*Session Type uri-parameter*";

NOTE: The PoC Session Identity of the PoC Session to be re-joined may have been received in the TBCP Connect message.

- 4. MAY include in the Require header the option tag "norefersub" according to rules and procedures of [draft-norefersub];
- 5. SHALL include value "id" in the Privacy header according to rules and procedures of [RFC3325], if anonymity is requested; and,
- 6. SHALL send the SIP REFER request towards the PoC Server via SIP/IP Core within the SIP dialog of the Pre-established Session according to rules and procedures of the SIP/IP Core.

Upon receiving a SIP 2xx response to the SIP REFER request the PoC Client SHALL interact with User Plane as specified in the [OMA-PoC-UP] "*PoC Client procedures at PoC Session initialization*".

Upon receiving an incoming SIP NOTIFY request that is part of the same dialog as the previously sent SIP REFER request the PoC Client:

- 1. SHALL handle the request according to rules and procedures of [RFC3515] and [RFC3265]; and,
- 2. MAY display information to the PoC User based on the information in the SIP NOTIFY body.

In addition to this, the PoC Client MAY subscribe to the Conference State Event Package as specified in subclause 6.1.10 "*PoC Client subscription to the Conference State Event Package*".

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.6 PoC Client leaving a PoC Session

6.1.6.1 Leaving a PoC Session - On-demand Session case

When the Participant wants to leave the PoC Session and the PoC Session was established using On-demand signaling as specified in subclause 6.1.3.3 "*Establishment of an On-demand Session*" or as specified in subclause 6.1.5.1 "*PoC Client rejoining a PoC Session*", the PoC Client:

- 1. SHOULD release the granted permission to talk or cancel the queued Talk Burst Requests and interact with the User Plane as specified in [OMA-PoC-UP] "*PoC Client procedures at PoC Session release*";
- 2. SHALL generate a SIP BYE request according to rules and procedures of [RFC3261];
- 3. SHALL set the Request-URI to the PoC Session Identity of the PoC Session to leave;
- 4. SHALL include value "id" in the Privacy header according to rules and procedures of [RFC3325], if anonymity is requested; and,
- 5. SHALL send a SIP BYE request towards PoC Server according to rules and procedures of SIP/IP Core.

Upon receiving a SIP 200 "OK" response to the SIP BYE request, the PoC Client SHALL interact with the User Plane as specified in [OMA-PoC-UP] "*PoC Client procedures at PoC Session release*".

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.6.2 Leaving a PoC Session – Pre-established Session case

Upon receiving a request from a PoC User to leave a PoC Session, the PoC Client:

- 1. SHALL generate a SIP REFER request according to rules and procedures of [RFC3515];
- 2. SHALL set the Request-URI of the SIP REFER request to the PoC Session Identity of the Pre-established Session;
- 3. SHALL set the Refer-To header of the SIP REFER request to the PoC Session Identity to leave;

NOTE: The PoC Session Identity of the PoC Session to leave may have been received in the TBCP Connect message, in the SIP Contact header of the SIP 200 “OK” response to the SIP INVITE request that established the Pre-established Session, or in the SIP NOTIFY request associated with the SIP REFER request.
- 4. MAY include in the Require header the option tag “norefersub” according to rules and procedures of [draft-norefersub];
- 5. SHALL include the "method" parameter with the value "BYE" in the Refer-To header;
- 6. SHALL include value "id" in the Privacy header according to rules and procedures of [RFC3325] , if anonymity is requested; and,
- 7. SHALL send the SIP REFER request towards the PoC Server via SIP/IP Core within the SIP dialog of the Pre-established Session according to rules and procedures of the SIP/IP Core.

Upon receiving response(s) to the SIP REFER request, the PoC Client SHALL handle them according to rules and procedures of [RFC3515] and [RFC3265].

Upon receiving an incoming SIP NOTIFY request that is part of the same dialog as the previously sent SIP REFER request the PoC Client:

- 1. SHALL handle the request according to rules and procedures of [RFC3515] and [RFC3265]; and,
- 2. MAY display information to the PoC User based on the information in the SIP NOTIFY body.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.7 PoC Client adding PoC User(s) to a PoC Session

Upon receiving a request from the PoC User to add one or more PoC Users to an ongoing PoC Session, the PoC Client:

- 1. SHALL , if the SIP REFER request will be send in a new dialog, generate an initial SIP REFER request as specified in subclause 6.1.3.1 "General" and according to rules and procedures of [RFC3515]; otherwise generate a SIP REFER request according to rules and procedures of [RFC3515];
- 2. SHALL set the Request-URI of the SIP REFER request to the PoC Session Identity of an ongoing PoC Session;

NOTE 1: If the ongoing PoC Session is established using Pre-established Session but is not controlled by the same PoC Function as the Pre-established Session, the PoC Session Identity of the on-going PoC Session has been received in the TBCP Connect message.
- 3. SHALL, if only one PoC User is invited, either
 - a) set the Refer-To header of the SIP REFER request to the PoC Address of the Invited PoC User according to rules and procedures of [RFC3515], and skip the next step; or
 - b) continue to the next step.
- 4. a) SHALL include a Refer-To header with a pointer to an URI-list in a body part containing the MIME resource-list body according to rules and procedures of [draft-multiple-refer]; and,
 - b) SHALL include a MIME resource-lists body with the list of the PoC Users to be added according to rules and procedures of [draft-multiple-refer].
- 5. SHALL , if the on-going PoC Session is an Ad-hoc PoC Group Session or 1-1 PoC Session on the Home PoC Server of the PoC User, check that the number of the Invited PoC Users on the URI-list or in the Refer-To header does not exceed the maximum number of Participants allowed in an Ad-hoc PoC Group Session as indicated in “MAX-ADHOC-

GROUP-SIZE” parameter provisioned for PoC Client. If exceeded, the PoC Client SHOULD notify the PoC User. Otherwise, continue with the rest of the steps.

- 6. SHALL include in the Require header the option tag "norefersub" according to rules and procedures of [draft-multiple-refer] when more than one PoC User is added, and MAY include in the Require header the option tag “norefersub” according to rules and procedures of [draft-multiple-refer] when only one PoC User is added;
- 7. SHALL include value "id" in a Privacy header according to rules and procedures of [RFC3325] , if anonymity is requested;

NOTE 2: If anonymity is not allowed for the PoC Group indicated with the Request-URI of the SIP REFER request based on rules specified in the [PoC XDM Specification] the PoC Session will not be allowed by the PoC Server hosting the PoC Group.

- 8. SHALL include a P-Alerting-Mode header with the value "MAO" according to rules and procedures of [draft-poc-p-headers] if the PoC User has requested Manual Answer Override; and,
- 9. SHALL send the SIP REFER request towards the PoC Server within the existing dialog from which the PoC Session Identity of the ongoing PoC Session was received in the Contact header of the SIP final response if such a dialog exists, otherwise send the SIP REFER request towards the PoC Server using a new SIP dialogue according to rules and procedures of the SIP/IP Core.

Upon receiving an incoming SIP NOTIFY request that is part of the same dialog as the previously sent SIP REFER request the PoC Client:

- 1. SHALL handle the request according to rules and procedures of [RFC3515] and [RFC3265]; and,
- 2. MAY display information to the PoC User based on the information in the SIP NOTIFY body.

NOTE 3: The PoC Server does not send any SIP NOTIFY request if the PoC Client inserted the option tag "norefersub" in the Require header.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.8 PoC Client sending an Instant Personal Alert

Upon a request from a PoC User to send an Instant Personal Alert with a PoC Address identifying the receiving PoC Client, the PoC Client:

- 1. SHALL generate a SIP MESSAGE request according to rules and procedures of [RFC3428];
- 2. SHALL include Request-URI with the PoC Address of the PoC User to be alerted;
- 3. SHALL include the PoC Address of the PoC User in the Authenticated Originator's PoC Address as specified in subclause 5.2 “*Authenticated Originator's PoC Address*”;
- 4. SHALL include an Accept-Contact header with the PoC feature-tag, '+g.poc.talkburst' along with ‘require’ and ‘explicit’ parameters according to rules and procedures of [RFC3841];
- 5. SHALL include the User-Agent header to indicate the PoC release version as specified in subclause C.4.1 “*Release version in User-agent and Server headers*”; and,

NOTE 1: It has not been determined whether anything needs to be added about the value of the content-type.

- 6. SHALL send the SIP MESSAGE request towards the PoC Server according to rules and procedures of the SIP/IP Core.

NOTE 2: Privacy cannot be applied with the Instant Personal Alert. If anonymity is required by the sending PoC User then the Instant Personal Alert should not be sent, because the PoC Server will reject the request.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms, according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.9 PoC Client sending a Group Advertisement

Upon a request from a PoC User to send a Group Advertisement, the PoC Client:

- 1. SHALL generate a SIP MESSAGE request according to rules and procedures of [RFC3428];
- 2. SHALL include an Accept-Contact header with the PoC feature-tag '+g.poc.groupad' along with 'require' and 'explicit' parameters according to rules and procedures of [RFC 3841];
- 3. SHALL include PoC specific content in the form of MIME vnd.poc.advertisement+xml body. The PoC Client:
 - a) SHALL include the <Group> element with the "type" attribute set to
 - i. "dialed-in" in the case of a Chat PoC Group; or
 - ii. "dialed-out" in case of a Pre-arranged PoC Group.
 - b) MAY include the <display name> element with the value set to PoC Group Name of the PoC Group;
 - c) SHALL include the <uri> element with the value set to the PoC Group Identity of the PoC Group; and,
 - d) MAY optionally include free text in the <note> element.

NOTE 1: The vnd.poc.advertisement+xml is specified in the subclause C.1.1 "Group Advertisement".

- 4. SHALL set the Request-URI according to the PoC User's selection to a PoC Address of a PoC User, or to a PoC Group Identity identifying a Chat PoC Group or a Pre-arranged PoC Group, or to an Exploder-URI identifying a SIP MESSAGE URI-list service according to rules and procedures of [draft-uri-list-message], if the Exploder-URI is provisioned for PoC Client;
- 5. SHALL include the PoC Address of the PoC User in the Authenticated Originator's PoC Address as specified in subclause 5.2 "Authenticated Originator's PoC Address";
- 6. SHALL include the User-Agent header to indicate the PoC release version as specified in subclause C.4.1 "Release version in User-agent and Server headers"; and,
- 7. SHALL send the SIP MESSAGE request towards the PoC Server according to the procedures of the SIP/IP Core.

NOTE 2: Privacy cannot be applied with Group Advertisement. If anonymity is required by the sending PoC User, the Group Advertisement should not be sent, because the PoC Server will reject the request.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.10 PoC Client subscription to the conference state event package

A PoC Client MAY subscribe to the Conference State Event Package by sending a SIP SUBSCRIBE request to obtain information of the status of a PoC Session.

The PoC Client:

- 1. SHALL generate a SIP SUBSCRIBE request and use a new SIP-dialog, as specified in subclause 6.1.3.1 "General" and according to rules and procedures of [RFC3265] and [draft-conference-state];
- 2. SHALL set the Request-URI of the SIP SUBSCRIBE request to PoC Session Identity or the PoC Group Identity; and,
- 3. SHALL send the SIP SUBSCRIBE request towards the PoC Server using a new SIP dialog, according to rules and procedures of the SIP/IP Core.

The responses to the SIP SUBSCRIBE request SHALL be handled according to rules and procedures of [RFC3265] and [draft-conference-state], and rules and procedures of the SIP/IP Core with the clarifications given in this subclause.

Upon receiving a SIP 200 "OK" response to the SIP SUBSCRIBE request the PoC Client:

- 1. SHALL store the PoC Session Identity received in the Contact header.

Upon receiving an incoming SIP NOTIFY request that is part of the same SIP dialog as the previously sent SIP SUBSCRIBE request the PoC Client:

- 1. SHALL handle the request according to rules and procedures of [RFC3265] and [draft-conference-state]; and,
- 2. MAY display the current state information of the PoC Session or PoC Group to the PoC User based on the information in the SIP NOTIFY request body.

When needed the PoC Client SHALL terminate the subscription and indicate it terminated according to rules and procedures of [RFC3265].

The contents of the SIP NOTIFY request body is specified in subclause 7.2.1.11.2 "*Generating a SIP NOTIFY request*".

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.11 PoC Client canceling a PoC Session

6.1.11.1 Canceling a PoC Session - On-demand Session case

When the Participant wants to cancel the PoC Session initiation when On-demand Session signaling is used as specified in subclause 6.1.3.3 "*Establishment of an On-demand PoC Session*" and when the PoC Client has not yet received a final SIP response for the SIP INVITE request, the PoC Client SHALL cancel the SIP INVITE request acting as UAC according to rules and procedures of [RFC3261].

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.1.12 Simultaneous PoC Session control procedures

The PoC Client MAY use Simultaneous PoC Session control procedures if Simultaneous PoC Sessions are supported by the Home PoC Network.

6.1.12.1 PoC Client setting PoC Session priority

The PoC Client MAY set a PoC Session priority while initiating a PoC Session with a SIP INVITE request or at any time later when a valid PoC Session exists with a SIP UPDATE or SIP re-INVITE request.

When the PoC User wants to change PoC Session priority the PoC Client:

- 1. SHALL generate a SDP offer according to rules and procedures of [RFC2327] and [RFC3264] using a SIP INVITE or SIP re-INVITE or SIP UPDATE request as specified in subclause 6.1.4.1 "*General*";
- 2. SHALL include a MIME SDP body with the PoC Session parameter "poc_sess_priority" according to subclause E.3.1 "*Talk Burst Control Protocol MIME registration*"; and,
- 3. SHALL send the SIP request towards the PoC Server according to rules and procedures of the SIP/IP Core.

On receipt of the SIP 200 "OK" response the PoC Client:

- 1. SHALL take account the parameter "poc_sess_priority" in the SDP answer; and,
- 2. SHALL interact with the User Plane as specified in [OMA-PoC-UP] "*Simultaneous PoC Sessions*".

If a SIP 200 "OK" response is not received the PoC Client SHALL continue to use the previously agreed setting.

The PoC Client MAY indicate the PoC Session priority and PoC Session locking setting in the same SIP request.

6.1.12.2 PoC Client handling of PoC Session locking

The PoC Client MAY request to lock itself in a particular PoC Session while initiating a PoC Session with a SIP INVITE request or at any time later when a valid PoC Session exists with a SIP UPDATE or SIP re-INVITE request.

When the PoC User wants to change PoC Session locking state the PoC Client:

- 1. SHALL generate a SDP offer according to rules and procedures of [RFC2327] and [RFC3264] using a SIP INVITE or SIP re-INVITE or SIP UPDATE request as specified in subclause 6.1.4.1 "General";
- 2. SHALL include a MIME SDP body with the PoC Session Locking parameter "poc_lock" according to subclause E.3.1 "Talk Burst Control Protocol MIME registration"; and,
- 3. SHALL send the request towards the PoC Server according to rules and procedures of the SIP/IP Core.

On receipt of the SIP 200 "OK" response the PoC Client

- 1. SHALL take account the parameter "poc_lock" in the SDP answer; and,
- 2. SHALL interact with the User Plane as specified in [OMA-PoC-UP] "Simultaneous PoC Sessions".

If a SIP 200 "OK" response is not received the PoC Client SHALL continue to use the previously agreed setting.

NOTE 1: The PoC Session locking is automatically released when the PoC Session is ended.

NOTE 2: Sending a TBCP Talk Burst Request message from the PoC Client in a PoC Session will cause the locking value to change to "unlocked" in any other PoC Session.

The PoC Client MAY indicate PoC Session priority and PoC Session locking setting in the same SIP request.

6.2 PoC Client termination procedures

6.2.1 PoC Client invited to a PoC Session

6.2.1.1 General

On receipt of the initial SIP INVITE request the PoC Client:

- 1. MAY reject the SIP INVITE request with an appropriate reject code as specified in [RFC3261] e.g.
 - a) when the PoC Client is occupied in another PoC Session and can not handle Simultaneous PoC Sessions as specified in 6.2.7 "Simultaneous PoC Sessions control procedures"; or,
 - b) when the PoC Client is occupied in a CS call; or,
 - c) when the PoC Client determines that there is not enough resources to handle the PoC Session; or,
 - d) any other reason outside the scope of this specification.

NOTE 1: The decision to reject a SIP INVITE request to a PoC Session can e.g. be based on procedures between the PoC Client and the PoC User outside the scope of this specification.

- 2. SHALL store the list of supported SIP methods if received in the Allow header;
- 3. SHALL store as the PoC Session Identity the content of the Contact header;
- 4. SHALL NOT show the PoC Address of the Inviting PoC User, if Privacy header includes value 'id'; and,
- 5. MAY display information to the PoC User based on the information in the URI and the Session Type uri-parameter of the Authenticated Originator's PoC Address and the PoC Session Identity and the Session Type uri-parameter of the PoC Session Identity in the Contact header.

When generating SIP responses other than the SIP 100 "Trying" to the received initial SIP request the PoC Client:

- 1. SHALL generate SIP responses according to rules and procedures of [RFC3261];

NOTE 2: The use of the option tag 'precondition', as specified in [RFC3312], and the option tag '100rel', as specified in [RFC3262], is not defined for the POC-1 reference point.

- 2. SHALL include Server header to indicate the PoC release version as specified in subclause E.4.1 "Release version in User-agent and Server headers";
- 3. SHALL include the option tag 'timer' in a Require header;

- 4. SHOULD include an Allow header with all supported SIP methods;
- 5. SHALL include value 'id' in a Privacy header according to rules and procedures specified in [RFC3325], if anonymity is requested by the Invited PoC User; and,
- 6. SHALL include the Session-Expires header in the SIP 200 "OK" response to the initial SIP INVITE request with the refresher parameter set to 'uas' and start the SIP Session timer according to rules and procedures specified in [draft-ietf-sip-session-timer];
- 7. SHALL include the PoC Address of the PoC User as the Authenticated Originator's PoC Address as specified in subclause 5.2 “*Authenticated Originator's PoC Address*”.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.2.1.2 Auto-answer case

On receipt of an initial SIP INVITE request containing the P-Alerting-Mode header with the value "Auto" as specified in [draft-poc-p-headers] and when the PoC Client is set to Auto Answer Mode the PoC Client:

- 1. SHALL validate that the Media Parameters are acceptable to the PoC Client and if not, reject the request with a SIP 488 "Not Acceptable Here" response. Otherwise, continue with the rest of the steps;
- 2. SHALL accept the request and generate a SIP 200 "OK" response as specified in the subclause 6.2.1.1 "*General*" towards the PoC Server; and,
- 3. SHALL include in a SIP 200 "OK" response a MIME SDP body as a SDP answer according to rules and procedures of [RFC3264] and [RFC2327] as follows:
 - a) The IP address and port number at the PoC Client for the RTP Session;
 - b) The codec(s) and Media Parameters acceptable by the PoC Client for the PoC Service selected from those in the SDP offer contained in the incoming SIP INVITE request;
 - c) if another IP address or port shall be used instead of the default IP address and port number specified by [RFC3550], set the IP address and port number to be used for RTCP at the PoC Client according to rules and procedures of [RFC3605];
 - d) The selected Talk Burst Control Protocol(s) and Talk Burst parameters selected from those in the SDP offer contained in the SIP INVITE request; and,
 - e) the port number(s) to be used for the Talk Burst Control Protocol(s).
- 4. SHALL send the SIP 200 "OK" response towards the PoC Server according to rules and procedures of the SIP/IP Core; and,
- 5. SHALL interact with the User Plane as specified in [OMA-PoC-UP] “*PoC Client procedures at PoC Session initialization*”.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS Session establishment mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.2.1.3 Manual-answer case

On receipt of an initial SIP INVITE request containing the P-Alerting-Mode header with the value "Manual" as specified in [draft-poc-p-headers] or when the PoC Client is set to Manual Answer Mode and when the P-Alerting-Mode header does not contain the value “MAO” the PoC Client:

- 1. SHALL validate that the Media Parameters are acceptable to the PoC Client and if not, reject the request with a SIP 488 "Not Acceptable Here" response. Otherwise, continue with the rest of the steps;
- 2. SHALL generate and send a SIP 180 'Ringing' response towards the PoC Server as specified in the subclause 6.2.1.1 "*General*". If the user accepts the PoC Session invitation, perform steps 2, 3, and 5. If the user declines the PoC Session invitation, perform step 4;

- 3. SHALL generate a SIP 200 "OK" response to the SIP INVITE request as specified in the subclause 6.2.1.1 "General" if the PoC User accepts the PoC Session invitation;
- 4. SHALL include a MIME SDP body as a SDP answer in the SIP 200 "OK" response according to rules and procedures of [RFC3264] and [RFC2327] as follows:
 - a) The IP address and port number at the PoC Client for the RTP Session;
 - b) The codec(s) and Media Parameters acceptable by the PoC Client for the PoC service selected from those in the SDP offer contained in the incoming SIP INVITE request;
 - c) if another IP address or port is used instead of the default IP address and port number as specified by [RFC3550], set the IP address and port number to be used for RTCP at the PoC Client according to rules and procedures of [RFC3605];
 - d) The selected Talk Burst Control Protocol(s) and Talk Burst parameters selected from those in the SDP offer contained in the SIP INVITE request; and,
 - e) the port number(s) to be used for the Talk Burst Control Protocol(s).
- 5. SHALL send a SIP 480 "Temporarily Unavailable" response towards the PoC Server if the PoC User declines the PoC Session invitation or a SIP 408 "Request Timeout" response if the invitation times out.
- 6. SHALL, if the PoC User accepts the PoC Session invitation.
 - a) send the SIP 200 "OK" response to the PoC Server; and,
 - b) interact with the User Plane as specified in [OMA-PoC-UP] "PoC Client procedures at PoC Session initialization".

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS Session establishment mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.2.1.4 Manual-answer override case

On receipt of an initial SIP INVITE request containing the P-Alerting-Mode header with the value "MAO" as specified in [draft-poc-p-headers] then if Manual Answer Override is supported by the PoC Client or the Answer Mode of the PoC Client is Automatic Answer then the PoC Client:

- 1. SHALL validate that the Media Parameters are acceptable to the PoC Client and if not, reject the request with a SIP 488 "Not Acceptable Here" response. Otherwise, continue with the rest of the steps;
- 2. SHALL accept the request and generate a SIP 200 "OK" response as specified in the subclause 6.2.1.1 "General".
- 3. SHALL include a MIME SDP body as a SDP answer in the SIP 200 "OK" response according to rules and procedures of [RFC3264] and [RFC2327] with the following information as follows:
 - a) The IP address and port number at the PoC Client for the RTP Session:
 - b) The codec(s) and Media Parameters acceptable by the PoC Client for the PoC service selected from those in the SDP offer contained in the incoming SIP INVITE request;
 - c) if another IP address or port is used instead of the default IP address and port number as specified by [RFC3550], set the IP address and port number to be used for RTCP at the PoC Client according to rules and procedures of [RFC3605];
 - d) The selected Talk Burst Control Protocol(s) and Talk Burst parameters selected from those in the SDP offer contained in the SIP INVITE request; and,
 - e) the port number(s) to be used for the Talk Burst Control Protocol(s).
- 4. SHALL send the SIP 200 "OK" response towards the PoC Server according to rules and procedures of the SIP/IP Core; and,
- 5. SHALL interact with the User Plane as specified in [OMA-PoC-UP] "PoC Client procedures at PoC Session initialization".

NOTE: If Manual Answer Override is not supported by the PoC Client and the Answer Mode of the PoC Client is Manual Answer then the PoC Client procedures are as the Manual-answer specified in subclause 6.2.1.3 "Manual-answer case".

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS session establishment mechanisms according to rules and procedures of [3GPP TS 24.229] / [3GPP2 X.P0013.4] with the clarifications given in this subclause.

6.2.2 PoC Client receiving a PoC Session modification request

Upon receiving a SIP UPDATE request, or a SIP re-INVITE request with a MIME SDP body including a new SDP offer as specified by [RFC3264] and [RFC2327], the PoC Client:

- 1. SHALL validate that the Media Parameters are acceptable to the PoC Client and if not,
 - a) select a subset of the received Media Parameters; or,
 - b) reject the request with a SIP 488 "Not Acceptable Here" response towards the PoC Server according to the rules and procedures of SIP/IP Core. Otherwise, continue with the rest of the steps.
- 2. SHALL activate new Media Parameters as specified in [OMA-PoC-UP] "User Plane adaptation";
- 3. SHALL generate a SIP 200 "OK" according to rules and procedures of [RFC3261];
- 4. SHALL include the Session-Expires header in the SIP 200 "OK" response to the SIP UPDATE or SIP re-INVITE request with the refresher parameter set to 'uas' and re-start the SIP Session timer according to rules and procedures specified in [draft-ietf-sip-session-timer];
- 5. SHALL include the option tag 'timer' in the Require header;
- 6. SHALL include the accepted Media Parameters in a MIME SDP body as the SDP answer according to rules and procedures of [RFC3264] and [RFC2327]; and,
- 7. SHALL send the SIP 200 "OK" response towards the PoC Server according to rules and procedures of SIP/IPCore.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.2.3 PoC Client receiving a PoC Session release request

6.2.3.1 PoC Session release request – On-demand Session case

Upon reception of a SIP BYE request, the PoC Client:

- 1. SHALL send SIP 200 "OK" response towards PoC Server according to rules and procedures of the SIP/IP Core; and,
- 2. SHALL interact with the User Plane as specified in [OMA-PoC-UP] "PoC Client procedures at PoC Session release".

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.2.3.2 PoC Session release request – Pre-established Session case

Upon receiving a release request on the User Plane as specified in [OMA-PoC-UP] "PoC Session control state diagram – Pre-established Session", the PoC Client SHALL regard the PoC Session within the Pre-established Session as released and interact with the User Plane as specified in [OMA-PoC-UP] "PoC Client procedures at PoC Session release".

6.2.4 PoC Client receiving an Instant Personal Alert

Upon receiving a SIP MESSAGE request containing the PoC feature tag '+g.poc.talkburst' in the Accept-Contact header field, and a non-anonymous Authenticated Originator's PoC Address, the PoC Client:

NOTE 1: It has not been determined whether the content-type needs to be checked.

- 1. MAY reject the SIP MESSAGE request with an appropriated reject code specified in [RFC3428] and [RFC3261] e.g.

- a) when the PoC Client determines that there is not enough resources to handle the SIP MESSAGE request; or,
- b) any other reason outside the scope of this specification.

NOTE 2: The decision to reject the SIP MESSAGE request can e.g. be based on procedures between the PoC Client and the PoC User outside the scope of this specification.

- 2. SHALL generate a SIP 200 "OK" response according to rules and procedures of [RFC3428];
- 3. SHALL include Server header to indicate the PoC release version as specified in subclause E.4.1 "Release version in User-agent and Server headers"; and,
- 4. SHALL send the SIP 200 "OK" response towards the PoC Server according to rules and procedures of the SIP/IP Core.

NOTE 3: The PoC Client can indicate to the PoC User that an Instant Personal Alert was received.

The PoC Client MAY use the procedures specified in subclause 6.1.3.2.2 "PoC Client initiates an Ad-hoc PoC Group Session and 1-1 PoC Session" or in subclause 6.1.3.3.1 "PoC Client initiates an Ad-hoc PoC Group Session and 1-1 PoC Session" to initiate a 1-1 PoC Session with the PoC User identified in the Authenticated Originator's PoC Address.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.2.5 PoC Client receiving a Group Advertisement

Upon receipt of a SIP MESSAGE request containing an Accept-Contact header including the PoC feature-tag '+g.poc.groupad' the PoC Client:

- 1. MAY reject the SIP MESSAGE request with an appropriated reject code specified in [RFC3428] and [RFC3261] e.g.
 - a) when the PoC Client determines that there is not enough resources to handle the SIP MESSAGE request; or,
 - b) any other reason outside the scope of this specification.

NOTE 1: The decision to reject the SIP MESSAGE request can e.g. be based on procedures between the PoC Client and the PoC User outside the scope of this specification.

- 2. SHALL generate a 200 "OK" response according to rules and procedures of [RFC3428];
- 3. SHALL include Server header to indicate the PoC release version as specified in subclause E.4.1 "Release version in User-agent and Server headers"; and,
- 4. SHALL send the SIP 200 "OK" response towards the PoC Server according to rules and procedures of the SIP/IP Core.

NOTE 2: The PoC Client can act based on the received Group Advertisement e.g. by showing the advertisement to the PoC User.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.2.6 PoC Client receiving a PoC Session SIP CANCEL request

6.2.6.1 PoC Session SIP CANCEL request - On-demand Session case

Upon reception of a SIP CANCEL request, the PoC Client SHALL behave as UAS according to rules and procedures of [RFC3261].

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

6.2.7 Simultaneous PoC Session control procedures

PoC Client MAY use Simultaneous PoC Session control procedures if the PoC Server of the Home PoC Network supports Simultaneous PoC Sessions. The Invited PoC Client MAY change the PoC Session priority and/or PoC Session locking during a PoC Session as specified in subclauses 6.1.12.1 "*PoC Client Setting PoC Session Priority*" and 6.1.12.2 "*PoC Client handling of PoC Session locking*".

NOTE: The PoC Session locking is automatically released when the PoC Session is ended.

7. Procedures at the PoC Server

7.1 Determination of PoC Server role

This subclause describes how a PoC Server determines its role when receiving an initial or a stand-alone SIP request.

The behaviour in the PoC Server when receiving SIP requests within an existing SIP dialog is described under the respective PoC Server role.

Once the role is decided the role SHALL be kept until the SIP dialog is released, or until the stand-alone transaction is done.

7.1.1 Reception of an initial SIP INVITE request

Upon receiving an initial SIP INVITE request the PoC Server:

- 1. SHALL if it is the Originating PoC Service Point Trigger and
 - a) if the SIP URI in the Request-URI of the SIP INVITE request corresponds to the Conference-factory-URI of the PoC service in the network served by the PoC Server but the SIP INVITE request does not include a URI-list of the PoC Users to be invited the PoC Server SHALL perform the role of Participating PoC Function and continue as specified in subclause 7.3.1.2 "*Pre-established Session*"; or,
 - b) otherwise the PoC Server SHALL perform the role of the Participating PoC Function as specified in 7.3.1.4 "*PoC Session initiation using On-demand Session*".
- 2. SHALL if it is the Terminating PoC Service Point Trigger and
 - a) if the SIP URI in the Request-URI of the SIP INVITE request corresponds to a Pre-arranged PoC Group owned by the PoC Server or to a PoC Group owned by the PoC Server and the SIP URI includes a uri-parameter "session=prearranged", the PoC Server SHALL perform the role of Controlling PoC Function and continue as specified in subclause 7.2.1.3 "*Pre-arranged PoC Group Session setup request*"; or
 - b) if the SIP URI in the Request-URI of the SIP INVITE request corresponds to a Chat PoC Group owned by the PoC Server or to a PoC Group owned by the PoC Server and the SIP URI includes a uri-parameter "session=chat", the PoC Server SHALL perform the role of Controlling PoC Function and continue as specified in subclause 7.2.1.5 "*Joining Chat PoC Group Session request*"; or,
 - c) if the SIP URI in the Request-URI of the SIP INVITE request corresponds to a PoC Session Identity generated by the PoC Server, the PoC Server SHALL perform the role of Controlling PoC Function and continue as specified in subclause 7.2.1.4 "*Rejoining PoC Session request*"; or,
 - d) if the SIP-URI in the Request-URI of the SIP INVITE request corresponds to a PoC User served by the PoC Server the PoC Server SHALL perform the role of Participating PoC Function and continue as specified in subclause 7.3.2.2 "*PoC Session invitation request*"; or,
 - e) if the SIP URI in the Request-URI of the SIP INVITE request is unknown to the PoC Server the PoC Server SHALL return a SIP 404 "Not Found" response.

7.1.2 Reception of a SIP REFER request

Upon receiving a SIP REFER request outside of an existing SIP dialog the PoC Server

- 1. SHALL if it is the Originating PoC Service Point Trigger continue as specified in subclause 7.3.1.8 "*SIP REFER request received*"; or,
- 2. SHALL if it is the Terminating PoC Service Point Trigger continue as specified in subclause 7.2.1.8 "*Adding Participants to PoC Session request*".

7.1.3 Reception of a SIP MESSAGE request

Upon receiving a SIP MESSAGE request containing the PoC feature-tag '+g.poc.talkburst' in the Accept-Contact header the PoC Server:

- 1. SHALL if it is the Originating PoC Service Point Trigger continue as specified in subclause 7.4.1.1 "Instant Personal Alert procedure at originating PoC Server"; or,
- 2. SHALL if it is the Terminating PoC Service Point Trigger continue as specified in subclause 7.4.1.2 "Instant Personal Alert procedure at terminating PoC Server".

Upon receiving a SIP MESSAGE request containing the PoC feature-tag '+g.poc.groupad' in the Accept-Contact header the PoC Server:

- 1. SHALL if it is the Originating PoC Service Point Trigger continue as specified in subclause 7.3.1.11 "Group Advertisement request"; or,
- 2. SHALL if the Terminating PoC Service Point Trigger and the Request-URI contains a SIP URI corresponding to a PoC Group known by the PoC Server, continue as specified in the subclause 7.2.1.12 "Group Advertisement request"; or,
- 3. SHALL if it is the Terminating PoC Service Point Trigger and the Request-URI contains a SIP-URI corresponding to a PoC User served by the PoC Server continue as specified in subclause 7.3.2.7 "Group Advertisement request".

7.1.4 Reception of a SIP SUBSCRIBE request

Upon receiving a SIP SUBSCRIBE request outside of an existing SIP dialog the PoC Server:

- 1. SHALL if it is the Originating PoC Service Point Trigger continue as specified in 7.3.1.7 "*SIP SUBSCRIBE request*"; or,
- 2. SHALL if it is the Terminating PoC Service Point Trigger continue as specified in subclause 7.2.1.11 "*PoC Session Participant information Request*".

7.2 Controlling PoC Function procedures

7.2.1 Request terminating at the Controlling PoC Function

7.2.1.1 General

On receipt of an initial SIP INVITE request the PoC Server

- 1. SHALL store the supported SIP methods if received in the Allow header.

When sending SIP provisional responses with the exception of the SIP 100 "Trying" response to the SIP INVITE request the PoC Server

- 1. SHALL generate the SIP provisional response according to rules and procedures of [RFC3261];
- 2. SHALL include the Server header with the PoC release version as specified in subclause E.4.1 "*Release version in User-agent and Server headers*";
- 3. SHOULD include an Allow header with all the supported SIP methods;
- 4. SHALL include Authenticated Originator's PoC Address as specified in subclause 5.2 "*Authenticated Originator's PoC Address*"
 - a) set to the Conference-factory-URI in case of 1-1 PoC Session or Ad-hoc PoC Group Session or
 - b) set to the PoC Group Identity with the Session Type uri-parameter "session=prearranged" or "session=chat" as specified in E.5.1 "*Session Type uri-parameter*" in case of Pre-arranged or Chat PoC Group respectively; and,
- 5. SHALL include in a Contact header the PoC Session Identity with the feature tag 'isfocus' and the PoC feature tag '+g.poc.talkburst' and the Session Type uri-parameter "session=1-1", or "session=adhoc", or "session=prearranged", or "session=chat" as appropriate for the type of the PoC Session as specified in E.5.1 "*Session Type uri-parameter*";

When sending a SIP 200 "OK" response to the initial SIP INVITE request the PoC Server:

- 1. SHALL generate the SIP 200 "OK" response according to rules and procedures of [RFC3261];
- 2. SHOULD include an Allow header with all the supported SIP methods;
- 3. SHALL include the Session-Expires header with the refresher parameter set to 'uac' and start supervising the SIP Session according to rules and procedures of [draft-ietf-sip-session-timer];
- 4. SHALL include Authenticated Originator's PoC Address as specified in subclause 5.2 "*Authenticated Originator's PoC Address*"
 - a) set to the Conference-factory-URI in case of 1-1 PoC Session or Ad-hoc PoC Group Session or,
 - b) set to the PoC Group Identity with the Session Type uri-parameter "session=prearranged" or "session=chat" as specified in E.5.1 "*Session Type uri-parameter*" in case of the Pre-arranged or Chat PoC Group respectively.
- 5. SHALL include in a Contact header the PoC Session Identity with the feature-tag 'isfocus' and the PoC feature-tag '+g.poc.talkburst' and the Session Type uri-parameter "session=1-1", or "session=adhoc", or "session=prearranged", or "session=chat" as appropriate for the type of the PoC Session as specified in E.5.1 "*Session Type uri-parameter*"; and,
- 6. SHALL include the Server header with the PoC release version as specified in subclause E.4.1 "*Release version in User-agent and Server headers*" if not already included in a SIP provisional response.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS Session establishment mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.2.1.2 Ad-hoc PoC Group and 1-1 PoC Session setup request

Upon receiving of an initial SIP INVITE request the PoC Server:

- 1. SHALL check whether the Conference-factory-URI contained in the Request URI is allocated and perform the actions specified in subclause 7.5.1 "*Conference-factory URI does not exist*" if it is not allocated;
- 2. SHALL check whether the Accept-Contact header includes the PoC feature-tag '+g.poc.talkburst' and if it does not the PoC Server SHALL return a SIP 403 "Forbidden" response. Otherwise, continue with the rest of the steps;
- 3. SHALL perform actions to verify the Authenticated Originator's PoC Address of the Inviting PoC User and authorize the request, and if it is not authorized the PoC Server SHALL return a SIP 403 "Forbidden" response. Otherwise, continue with the rest of the steps;
- 4. SHALL establish a PoC Session and allocate a PoC Session Identity for the PoC Session;
- 5. SHALL validate that the new Media Parameters are acceptable by the PoC Server and if not reject the request with a SIP 488 "Not Acceptable Here" response. Otherwise, continue with the rest of the steps;
- 6. SHALL check from the MIME resource-lists body that the maximum number of Participants allowed in an Ad-hoc PoC Group Session is not exceeded. If exceeded, PoC Server SHALL return SIP 486 "Busy Here" response with the warning header set to "too many participants". Otherwise, continue with the rest of the steps; and,
- 7. SHALL invite the PoC Users listed in the MIME resource-lists body as specified in subclause 7.2.2.2 "*PoC Session invitation request*".

NOTE: How the multiple invited members are conveyed in the SIP INVITE request is specified in [draft-URI-list].

Upon receiving a SIP 183 "Session Progress" response for the SIP INVITE request containing a P-Answer-State header with the value "Unconfirmed" as specified in [draft-poc-p-headers] and as specified in subclause 7.2.2.2 "*PoC Session invitation request*" the PoC Server:

- 1. SHALL generate 200 "OK" response as specified in the subclause 7.2.1.1 "*General*" and continue with the rest of the steps if unconfirmed mode is supported by the PoC Server and the final response is not yet sent to the Inviting PoC Client, otherwise do not proceed with the rest of the steps;
- 2. SHALL include a MIME SDP body in the SIP 200 "OK" response as a SDP answer according to rules and procedures of [RFC3264] and [RFC2327] as follows:
 - a) The IP address and port number at the PoC Server for the RTP Session;
 - b) The codec(s) and Media Parameters selected by the PoC Server from those contained in the original SDP offer received from the originating network;

- c) if another IP address or port is used instead of the default IP address and port number as specified in [RFC3550], set the IP address and port number to be used for RTCP at the PoC Server according to rules and procedures of [RFC3605];
 - d) The Talk Burst Control Protocol(s) and Talk Burst parameters selected by the PoC Server from those contained in the original SDP offer received from the originating network;
 - e) The PoC Server's port number(s) to be used for the Talk Burst Control Protocol(s); and
 - f) Optionally "tb-granted" indication as specified in E.3 "*SDP Extensions*".
- 3. SHALL include a P-Answer-State header with the value "Unconfirmed";
 - 4. SHALL send the SIP 200 "OK" response towards the Inviting PoC Client according to rules and procedures of SIP/IP Core;
 - 5. SHALL interact with User Plane as specified in [OMA-PoC-UP] "*Controlling PoC Function procedures at PoC Session initialization*"; and,
 - 6. SHALL send a notification to the PoC Clients, which have subscribed to the conference state event package that an Inviting PoC User has joined in the PoC Group Session, as specified in subclause 7.2.1.11.2 "*Generating a SIP NOTIFY request*".

Upon receiving a SIP180 "Ringing" response as specified in subclause 7.2.2.2 "*PoC Session Invitation Request*" and the SIP final response or a SIP 180 "Ringing" response has not yet been sent to the Inviting PoC Client, the PoC Server:

- 1. SHALL generate a SIP 180 "Ringing" response to the SIP INVITE request as specified in the subclause 7.2.1.1 "General"; and,
- 2. SHALL send the SIP 180 "Ringing" response towards the Inviting PoC Client according to rules and procedures of SIP/IP Core.

Upon receiving a SIP 200 "OK" response for the SIP INVITE request as specified in subclause 7.2.2.2 "*PoC Session invitation request*" the PoC Server:

- 1. SHALL generate a SIP 200 "OK" response to the SIP INVITE request as specified in the subclause 7.2.1.1 "General" and continue with the rest of the steps if the SIP final response is not yet sent to the Inviting PoC Client otherwise do not proceed with the rest of the steps;
- 2. SHALL include in the SIP 200 "OK" response a MIME SDP body as a SDP answer according to rules and procedures of [RFC3264] and [RFC2327] as follows:
 - a) The IP address and port number at the PoC Server for the RTP Session;
 - b) The codec(s) and Media Parameters selected by the PoC Server from both those contained in the original SDP offer from the originating network and those contained in the received SDP answer in the SIP 200 "OK" response from the terminating network;
 - c) If another IP address or port is used instead of the default IP address and port number as specified in [RFC3550], set the IP address and port number at the PoC Server for RTCP according to rules and procedures of [RFC3605];
 - d) The Talk Burst Control Protocol(s) and Talk Burst parameters selected by the PoC Server from both those contained in the original SDP offer from the originating network and those contained in the received SDP answer in the SIP 200 "OK" response from the terminating network;
 - e) The PoC Server's port number(s) to be used for the Talk Burst Control Protocol(s); and
 - f) Optionally "tb-granted" indication as specified in E.3 "*SDP Extensions*".
- 3. SHALL send a SIP 200 "OK" response to the Inviting PoC Client; and
- 4. SHALL interact with User Plane as specified in [OMA-PoC-UP] "*Controlling PoC Function procedures at PoC Session initialization*".

Upon receiving a SIP final response other than 2xx or 3xx, that is one of the SIP 4xx, 5xx or 6xx final responses the PoC Server:

- 1. SHALL send the SIP final response towards the Inviting PoC Client, if a SIP final response was received from all the Invited PoC Clients and the SIP 200 "OK" response is not yet sent. The SIP final response SHALL include the Status-Code defined by the PoC Server according to local policy e.g. the lowest value received from the Invited PoC User(s); or,
- 2. SHALL remove Inviting PoC Client from the PoC Session as specified in subclause 7.2.2.4 "*Remove of Participant from PoC Session*", if a SIP final response other than 2xx or 3xx was received from all the Invited PoC Clients and the SIP 200 "OK" response is already sent.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.2.1.3 Pre-arranged PoC Group Session setup request

Upon receiving an initial SIP INVITE request the PoC Server:

- 1. SHALL check whether the Accept-Contact header includes the PoC feature-tag '+g.poc.talkburst' and if it is not included the PoC Server SHALL return a SIP 403 "Forbidden" response. Otherwise, continue with the rest of the steps;
- 2. SHALL check that the PoC Group Identity in the Request-URI identifying a Pre-arranged PoC Group is owned by this PoC Server and if it is not then the PoC Server SHALL perform the actions specified in subclause 7.5.2 "*Conference URI does not exist*". Otherwise, continue with the rest of the steps;
- 3. SHALL check the presence of the Session Type uri-parameter in the Request-URI and if it is present check whether it has the value "prearranged" and if it doesn't then the PoC Server performing the Controlling PoC Function SHALL reject the request with a SIP 404 "Not Found" response including 'Correct Session Type of <Request-URI> is "prearranged"' text in the Warning header. Otherwise, continue with the rest of the steps;
- 4. SHALL check the presence of the "isfocus" feature parameter in the URI of the Contact header and if it is present then the PoC Server performing the Controlling PoC Function SHALL reject the request with a SIP 403 "Forbidden" response including "isfocus already assigned" text in the Warning header. Otherwise, continue with the rest of the steps;
- 5. SHALL perform actions to verify the Authenticated Originator's PoC Address of the Inviting PoC User and authorize the request as specified in subclause 7.2.1.14 "*PoC Session initiation policy*" and if it is not authorized the PoC Server SHALL return a SIP 403 "Forbidden" response. Otherwise, continue with the rest of the steps;
- 6. SHALL check whether the Authenticated Originator's PoC Address of the joining PoC User is allowed to join by performing the actions specified in subclause 7.2.1.6 "*PoC Session joining policy*". If it is not allowed to join the PoC Server performing the Controlling PoC Function SHALL respond with a SIP 403 "Forbidden" response to the originating network. Otherwise, continue with the rest of the steps;
- 7. SHALL check whether privacy is allowed for the Authenticated originator's PoC Address, when anonymity is requested with the Privacy header containing the tag "id". If not allowed, the PoC Server SHALL respond with a SIP 403 "Forbidden" error response to the originating network. Allowing privacy for a specific Authenticated Originator's PoC Address is defined using <allow-anonymity> element of the PoC Group's authorization rules as specified in [PoC XDM Specification]. Otherwise, continue with the rest of the steps;
- 8. SHALL validate that the Media Parameters are acceptable for the PoC Server and if not reject the request with a SIP 488 "Not Acceptable Here" response. Otherwise, continue with the rest of the steps;
- 9. if the PoC Group does not have already an Active PoC Session then the PoC Server:
 - a) SHALL invite members of the Pre-arranged PoC Group as specified in subclauses 7.2.1.14 "*PoC Session initiation policy*" and 7.2.2.2 "*PoC Session invitation request*";
 - b) SHALL perform Talk Burst Control procedures as specified in [OMA-PoC-UP] "*Controlling PoC Function procedures at PoC Session initialization*" and do not continue the rest of the steps.
- 10. if the PoC Group has already an active PoC Session then PoC Server:
 - a) SHALL generate a SIP 200 "OK" response as specified in the 7.2.1.1 "*General*";

b) SHALL include a MIME SDP body in the SIP 200 "OK" response as the SDP answer according to rules and procedures of [RFC3264] and [RFC2327] with the following information;

- i. The IP address and port number at the PoC Server for the RTP Session;
- ii. The codec(s) and Media Parameters selected by the PoC Server from those contained in the SDP offer in the incoming SIP INVITE request from the originating network. In addition, the PoC Server MAY limit the number of codec(s) and Media Parameters included in the SDP answer in SIP 200 "OK" response based either on the codec(s) and Media Parameters contained in SDP answers received or sent in SIP 200 "OK" responses from or to other PoC Session Participants(s) or the codec(s) and Media Parameters that are currently used in a PoC Session;
- iii. If another IP address or port is used instead of the default IP address and port number as specified in [RFC3550], set the IP address and port number to be used for RTCP at the PoC Server according to rules and procedures of [RFC3605];

The Talk Burst Control Protocol(s) and Talk Burst parameters selected by the PoC Server from those contained in the SDP offer in the incoming SIP INVITE request from the originating network. In addition, the PoC Server MAY limit the number of Talk Burst Control Protocol(s) and Talk Burst parameters included in the SDP answer in SIP 200 "OK" response based either on the Talk Burst Control Protocol(s) and Talk Burst parameters contained in SDP answers received or sent in SIP 200 "OK" responses from or to other PoC Session Participants(s) or the Talk Burst Control Protocol(s) and Talk Burst parameters that are currently used in a PoC Session; and

- v. The PoC Server's port number(s) to be used for the Talk Burst Control Protocol(s).

c) SHALL send the SIP 200 "OK" response towards the Inviting PoC Client according to the rules and procedures of SIP/IP Core; and,

d) SHALL perform Talk Burst Control procedures as specified in [OMA-PoC-UP] "*Controlling PoC Function procedures at PoC Session initialization*".

e) SHALL send a notification to the PoC Clients, which have subscribed to the conference state event package that the Inviting PoC User has joined in the PoC Group Session, as specified in subclause 7.2.1.11.2 "Generating a SIP NOTIFY request".

Upon receiving a SIP 183 "Session Progress" response for the SIP INVITE request containing a P-Answer-State header with the value "Unconfirmed" as specified in [draft-poc-p-headers] and as specified in subclause 7.2.2.2 "*PoC Session Invitation Request*" the PoC Server:

- 1. SHALL generate a SIP 200 "OK" response to SIP INVITE request as specified in the subclause 7.2.1.1 "*General*" and continue with the rest of the steps if unconfirmed mode is supported by the PoC Server and the SIP final response is not yet sent to the Inviting PoC Client, otherwise do not proceed with the rest of the steps;
- 2. SHALL include a MIME SDP body in the SIP 200 "OK" response as a SDP answer according to rules and procedures of [RFC3264] and [RFC2327] as follows:
 - a) The IP address and port number at the PoC Server for the RTP Session;
 - b) The codec(s) and Media Parameters selected by the PoC Server from those contained in the SDP offer in the incoming SIP INVITE request;
 - c) If another IP address or port is used instead of the default IP address and port number as specified in [RFC3550], set the IP address and port number at the PoC Server to be used for RTCP according to rules and procedures of [RFC3605];
 - d) The Talk Burst Control Protocol(s) and Talk Burst parameters selected by the PoC Server from those contained in the SDP offer in the incoming SIP INVITE request;
 - e) The PoC Server's port number(s) to be used for the Talk Burst Control Protocol(s); and,
 - g) Optionally "tb-granted" indication as specified in E.3 "*SDP Extensions*".

- 3. SHALL include a P-Answer-State header with the value "Unconfirmed";
- 4. SHALL send the SIP 200 "OK" response towards the Inviting PoC Client according to rules and procedures of the SIP/IP Core;
- 5. SHALL interact with User Plane as specified in [OMA-PoC-UP] "*Controlling PoC Function procedures at PoC Session initialization*"; and,
- 8. SHALL send a notification to the PoC Clients, which have subscribed to the conference state event package that the Inviting PoC User has joined in the PoC Group Session, as specified in subclause 7.2.1.11.2 "*Generating a SIP NOTIFY request*".

Upon receiving a SIP 180 "Ringing" response as specified in subclause 7.2.2.2 "*PoC Session invitation request*" and the SIP final response or a SIP 180 "Ringing" response has not yet been sent to the Inviting PoC Client, the PoC Server:

- 1. SHALL generate a SIP 180 "Ringing" to the SIP INVITE request response as specified in the subclause 7.2.1.1 "*General*"; and,
- 2. SHALL send the SIP 180 "Ringing" response towards the Inviting PoC Client according to rules and procedures of the SIP/IP Core.

Upon receiving a SIP 200 "OK" response for the SIP INVITE request as specified in subclause 7.2.2.2 "*PoC Session invitation request*" the PoC Server:

- 1. SHALL generate SIP 200 "OK" response to the SIP INVITE request as specified in the subclause 7.2.1.1 "*General*" and continue with the rest of the steps if the SIP final response is not yet sent to the Inviting PoC Client. Otherwise do not proceed with the rest of the steps;
- 2. SHALL include a MIME SDP body in the SIP 200 "OK" response as a SDP answer according to rules and procedures of [RFC3264] and [RFC2327] as follows:
 - a) The IP address and port number at the PoC Server for the RTP Session;
 - b) The codec(s) and Media Parameters selected by the PoC Server from those contained in the SDP offer in the incoming SIP INVITE request from the originating network. In addition, the PoC Server MAY limit the number of codec(s) and Media Parameters included in the SDP answer in SIP 200 "OK" response based either on the codec(s) and Media Parameters contained in SDP answers received or sent in SIP 200 "OK" responses from or to other PoC Session Participants(s) or the codec(s) and Media Parameters that are currently used in a PoC Session
 - c) If another IP address or port is used instead of the default IP address and port number as specified in [RFC3550], set the IP address and port number to be used for RTCP at the PoC Server according to rules and procedures of [RFC3605];
 - d) The Talk Burst Control Protocol(s) and Talk Burst parameters selected by the PoC Server from those contained in the SDP offer in the incoming SIP INVITE request from the originating network. In addition, the PoC Server MAY limit the number of Talk Burst Control Protocol(s) and Talk Burst parameters included in the SDP answer in SIP 200 "OK" response based either on the Talk Burst Control Protocol(s) and Talk Burst parameters contained in SDP answers received or sent in SIP 200 "OK" responses from or to other PoC Session Participants(s) or the Talk Burst Control Protocol(s) and Talk Burst parameters that are currently used in a PoC Session;
 - e) The PoC Server's port number(s) to be used for the Talk Burst Control Protocol(s); and,
 - f) Optionally "tb-granted" indication as specified in E.3 "*SDP Extensions*".
- 3. SHALL send a SIP 200 "OK" response to the Inviting PoC Client according to rules and procedures of the SIP/IP Core;
- 4. SHALL interact with User Plane as specified in [OMA-PoC-UP] "*Controlling PoC Function procedures at PoC Session initialization*"; and,
- 7. SHALL send a notification to the PoC Clients, which have subscribed to the conference state event package that the Inviting PoC User has joined in the PoC Group Session, as specified in subclause 7.2.1.11.2 "*Generating a SIP NOTIFY request*".

Upon receiving a SIP final response other than 2xx or 3xx that is one of the SIP 4xx, 5xx or 6xx final responses the PoC Server either:

- 1. SHALL send the SIP final response towards the Inviting PoC Client, according to rules and procedures of the SIP/IP Core, if a SIP final response was received from all the Invited PoC Clients and the SIP 200 "OK" response is not yet sent. The SIP final response SHALL include the Status-Code defined by the PoC Server according to local policy e.g. the lowest value received from the Invited PoC User(s); or,
- 2. SHALL remove the Inviting PoC Client from the PoC Session as specified in subclause 7.2.2.4 "*Removal of Participant from PoC Session*", if a SIP final response other than 2xx or 3xx was received from all the Invited PoC Clients and the SIP 200 "OK" response is already sent.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.2.1.4 Rejoining PoC Session request

Upon receipt of a SIP INVITE request that includes a PoC Session Identity in the Request-URI the PoC Server:

- 1. SHALL check whether the Accept-Contact header includes the PoC feature-tag '+g.poc.talkburst' and if it is not included the PoC Server SHALL return a SIP 403 "Forbidden" response. Otherwise, continue with the rest of the steps;
- 2. SHALL check the presence of the Session Type uri-parameter in the Request-URI and if it is present check whether it matches with the correct Session Type of the Request-URI and if it doesn't then the PoC Server performing the Controlling PoC Function SHALL reject the request with a SIP 404 "Not Found" response including 'Correct Session Type of <Request-URI> is "<correct Session Type>"' text in the Warning header. Otherwise, continue with the rest of the steps;
- 3. SHALL check whether the Authenticated Originator's PoC Address of the joining PoC User is allowed to join by performing the actions specified in subclause 7.2.1.6 "*PoC Session joining policy*". If it is not allowed to join the PoC Server performing the Controlling PoC Function SHALL respond with a SIP 403 "Forbidden" response to the originating network. Otherwise, continue with the rest of the steps;
- 4. SHALL in the case a Chat or Pre-arranged PoC Group Session if "<max-participant-count>" as specified in [PoC XDM Specification] is already achieved. If achieved, PoC Server SHALL return a SIP 486 "Busy Here" response with the Warning header set to "Too many participants" to the originating network. Otherwise, continue with the rest of the steps;
- 5. SHALL check whether privacy is allowed for the Authenticated Originator's PoC Address, when anonymity is requested with the Privacy header containing the tag "id". If not allowed, the PoC Server SHALL respond with a SIP 403 "Forbidden" error response to the originating network. Allowing privacy for a specific Authenticated Originator's PoC Address is defined using <allow-anonymity> element of the PoC Group's authorization rules as specified in [PoC XDM Specification]. Otherwise, continue with the rest of the steps;
- 6. SHALL validate that the Media Parameters are acceptable for the PoC Server and if not reject the request with a SIP 488 "Not Acceptable Here" response. Otherwise, continue with the rest of the steps;
- 7. SHALL accept the SIP request and generate a SIP 200 "OK" response to the SIP request as specified in the subclause 7.2.1.1 "*General*";
- 8. SHALL include a MIME SDP body as a SDP answer in the SIP 200 "OK" response according to rules and procedures of [RFC3264] and [RFC2327] as follows:
 - a) The IP address and port number at the PoC Server for the RTP Session;
 - b) The codec(s) and Media Parameters selected by the PoC Server from those contained in the SDP offer in the incoming SIP INVITE request from the originating network. In addition, the PoC Server MAY limit the number of codec(s) and Media Parameters included in the SDP answer in SIP 200 "OK" response based either on the codec(s) and Media Parameters contained in SDP answers received or sent in SIP 200 "OK" responses from or to other PoC Session Participants(s) or the codec(s) and Media Parameters that are currently used in a PoC Session;
 - c) If another IP address or port is used instead of the default IP address and port number as specified in [RFC3550], set the IP address and port number to be used for RTCP at PoC Server according to rules and procedures of [RFC3605];

d) The Talk Burst Control Protocol(s) and Talk Burst parameters selected by the PoC Server from those contained in the SDP offer in the incoming SIP INVITE request from the originating network. In addition, the PoC Server MAY limit the number of Talk Burst Control Protocol(s) and Talk Burst parameters included in the SDP answer in SIP 200 "OK" response based either on the Talk Burst Control Protocol(s) and Talk Burst parameters contained in SDP answers received or sent in SIP 200 "OK" responses from or to other PoC Session Participants(s) or the Talk Burst Control Protocol(s) and Talk Burst parameters that are currently used in a PoC Session; and

e) The PoC Server's port number(s) to be used for the Talk Burst Control Protocol(s).

- 9. SHALL send the SIP 200 "OK" response towards the PoC Client according to rules and procedures of SIP/IP Core;
- 10. SHALL initiate the Talk Burst Control procedures as specified in [OMA-PoC- UP] "*Controlling PoC Function procedures at PoC Session initialization*"; and,
- 11. SHALL send a notification to the PoC Clients, which have subscribed to the conference state event package that a PoC User has joined in the PoC Group Session, as specified in subclause 7.2.1.11.2 "*Generating a SIP NOTIFY request*".

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS Session establishment mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.2.1.5 Joining Chat PoC Group Session request

Upon receipt of a SIP INVITE request that includes a PoC Group Identity, which identifies the Chat PoC Group in the request URI that is owned by the PoC Server, the PoC Server:

- 1. SHALL check whether the Accept-Contact header includes the PoC feature-tag '+g.poc.talkburst' and if it is not included the PoC Server SHALL reject the request with a SIP 403 "Forbidden" response. Otherwise, continue with the rest of the steps;
- 2. SHALL check whether the PoC Group Identity in the Request-URI identifying a Chat PoC Group is allocated and perform the actions specified in subclause 7.5.2 "*Conference URI does not exist*" if it is not allocated. Otherwise, continue with the rest of the steps;
- 3. SHALL check the presence of the Session Type uri-parameter in the Request-URI and if it is present check whether it has the value "chat" and if it doesn't then the PoC Server performing the Controlling PoC Function SHALL reject the request with a SIP 404 "Not Found" response including 'Correct Session Type of <Request-URI> is "chat"' text in the Warning header. Otherwise, continue with the rest of the steps;
- 4. SHALL check the presence of the "isfocus" feature parameter in the URI of the Contact header and if it is present then the PoC Server SHALL reject the request with a SIP 403 "Forbidden" response including "isfocus already assigned" text in the Warning header. Otherwise, continue with the rest of the steps;
- 5. SHALL check whether the Authenticated Originator's PoC Address of the joining PoC User is allowed to join by performing the actions specified in subclause 7.2.1.6 "*PoC Session joining policy*". If it is not allowed to join the PoC Server SHALL reject the request with a SIP 403 "Forbidden" response to the originating network. Otherwise, continue with the rest of the steps;
- 6. SHALL check in the case a Chat or Pre-arranged PoC Group Session if "<max-participant-count>" as specified in [PoC XDM Specification] is already achieved. If achieved, PoC Server SHALL return SIP 486 "Busy Here" response with the Warning header set to "Too many participants" to the originating network. Otherwise, continue with the rest of the steps;
- 7. SHALL check whether privacy is allowed for the Authenticated Originator's PoC Address, when anonymity is requested with the Privacy header containing the tag "id". If not allowed, the PoC Server SHALL respond with a SIP 403 "Forbidden" error response to the originating network. Allowing privacy for a specific Authenticated Originator's PoC Address is defined using <allow-anonymity> element of the PoC Group's authorization rules as specified in [PoC XDM Specification]. Otherwise, continue with the rest of the steps;
- 8. SHALL validate that the Media Parameters are acceptable for the PoC Server and if not reject the request with a SIP 488 "Not Acceptable Here" response. Otherwise, continue with the rest of the steps;
- 9. SHALL check whether the Chat PoC Group Session already exists. If it doesn't exist, the PoC Server creates a Chat PoC Group Session;
- 10. SHALL accept the SIP request and generate with a SIP 200 "OK" response to the SIP INVITE request as specified in the subclause 7.2.1.1 "*General*". The PoC Server:

a) SHALL include a MIME SDP body in the SIP 200 "OK" response as a SDP answer according to rules and procedures of [RFC3264] and [RFC2327] as follows:

- i. The IP address and port number at the PoC Server for the RTP Session;
- ii. The codec(s) and Media Parameters selected by the PoC Server from those contained in the SDP offer in the incoming SIP INVITE request from the originating network. In addition, the PoC Server MAY limit the number of codec(s) and Media Parameters included in the SDP answer in SIP 200 "OK" response based either on the codec(s) and Media Parameters contained in SDP answers received or sent in SIP 200 "OK" responses from or to other PoC Session Participants(s) or the codec(s) and Media Parameters that are currently used in a PoC Session;
- iii. if another IP address or port is used instead of the default IP address and port number as specified in [RFC3550], set the IP address and port number to be used for RTCP at the PoC Server according to rules and procedures of [RFC3605];
- iv. The Talk Burst Control Protocol(s) and Talk Burst parameters selected by the PoC Server from those contained in the SDP offer in the incoming SIP INVITE request from the originating network. In addition, the PoC Server MAY limit the number of Talk Burst Control Protocol(s) and Talk Burst parameters included in the SDP answer in SIP 200 "OK" response based either on the Talk Burst Control Protocol(s) and Talk Burst parameters contained in SDP answers received or sent in SIP 200 "OK" responses from or to other PoC Session Participants(s) or the Talk Burst Control Protocol(s) and Talk Burst parameters that are currently used in a PoC Session; and
- v. The PoC Server's port number(s) to be used for the Talk Burst Control Protocol(s).

- 11. SHALL send the SIP 200 "OK" response towards the PoC Client according to rules and procedures of SIP/IP Core;
- 12. SHALL initiate the Talk Burst Control procedures as specified in [OMA-PoC-UP] "*Controlling PoC Function procedures at PoC Session initialization*"; and,
- 12. SHALL send a notification to the PoC Clients, which have subscribed to the conference state event package that a PoC User has joined in the PoC Group Session, as specified in subclause 7.2.1.11.2 "Generating a SIP NOTIFY request".

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS Session establishment mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.2.1.6 PoC Session joining policy

The PoC Server performing the Controlling PoC Function SHALL allow only those PoC Users to join in the Ad-hoc and 1-1 PoC Session that it hosts who

- have been invited in the original invitation; and,
- have been invited during the PoC Session by the owner or by another Participant of the PoC Session

The PoC Server performing the Controlling PoC Function SHALL allow only those PoC Users to join in the Pre-arranged or Chat PoC Session that it hosts whose Authenticated Originator's PoC Address is allowed by the <join-handling> action of the PoC Group's authorization rules, as specified in [PoC XDM Specification].

7.2.1.7 PoC Session modification

Upon receiving a SIP UPDATE request or a SIP re-INVITE request within an existing PoC Session including a new SDP offer as specified by [RFC3264] and [RFC2327] the PoC Server:

- 1. SHALL validate that the new Media Parameters are acceptable by the PoC Server and if not reject the request with a SIP 488 "Not Acceptable Here" response. Otherwise, continue with the rest of the steps;
- 2. SHALL update the User Plane with the new Media Parameters as specified in [OMA-PoC-UP] "*User Plane adaptation*";
- 3. SHALL generate a SIP 200 "OK" response as follows:

- a) include a MIME SDP body as a SDP answer according to rules and procedures of [RFC3264] and [RFC2327] with the new Media Parameters; and,
 - b) send the SIP 200 "OK" response to the SIP/IP Core along the signalling path.
- 4. SHOULD send a notification as specified in subclause 7.2.1.11.2 "Generating a SIP NOTIFY request" to the PoC Clients, which have subscribed to the conference state event package, if a PoC User has put the PoC Session on hold or off hold.

NOTE: The PoC Server may determine to update the Media Parameters of the other Participants according to the local policy. The modification is specified in subclause 7.2.2.5. "*PoC Session modification*".

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.2.1.8 Adding Participants to PoC Session request

Upon receiving a SIP REFER request that is without a method parameter in the refer-To header or when the the method parameter is set to "INVITE" in the Refer-To header, the PoC Server:

- 1. SHALL perform actions to verify the Authenticated Originator's PoC Address of the Inviting PoC User and authorize the request as specified in subclauses 7.2.1.14 "*PoC Session initiation policy*" and 7.2.1.15 "*PoC Session adding policy*" and if it is not authorized the PoC Server SHALL return a SIP 403 "Forbidden" response. Otherwise, continue with the rest of the steps;
- 2. SHALL, for the case of a request to add Participants to a Pre-arranged Group or Chat Group Session, check whether privacy is allowed for the Authenticated Originator's PoC Address, if anonymity is requested via a Privacy header containing the tag "id" in the SIP REFER request. If not allowed, the PoC Server SHALL respond with a SIP 403 "Forbidden" response to the originating network. Allowing privacy for a specific Authenticated Originator's PoC Address is defined using <allow-anonymity> element of the PoC Group's authorization rules as specified in [PoC XDM Specification]. Otherwise, continue with the rest of the steps;
- 3. SHALL check the presence of the "norefersub" option tag in the Require header of the SIP REFER request and if it is present then the PoC Server SHALL include in the response to the SIP REFER request a Supported header with the option tag "norefersub" according to rules and procedures of [draft-norefersub];
- 4. SHALL send the SIP response to the SIP REFER request towards the PoC Client according to rules and procedures of the SIP/IP Core;
- 5. SHALL extract the PoC Address(es) of the PoC User(s) from the SIP REFER request to be invited either:
 - a) from the Refer-To header according to rules and procedures of [RFC3515]; or,
 - b) from the MIME resource-list body according to rules and procedures of [draft-multiple-refer];
- 6. SHALL, for the addition of PoC Users to an Ad-hoc PoC Session, check whether the PoC User(s) to be added, in addition to those already participating, do not exceed the maximum number of Participants allowed in an Ad-hoc PoC Session. If exceeded, according to the local policy, the PoC Server SHALL return a SIP 486 "Busy Here" response with the Warning header set to "Too many participants" to the originating network. Otherwise, continue with the rest of the steps;
- 7. SHALL, for the addition of users to a Chat or Pre-arranged PoC Group Session, check whether the PoC User(s) to be added, in addition to those already participating, do not exceed the maximum number of Participants allowed in the PoC Group Session according to the <max-participant-count> parameter, which is specified in [PoC XDM Specification]. If exceeded, the PoC Server SHALL return a SIP 486 "Busy Here" response with the Warning header set to "Too many participants" to the originating network. Otherwise, continue with the rest of the steps.
- 8. SHALL generate a SIP 2xx response to the SIP REFER request according to rules and procedures of [RFC3515];
- 9. SHALL include the "norefersub" option tag in the Supported header of the SIP 2xx response if the "norefersub" option tag was present in the Require header of the received SIP REFER request ;
- 10. SHALL send the SIP 2xx final response to the SIP REFER request towards the PoC Client according to rules and procedures of the SIP/IP Core;
- 11. SHALL perform the actions described in subclause 7.2.2.2 "*PoC Session invitation request*" for each PoC User;and,

- 12. SHALL if the "norefersub" option tag is not present in the Require header of the SIP REFER request, generate and send to the PoC Client SIP NOTIFY request(s) as specified in the subclause 7.2.1.17 "*Generating a SIP NOTIFY request to the SIP REFER request*" based on the progress of each SIP INVITE request sent to PoC User(s) in accordance with sub-clause 7.2.2.2 "*PoC Session invitation request*".

NOTE: A SIP REFER request according to rules and procedures of [RFC3515] or [draft-multiple-refer] is an implicit subscription to event "refer" if the "norefersub" option tag is not present in the Require header.

Upon receiving a SIP 403 "Forbidden" response with the text "isfocus already assigned" in the Warning header, the PoC Server SHALL if the "norefersub" option tag is not present in the Require header of the SIP REFER request, generate and send the PoC Client a SIP NOTIFY request as specified in the subclause 7.2.1.17 "*Generating a SIP NOTIFY request to the SIP REFER request*".

Upon receiving SIP provisional responses or SIP final responses for the SIP INVITE request(s) containing a P-Answer-State header with the value "Unconfirmed" as specified in [draft-poc-p-headers] and as specified in subclause 7.2.2.2 "*PoC Session invitation request*" the PoC Server:

- 1. SHALL discard the received SIP responses without forwarding them.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.2.1.9 Leaving PoC Session request

7.2.1.9.1 SIP BYE request received in a PoC Session

Upon receiving a SIP BYE request the PoC Server:

- 1. SHALL send a SIP 200 "OK" response towards the PoC Client according to rules and procedures of the SIP/IP Core;
- 2. SHALL release User Plane resource associated with the SIP Session towards the Participating PoC Function by interacting with the User Plane as specified in [OMA-PoC-UP] "*Controlling PoC Function Procedures at PoC Session release*";
- 3. SHALL check PoC Session release policy as specified in the subclause 7.2.1.16 "*PoC Session release policy*" and according to the applied release policy perform for each Participant of the PoC Session the procedures as specified in the subclause 7.2.2.4 "*Remove of Participant from the PoC Session*", if needed; and,
- 4. SHALL send a notification to the PoC Clients, which have subscribed to the conference state event package that a PoC User has left the PoC Group Session, as specified in subclause 7.2.1.11.2 "*Generating a SIP NOTIFY request*".

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.2.1.9.2 SIP REFER BYE request received when using a Pre-established Session

Upon receiving from the PoC Client a SIP REFER request when using a Pre-established Session with the method parameter set to value "BYE" in the Refer-To header the PoC Server:

- 1. SHALL perform the actions to verify the Authenticated Originators PoC Address of the PoC Client and authorize the request and if it is not authorized the PoC Server SHALL return a SIP 403 "Forbidden" response;
- 2. SHALL generate a final SIP response 2xx to the SIP REFER request according to rules and procedures of [RFC3515] and send it to the SIP/IP Core along the signalling path;
- 3. SHALL check the presence of the "norefersub" option tag in the Require header of the SIP REFER request and if it is present then the PoC Server SHALL include in the response to the SIP REFER request a Supported header with the option tag "norefersub" according to rules and procedures of [draft-norefersub];
- 4. SHALL send the SIP response to the SIP REFER request towards the PoC Client according to rules and procedures of the SIP/IP Core;
- 5. SHALL examine the URI in the Refer-To header of the SIP REFER request and

a) if the URI is an identity of an existing PoC Session and Participant referred by the Authenticated Originator's PoC Address of the SIP REFER request is participating in the PoC Session then the PoC Server:

- i. SHALL generate a SIP 2xx response to the SIP REFER request according to rules and procedures of [RFC3515] and send it to the SIP/IP Core along the signalling path;
- ii. SHALL remove the Participant referred by the Authenticated Originator's PoC Address from the PoC Session by performing the procedures as specified in subclause 7.3.2.6.3 "*Leaving a PoC Session within a Pre-established Session*";
- iii. SHALL check the PoC Session release policy as specified in subclause 7.2.1.16 "*PoC Session release policy*" and according to the applied release policy perform for each Participant of the PoC Session (except for the owner of the Pre-established Session) the procedures specified in subclause 7.2.2.4 "*Removal of Participant from the PoC Session*", if needed;
- iv. SHALL generate a notification of the current state of the PoC Session to the PoC Client(s), which have subscribed to the conference state event package, as specified in subclause 7.2.1.11.2 "*Generating a SIP NOTIFY request*";
- v. SHALL check the subscription termination policy as specified in subclause 7.2.1.11.3 "*Termination of subscription*" and for each PoC Clients (except the owner of the Pre-established Session) terminate the existing subscription to the conference state event package, if needed; and,
- vi. SHALL send the SIP NOTIFY request to the PoC Client according to rules and procedure of the SIP/IP Core.

b) if the URI is not an identity of an existing PoC Session or the Participant referred by the Authenticated Originator's PoC Address of the SIP REFER request is not participating in the PoC Session then the PoC Server:

- i. SHALL return a SIP 403 "Forbidden" response.

- 6. SHALL if the "norefersub" option tag is not present in the Require header of the SIP REFER request, generate and send to the PoC Client SIP NOTIFY request(s) as specified in subclause 7.2.1.17 "*Generating a SIP NOTIFY request to the SIP REFER request*" based on the progress of the BYE request.

NOTE: A SIP REFER request according to rules and procedures of [RFC3515] or [draft-multiple-refer] is an implicit subscription to event "refer" in case "norefersub" option tag is not present in the Require header.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.2.1.9.3 SIP BYE request received within a Pre-established Session

Upon receiving a SIP BYE request to a Pre-established Session the PoC Server:

- 1. SHALL check the PoC Session release policy as specified in subclause 7.2.1.16 "*PoC Session release policy*" and perform according to the applied PoC Session release policy for every Participant of the PoC Session (except for the owner of the Pre-established Session) the procedures as specified in subclause 7.2.2.4 "*Remove of Participant from the PoC Session*";
- 2. SHALL remove the owner from the PoC Session by performing the procedures as specified in subclause 7.3.2.6.3 "*Leaving a PoC Session within Pre-established Session*";
- 3. SHALL generate a notification of the current state of the PoC Session terminating the existing subscription to the conference state event package for each PoC Client, which have subscribed to the conference state event package, as specified in subclause 7.2.1.11.2 "*Generating a SIP NOTIFY request*"; and,
- 4. SHALL send the SIP NOTIFY request to the PoC Client according to rules and procedure of the SIP/IP Core.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.2.1.10 Cancel of PoC Session setup request

Upon reception of a SIP CANCEL request, the PoC Server:

- 1. SHALL act as UAS according to rules and procedures of [RFC3261]; and,
- 2. SHALL cancel the PoC Session invitations to the other PoC Clients as specified in subclause 7.2.2.3 "Cancel of PoC Session invitation request" or subclause 7.2.2.4 "Removal of Participant from PoC Session" depending whether the SIP session has not yet or has already been established in case of Ad-hoc and 1-1 PoC Session establishment and Pre-arranged PoC Group Session establishment.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.2.1.11 PoC Session Participant information request

7.2.1.11.1 Subscribing to Participant information

Upon receiving a SIP SUBSCRIBE request with the Event header set to "conference" according to rules and procedures of [draft-conference-state] the PoC Server:

- 1. SHALL, if the Request-URI contains a PoC Session Identity, check whether the PoC Session identified by the PoC Session Identity in the Request-URI is owned by the PoC Server and perform the actions specified in subclause 7.5.2 "Conference URI does not exist" if it is not owned by the PoC Server; Otherwise continue with the rest of the steps;
- 2. SHALL, if the request-URI contains a PoC Group Identity, check whether the PoC Group identified with the PoC Group Identity in the Request-URI is owned by the PoC Server and perform the actions specified in subclause 7.5.2 "Conference URI does not exist" if it is not owned by the PoC Server. Otherwise continue with the rest of the steps;
- 3. SHALL check whether the Accept-Contact header includes the PoC feature-tag '+g.poc.talkburst' and if it is not included the PoC Server SHALL return a SIP 403 "Forbidden" response. Otherwise, continue with the rest of the steps;
- 4. SHALL perform the actions to verify the Authenticated Originator's PoC Address and authorize the request and if it is not authorized the PoC Server SHALL return a SIP 403 "Forbidden" response. Otherwise, continue with the rest of the steps;

NOTE: A local policy, e.g. number of simultaneous subscriptions exceeded, may cause the PoC Server to reject the subscription request.

- 5. SHALL check whether the Authenticated Originator's PoC Address is allowed to subscribe to Participant information according to the "allow-conference-state" action as specified in [PoC XDM specification]. If it is not allowed the PoC Server performing the Controlling PoC Function SHALL respond with a SIP 403 "Forbidden" response to the originating network. Otherwise, continue with the rest of the steps;
- 6. SHALL create a subscription to the conference state of the PoC Session according to rules and procedures of [RFC3265] and [draft-conference-state];
- 7. SHALL generate a SIP 200 "OK" or a SIP 202 "Accepted" response to the SIP SUBSCRIBE request according to rules and procedures of [RFC3265] [draft-conference-state];
- 8. SHALL set the Contact header of the SIP response to the address of the PoC Server;
- 9. SHALL include the Authenticated Originator's PoC Address as specified in subclause 5.2 "Authenticated Originator's PoC Address"
 - a) set to the Conference-factory-URI in case of 1-1 PoC Session or Ad-hoc PoC Group Session; or
 - b) set to the PoC Group Identity of the PoC Group with the Session Type uri-parameter "session=prearranged" or "session=chat" as specified in E.5.1 "Session Type uri-parameter" in case of a Pre-arranged or Chat PoC Group respectively.
- 10. SHALL send SIP response towards the PoC Client according to rules and procedures of the SIP/IP Core;
- 11. SHALL generate an initial SIP NOTIFY request as specified in subclause 7.2.1.11.2 "Generating a SIP NOTIFY request"; and,
- 12. SHALL send the SIP NOTIFY request to the PoC Client according to rules and procedure of the SIP/IP Core.

When a change in the subscribed state occurs, the PoC Server SHOULD generate and send a SIP NOTIFY request as specified in subclause 7.2.1.11.2 "Generating a SIP NOTIFY request" and according to rules and procedures of SIP/IP Core respectively.

When needed the PoC Server SHALL terminate the subscription and indicate it to the PoC Client as described in the subclause 7.2.1.11.3 "Terminating the subscription".

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.2.1.11.2 Generating a SIP NOTIFY request

The PoC Server SHALL generate a SIP NOTIFY request according to rules and procedures of [RFC3265] with the clarifications in this subclause.

The PoC Server SHOULD limit the rate of SIP NOTIFY requests sent toward a PoC Client.

NOTE: How a PoC Server limits the rate of SIP NOTIFY requests towards the PoC Client is out of scope of this specification.

The PoC Server SHOULD avoid sending a SIP NOTIFY request towards a PoC Client at the same time as a Talk Burst is sent towards the PoC Client or a Talk Burst is received from the PoC Client.

When reporting changes in the Participant information the PoC Server SHALL use partial output according to rules and procedures of [draft-conference-state].

The PoC Server SHALL include a MIME conference-info+xml body according to rules and procedures of [draft-conference-state] with the following limitations:

- 1. The PoC Server SHALL include the PoC Group Identity of the PoC Group in the "entity" attribute of the "conference-info" element.
- 2. for each Participant in the PoC Session the PoC Server SHALL include a "user" element. The "user" element:
 - a) SHALL include the "entity" attribute. The "entity" attribute:
 - i. SHALL for the originating PoC Client include the Authenticated originator's PoC Address of the initial SIP INVITE request, if the Participant has not requested privacy; or,
 - ii. SHALL for the originating PoC Client include the FROM address, if the Participant has requested privacy; and,
 - iii. SHALL for an Invited PoC Client include the identity used in the URI-list for the Invited PoC Client to an Ad-hoc PoC Group Session or the identity used in the Pre-arranged PoC Group definition in case of a Pre-arranged PoC Group Session, if the Participant has not requested privacy; or,
 - iv. SHALL for an Invited PoC Client include an anonymous identity as specified in [draft-conference-state], if the Participant has requested privacy.
 - b) MAY include the "display-text" element. If included, the "display-text" element SHALL include the nick name of the identity which was used in the "entity" attribute as defined in a).
 - c) SHALL include a single "endpoint" element. The "endpoint" element
 - i. SHALL include the "entity" attribute;
 - ii. SHALL include the "status" element. The "status" element SHOULD have one of the following values:
 - A. "connected", when the Participant is added to the PoC Session; or,

- B. "disconnected", when the Participant has left the PoC Session since the last SIP NOTIFY request was sent; or,
- C. "on-hold", when the Participant has put the PoC Session on hold; or,
- D. "alerting", when the Invited PoC Client has responded by SIP 180 "Ringing", but not yet accepted the invitation.

NOTE 1: The usage of other values of the "status-type" element is not defined for PoC.

NOTE 2: The usage of other elements specified in [draft-conference-state] is not defined for PoC.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.2.1.11.3 Terminating the subscription

The PoC Server

- 1. SHALL terminate all subscriptions for PoC Session Participant information for the PoC Session when the PoC Session is released and not accept any re-subscriptions;
- 2. MAY terminate the subscription for a PoC Client when it leaves the PoC Session;
- 3. for each subscription that shall be terminated the PoC Server:
 - a) SHALL generate a SIP NOTIFY request according to rules and procedures specified in [RFC3265];
 - b) SHALL set the Subscription-State header to "terminated;noresources"; and,
 - c) SHALL send the SIP NOTIFY request to the PoC Client according to rules and procedure of SIP/IP Core.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [3GPP TS 24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.2.1.12 Group Advertisement request

Upon receipt of a SIP MESSAGE request containing the PoC feature-tag '+g.poc.groupad' in the Accept-Contact header the PoC Server:

- 1. SHALL reject the SIP MESSAGE request with a SIP 403 "Forbidden" response if Group Advertisement is not supported by the PoC Server. Otherwise continue with next step.
- 2. SHALL check whether Request-URI contains the PoC Group Identity owned by the PoC Server or a URL identifying the body part containing the MIME resource-list body of PoC Addresses of PoC Users according to rules and procedures of [draft-uri-list-message] and known by the PoC Server. Otherwise perform the actions specified in subclause 7.5.2 "*Conference URI does not exist*" if it is not owned. Otherwise, continue with the rest of the steps;
- 3. SHALL perform the actions to verify the Authenticated Originator's PoC Address and authorize the request and if it is not authorized the PoC Server SHALL return a SIP 403 "Forbidden" response. Otherwise, continue with the rest of the steps;
- 4. SHALL return a SIP 403 "Forbidden" response, if anonymity is requested. Otherwise, continue with the rest of the steps;
- 5. SHALL obtain the PoC Addresses of the members belonging to the PoC Group;
- 6. SHALL send the SIP MESSAGE request towards each PoC Address as specified in the subclause 7.2.2.6 "*Group Advertisement request*"; and,
- 7. SHALL send a SIP 202 "Accepted" response along the signalling path towards the initiating PoC Client.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.2.1.13 SIP Session refresh procedure

On receipt of a SIP re-INVITE request or a SIP UPDATE request including a Session-Expires value the PoC Server:

- 1. SHALL include the Session-Expires header in a SIP 200 "OK" response to the SIP request with the refresher parameter set to 'uac' and restart the SIP Session timer according to rules and procedures of [draft-ietf-sip-session-timer].

On expiry of the SIP Session timer the PoC Server SHALL initiate disconnection of the SIP Session as specified in subclause 7.2.2.4 "Removal of Participant from PoC Session".

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS session refresh mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.2.1.14 PoC Session initiation policy

In the case of a Pre-arranged PoC Group the PoC Server performing the Controlling PoC Function SHALL initiate the PoC Session if the Authenticated Originator's PoC Address is allowed the action <allow-initiate-conference> as specified in [PoC XDM Specification]:

In the case of a Pre-arranged PoC Group, the PoC Server performing the Controlling PoC Function SHALL invite PoC Users listed in the <list> element of the PoC Group document as specified in [PoC XDM Specification].

7.2.1.15 PoC Session adding policy

In the case of a Pre-arranged PoC Group or Restricted Chat PoC Group, the PoC Server performing the Controlling PoC Function SHALL invite PoC Users if the Authenticated Originator's PoC Address is allowed by the <allow-invite-users-dynamically> action as specified in [PoC XDM Specification]. When a request to add one or more PoC Users to a Restricted PoC Group is made by an authorized Participant of an ongoing PoC Session, the PoC Server performing the Controlling PoC Function SHALL only invite PoC Users if the Invited PoC Users are listed in the <list> element of the PoC Group document as specified in [PoC XDM Specification].

In the case of an Ad-hoc PoC Group or Unrestricted Chat PoC Group, the PoC Server performing the Controlling PoC Function SHALL invite PoC Users if the Authenticated Originator's PoC Address is a Participant of the PoC Session.

In the case of a 1-1 or Ad-hoc PoC Group the PoC Server performing the Controlling PoC Function SHALL invite the PoC Clients if the Authenticated Originator's PoC Address is allowed according to the PoC Server local policy. The PoC Server local policy may be e.g. that either only the PoC Session initiator or any of the Participants is allowed to add PoC Users.

7.2.1.16 PoC Session release policy

To enable the PoC Server to remove Participants from a PoC Session, the PoC Session release policy SHALL support the following operator configurable variables together with the possible values shown in parenthesis:

- auto-release (true/false)
 - if true the PoC Server SHALL remove rest of the Participants from Pre-arranged PoC Group Session and release the PoC Session when the originator leaves the PoC Session
 - if false the PoC Server SHALL NOT remove rest of the Participants from Pre-arranged PoC Group Session nor release those PoC Session when the originator leaves the PoC Session

NOTE 1: 1-1 and Ad-Hoc PoC Group Sessions are always released when the PoC Session initiator leaves the PoC Session regardless of the value of "auto-release". Chat PoC Group Sessions are unaffected by auto-release.

- session max length (seconds)
 - if the PoC Session has lasted the specified amount of seconds the PoC Server SHALL release the PoC Session

- number-of-remaining-participants (0/1)
 - if a Pre-arranged or Ad-hoc PoC Group Session has as many as or less than specified Participants left the PoC Server SHALL release the PoC Session. The possible values should be 0 or 1. This does not apply to Chat PoC Group Sessions.

NOTE 2: 1-1 PoC Sessions are always released whenever there is only one or no members left in the PoC Session regardless of the value of "number-of-remaining-participants".

The release policy SHALL include the following:

NOTE 3: Local policies may be defined by the operator and these local policies may impact the release policies defined here.

- 1. The PoC Server performing the Controlling PoC Function SHALL remove the rest of the Participants from the PoC Session it hosts and release the PoC Session:
 - a) if the PoC Session is an Ad-hoc or 1-1 PoC Session and the originator of the PoC Session leaves the PoC Session;
 - b) if the PoC Session is a Pre-arranged PoC Session and the originator of the PoC Session leaves the PoC Session and the auto-release has the value "true";
 - c) if the PoC Session is a 1-1 PoC Session and there is only one or no Participants in the PoC Session;
 - d) if the PoC Session is a Pre-arranged or Ad-hoc PoC Group Session and there are as many as or less than "number-of-remaining-participants" Participants in the PoC Session;
 - e) if the PoC Session has lasted longer than the session max length variable specifies; and,
 - f) if the PoC Session is Pre-arranged or Chat PoC Group Session and the PoC Group is deleted.
- 2. The PoC Server performing the Controlling PoC Function SHALL remove a Participant from the PoC Session:
 - a) if the PoC Session is Pre-arranged or restricted Chat PoC Group Session and the Participant is removed from the PoC Group.

7.2.1.17 Generating a SIP NOTIFY request to the SIP REFER request

When generating a SIP NOTIFY request the PoC Server:

- 1. SHALL generate a SIP NOTIFY request according to rules and procedures of [RFC3265], [RFC3515], and rules and procedures of the SIP/IP Core;
- 2. SHALL include in the SIP NOTIFY request a MIME sipfrag body as specified in the [RFC3420] with:
 - a) the Status-Line received in the SIP response, (e.g. SIP 180 "Ringing" or SIP 200 "OK"), as specified in [RFC3261];
 - b) the To header as received in the SIP response;
 - c) the Authenticated Originators PoC Address as if received in the SIP response;
 - d) the Warning header if it is received in the SIP response;
 - e) the P-Answer-State header if it is received in the SIP response from the Invited PoC User; and,
 - f) the Contact header if it is received in the SIP response.
- 3. SHALL send the SIP NOTIFY request to PoC Client according to rules and procedures of the SIP/IP Core.

The responses to the SIP NOTIFY request SHALL be handled in according to rules and procedures of [RFC3265], [RFC3515], and rules and procedures of the SIP/IP Core.

The PoC Server MAY terminate the implicit subscription created by the SIP REFER request and indicate the termination to the PoC Client according to rules and procedures of [RFC3265] and [RFC3515].

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.2.2 Request initiated by the Controlling PoC Function

7.2.2.1 General

The PoC Server SHALL generate an initial SIP INVITE request according to rules and procedures of [RFC3261]. The PoC Server

- 1. SHALL include an Accept-Contact header with the PoC feature-tag '+g.poc.talkburst' with "require" and "explicit" feature parameters according to rules and procedures of [RFC3841] in all initial INVITE requests;
- 2. SHALL set the Request-URI to the PoC Address of the PoC User to be invited;
- 3. SHALL include User-Agent header to indicate the PoC release version as specified in subclause E.4.1 "Release version in User-agent and Server headers";

NOTE: The use of the option tag 'precondition', as specified in [RFC3312], is not defined for the POC-2 reference point.

- 4. SHALL include an option tag '100rel' in a Supported header according to rules and procedures of [RFC3262];
- 5. SHALL include Authenticated Originator's PoC Address as specified in subclause 5.2 "Authenticated Originator's PoC Address"
 - a) set to the PoC Address of the Inviting PoC Client in case of 1-1PoC Session and Ad-hoc PoC Group Session; or,
 - b) set to the PoC Group Identity with the Session Type uri-parameter "session=prearranged" or "session=chat" as specified in E.5.1 "Session Type uri-parameter" in case of the Pre-arranged or Chat PoC Group respectively;
- 5. SHALL include a Referred-By header with the Authenticated Originator's PoC Address of the Inviting PoC Client;
- 6. SHALL include in the Contact header as PoC Session Identity the contact address of the conference with the PoC feature-tag '+g.poc.talkburst' and the feature-tag "isfocus" and a Session Type uri-parameter "session=1-1", or "session=adhoc", or "session=prearranged", or "session=chat" as appropriate for the type of the PoC Session as specified in E.5.1 "Session Type uri-parameter";
- 7. SHOULD include the Session-Expires header with the refresher parameter set to 'uas' according to rules and procedures of [draft-ietf-sip-session-timer];
- 8. SHALL include the Supported header set to "timer";
- 9. SHALL include value 'id' in a Privacy header according to rules and procedures of [RFC3325], if anonymity is requested with the "Privacy: id" header by the Inviting PoC Client;
- 10. SHOULD include an Allow header with all supported SIP methods; and,
- 11. SHALL include unmodified a P-Alerting-Mode header if a P-Alerting-Mode header was present in the incoming SIP INVITE request or SIP REFER request that caused the outgoing SIP INVITE request to be generated.

On receipt of the SIP 200 "OK" response to the initial outgoing SIP INVITE request the PoC Server SHALL start the SIP Session timer according to rules and procedures of [draft-ietf-sip-session-timer].

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS Session establishment mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.2.2.2 PoC Session invitation requests

This subclause describes the procedures for inviting a PoC User to a PoC Session. The procedure is initiated by the PoC Server as the result of an action specified in subclause 7.2.1 "Requests terminated at the Controlling PoC Function".

The PoC Server:

- 1. SHALL generate a SIP INVITE request as specified in subclause 7.2.2.1 "General";
- 2. SHALL set the nick name in the Authenticated Originator's PoC Address to the one defined for this PoC User in the PoC Group definitions as specified in [PoC XDMS], if configured; otherwise set the nick name in the Authenticated Originator's PoC Address to the one in the incoming SIP request;
- 3. SHALL include a MIME SDP body as a SDP offer according to rules and procedures of [RFC3264] and [RFC2327] as follows:
 - a) set the IP address and port number for the RTP Session;
 - b) include the codec(s) and Media Parameters selected by the PoC Server from those contained in the SDP offer in the incoming SIP INVITE request and if transcoding is supported by the PoC Server also MAY include the codec(s) and Media Parameters, which can be transcoded by the PoC Server to a codec contained in the SDP offer in the incoming SIP INVITE request;
 - c) if another IP address or port number is used instead of the default IP address and port number as specified in [RFC3550], the IP address and port number to be used for RTCP at the PoC Server according to rules and procedures of [RFC3605];
 - d) The offered Talk Burst Control Protocols and Talk Burst parameters selected by the PoC Server from those contained in the original SDP offer and MAY include the ones are supported by the PoC Server and can be translated by the PoC Server to those contained in the original SDP offer; and,
 - e) The PoC Server's port number(s) for the Talk Burst Control Protocol(s).
- 4. SHALL send the SIP INVITE request towards the SIP/IP Core according to rules and procedures of the SIP/IP Core.

Upon receiving a SIP 183 "Session Progress" response containing a Require header with the Option-tag '100rel' and containing a P-Answer-State header with the value "Unconfirmed" in response to the SIP INVITE request the PoC Server SHALL according to rules and procedures of [RFC3262] send a SIP PRACK request to the other PoC Server according to rules and procedures of the SIP/IP Core.

Upon receiving a SIP 180 "Ringing" response for the SIP INVITE request the PoC Server:

- 1. MAY send a notification to the PoC Clients, which have subscribed to the conference state event package that an Invited PoC User is alerted to join to the PoC Group Session, as specified in subclause 7.2.1.11.2 "Generating a SIP NOTIFY request".

Upon receiving SIP provisional responses for the SIP INVITE request(s) the PoC Server:

- 1. SHALL store the list of supported SIP methods if received in the Allow header; and
- 2. SHALL store the contact received in the Contact header;

Upon receiving SIP 200 "OK" response for the SIP INVITE request the PoC Server

- 1. SHALL store the list of supported SIP methods if received in the Allow header;
- 2. SHALL store the contact received in the Contact header;
- 3. SHALL check whether the privacy is allowed in this PoC Group, when anonymity is requested with the Privacy header containing the tag "id". If not allowed, the PoC Server SHALL according to local policy either accept the SIP response ignoring the privacy request or release the PoC Client from the PoC Session immediately as specified in 7.2.2.4 "Removal of PoC Participant from the PoC Session". Allowing privacy in the Group is defined using <allow-anonymity> element as specified in [PoC XDM Specification]. If accepted, continue with the rest of the steps;
- 4. SHALL interact with the User Plane as specified in [OMA-PoC-UP] "Controlling PoC Function procedures at PoC Session initialization"; and,
- 5. SHALL send a notification to the PoC Clients, which have subscribed to the conference state event package that an Invited PoC User has joined in the PoC Group Session, as specified in subclause 7.2.1.11.2 "Generating a SIP NOTIFY request".

NOTE: Procedures towards Inviting PoC Clients, when SIP 183 "Session Progress", SIP 180 "Ringing" SIP 200 "OK" or other SIP final response (4xx, 5xx, 6xx) is received, are specified subclause 7.2.1 *"Requests Terminated at the Controlling PoC Function"*.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.2.2.3 Cancel of PoC Session invitation requests

When the PoC Server needs to cancel the PoC Session invitation request and when it has not received a SIP final response, the PoC Server SHALL cancel the SIP INVITE request acting as UAC according to rules and procedures of [RFC3261];

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.2.2.4 Removal of Participant from PoC Session

When a Participant needs to be removed from the PoC Session the PoC Server:

- 1. SHALL interact with User Plane as specified in [OMA-PoC-UP] "Controlling PoC Function procedures at PoC Session release";
- 2. SHALL generate a SIP BYE request according to rules and procedures of [RFC3261]; and,
- 3. SHALL send the SIP BYE request towards the PoC Client of the Participant according to rules and procedures of the SIP/IP Core;

Upon receiving a SIP 200 "OK" for the SIP BYE request, the PoC Server SHALL release User Plane resources towards the Participating PoC Function (or towards the PoC Client if there is no Participating PoC Function on the User Plane path) by interacting with the User Plane as specified in [OMA-PoC-UP] *"Controlling PoC Function procedures at PoC Session release"*.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.2.2.5 PoC Session modification

This subclause describes the optional procedures for modifying Media Parameters for one SIP Session in an ongoing PoC Session. The procedure MAY be initiated by the PoC Server as the result of an action specified in subclause 7.2.1 *"Requests terminated at the Controlling PoC Function"*.

The PoC Server

- 1. SHALL generate either a SIP UPDATE request or a SIP re-INVITE request. A SIP UPDATE request MAY be used only if the PoC Server performing the Participating PoC Function has indicated support for the SIP UPDATE method;
- 2. SHALL include a MIME SDP body as a SDP offer according to rules and procedures of [RFC3264] and [RFC2327] with the modified Media Parameters; and,
- 3. SHALL send the SIP request towards PoC Client according to rules and procedures of SIP/IP Core.

Upon receipt of a SIP 200 "OK" response the PoC Server:

- 1. SHALL activate the new Media Parameters as specified in [OMA-PoC-UP] *"User Plane adaptation"*.

The PoC Server SHALL continue to use the current Media Parameters until it has received a SIP 200 "OK" response.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.2.2.6 Group Advertisement request

When the PoC Server supports the sending of a Group Advertisement to a PoC Address, the PoC Server:

- 1. SHALL generate a SIP MESSAGE request according to rules and procedures of [RFC3428];

- 2. SHALL include an Accept-Contact header with the PoC feature-tag '+g.poc.groupad' along with 'require' and 'explicit' parameters according to rules and procedures of [RFC3841];
- 3. SHALL include PoC specific content in form of application/vnd.poc.advertisement+xml indicating 'Group Advertisement'. If this procedure has been initiated by a request received from a SIP/IP Core then the content SHALL be the same as in the request received from the SIP/IP Core;
- 4. SHALL set the Request-URI to the PoC Address; and,
- 5. SHALL forward the SIP MESSAGE request towards the SIP/IP Core according to rules and procedures of the SIP/IP Core.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3 Participating PoC Function procedures

7.3.1 Requests initiated by the served PoC User

7.3.1.1 General

Upon receiving from the served PoC Client an initial SIP INVITE request or SIP REFER request that requires an initial SIP INVITE request to be sent, the PoC Server:

- 1. SHALL generate an initial SIP INVITE request according to rules and procedures of [RFC3261];
- 2. SHALL, if the incoming SIP INVITE or SIP REFER request contained a Privacy header, include in the SIP INVITE request the Privacy header unmodified according to rules and procedures of [RFC3325];
- 3. SHALL set the Request-URI to the PoC Address of the PoC User to be invited;
- 4. SHALL set the nick name in the Authenticated Originator's PoC Address to the one defined for the PoC User in the PoC Server, if configured; otherwise set the nick name in the Authenticated Originator's PoC Address to the one in the incoming SIP request;
- 5. SHALL include an Accept-Contact header with the PoC feature-tag '+g.poc.talkburst' with "require" and "explicit" parameters according to rules and procedures of [RFC3841];
- 6. SHALL include User-Agent header to indicate the PoC release version as specified in subclause E.4.1 "*Release version in User-agent and Server headers*";

NOTE 1: The use of the option tag 'precondition', as specified in [RFC3312], is not defined for the POC-1 or POC-2 reference points.

NOTE 2: The use of the option tag '100rel', as specified in [RFC3262] is not defined for the POC-1 reference point.

- 7. SHOULD include the Session-Expires header with the refresher parameter set to 'uac' according to rules and procedures of [draft-ietf-sip-session-timer];
- 8. SHALL include the option tag 'timer' in a Supported header;
- 9. SHALL store the allowed SIP methods if received in the Allow header;
- 10. SHOULD include an Allow header with all supported SIP methods;
- 11. SHALL include the Authenticated Originator's PoC Address received in the incoming SIP INVITE request in the outgoing SIP INVITE request;
- 12. SHALL discard a P-Alerting-Mode header that is set to anything other than "MAO"; and,
- 13. SHALL include in the Contact header the feature-tag '+g.poc.talkburst'.

When sending SIP provisional responses, other than the SIP 100 "Trying" response, to the SIP INVITE request and if the PoC Server is acting as a B2BUA, the PoC Server:

- 1. SHALL generate the SIP provisional response according to rules and procedures of [RFC3261];
- 2. SHALL include a Server header with the PoC release version as specified in subclause E.4.1 "*Release version in User-agent and Server headers*" if has not already been sent in a provisional response for this dialog;

- 3. SHALL include the Authenticated Originator's PoC Address received in the incoming SIP response in the outgoing SIP provisional response; and,
- 4. SHALL if not already sent in a provisional response for this dialog, include a SIP URI for the Contact header as follows:
 - a) constructed such that the PoC Server can also resolve it back to the original SIP URI provided in the Contact header of the provisional response by the Controlling PoC Function;
 - b) include the PoC feature-tag '+g.poc.talkburst';
 - c) include the Session Type URI-parameter provided in the Contact header of the provisional response received from the Controlling PoC Function.

When sending a SIP 200 "OK" response to the SIP INVITE request and if the PoC Server is acting as a B2BUA the PoC Server

- 1. SHALL generate a SIP 200 "OK" response according to rules and procedures of [RFC3261];
- 2. SHALL include a Server header to indicate the PoC release version as specified in subclause E.4.1 "Release version in User-agent and Server headers" if has not already been sent in a provisional response for this dialog;
- 3. SHALL include the option tag 'timer' in a Require header;
- 4. SHALL include the Session-Expires header in with the refresher parameter set to 'uac';
- 5. SHALL start the SIP Session timer according to rules and procedures of [draft-ietf-sip-session-timer];
- 6. SHOULD include an Allow header with all supported SIP methods;
- 7. SHALL include a SIP URI for the Contact header as follows:
 - a) constructed such that the PoC Server can also resolve it back to the original SIP URI provided in the Contact header of the SIP 200 "OK" response by the Controlling PoC Function;
 - b) include the PoC feature-tag '+g.poc.talkburst'; and,
 - c) include the Session Type uri-parameter provided in the Contact header of the SIP 200 "OK" response received from the Controlling PoC Function.
- 8. SHALL include the Authenticated Originator's PoC Address received in the incoming SIP 200 "OK" response in outgoing SIP 200 "OK" response.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS Session mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.1.2 Pre-established Session

Upon receipt of an initial SIP INVITE request that includes a Conference-factory-URI in the Request-URI but no invited member(s), the PoC Server performing the Participating PoC Function:

- 1. SHALL check whether the Accept-Contact header included the PoC feature-tag '+g.poc.talkburst' and if it is not included the PoC Server SHALL return a SIP 403 "Forbidden" response. Otherwise, continue with the rest of the steps;
- 2. SHALL, if the PoC Server cannot accept the request, return a SIP 403 "Forbidden" response according to rules and procedures of [RFC3261]. Otherwise, continue with the rest of the steps;

NOTE: Pre-established Session is an optional function; hence, the above condition is for the case where the PoC Server does not support this optional function.

- 3. SHALL check whether the Conference-factory-URI is allocated and perform the actions specified in subclause 7.5.1 "Conference-factory URI does not exist" if it is not allocated. Otherwise, continue with the rest of the steps;
- 4. SHALL perform the actions to verify the Authenticated Originator's PoC Address of the PoC Client and verify the request authorization. If the request cannot be authorized, the PoC Server SHALL return a SIP 403 "Forbidden" response and not continue with the rest of the steps;

- 5. SHALL validate that the Media Parameters are acceptable by the PoC Server and if not reject the request with a SIP 488 "Not Acceptable Here" response. Otherwise, continue with the rest of the steps;
- 6. SHALL allocate a URI to be used as a PoC Session Identity to identify the Pre-established Session;
- 7. SHALL generate a SIP 200 "OK" response to the SIP INVITE request as follows:
 - a) a Contact header containing the PoC Group Identity identifying the Pre-established Session along with the PoC feature tag '+g.poc.talkburst' and the feature tag 'isfocus';
 - b) an Allow header with all supported SIP methods;
 - c) a Server header to indicate the PoC release version as specified in subclause E.4.1 "Release version in User-agent and Server headers";
 - d) include the option tag 'timer' in a Require header;
 - e) a Session-Expires header with the refresher parameter set to "uac" according to rules and procedures of [draft-ietf-sip-session-timer];
 - f) include the Conference-factory-URI in the Authenticated Originator's PoC Address as specified in the subclause 5.2 "Authenticated Originator's PoC Address"; and,
 - g) a MIME SDP body as a SDP answer according to rules and procedures of [RFC3264] and [RFC2327] as below:
 - i. The IP address and port number at the PoC Server for the RTP Session;
 - ii. The codec(s) and Media Parameters selected by the PoC Server from those contained in the original SDP offer from the PoC Client;
 - iii. Optionally if another IP address or port is used instead of the default IP address and port number as specified in [RFC3550], set the IP address and port number to be used for RTCP at the PoC Server according to rules and procedures of [RFC3605];
 - iv. The Talk Burst Control Protocol(s) and Talk Burst parameters selected by the PoC Server from those contained in the original SDP offer in the incoming SIP INVITE request from the PoC Client; and
 - v. The PoC Server's port number(s) to be used for the Talk Burst Control Protocol(s).
- 8. SHALL send the SIP 200 "OK" response towards the PoC Client according to the rules and procedures of the SIP/IP Core;
- 9. SHALL start the SIP Session timer using the value received in the Session-Expires header according to rules and procedures of [draft-ietf-sip-session-timer]; and,
- 10. SHALL interact with the User Plane as specified in [OMA-PoC-UP] "Participating PoC Function procedures at Pre-established Session release".

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS Session establishment mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.1.3 Pre-established Session modification

This subclause describes the procedures that the Participating PoC Server upon receiving a SIP UPDATE request or a SIP re-INVITE request for modifying the Pre-established Session.

The PoC Server:

- 1. SHALL examine the version parameter in the MIME SDP body and determine if a change of the Media Parameters is requested;
- 2. SHALL validate that the new media capabilities ("a=inactive" or "a=sendrecv") are acceptable by the PoC Server and if not reject the request with a SIP 488 "Not Acceptable Here" response. Otherwise, continue with the rest of the steps;
- 3. SHALL update the User Plane with the new Media Parameters as specified in [OMA-PoC-UP] "User Plane adaptation"; and,

- 4. SHALL generate a SIP 200 "OK" response as follows:
 - a) include a MIME SDP body as a SDP offer according to rules and procedures of [RFC3264] and [RFC2327] with the new media capabilities; and,
 - b) send a SIP 200 "OK" response to the SIP/IP Core along the signalling path.

NOTE 1: In case the Pre-established Session is on hold the PoC Server performing the Participating PoC Function shall forward the PoC Session initiation messages between the PoC Client and the PoC Server performing the Controlling PoC Function.

NOTE 2: In case the media parameters have been re-negotiated during the PoC Session, they are valid in the Pre-established Session also after the PoC Session is released.

7.3.1.4 PoC Session establishment or rejoin using On-demand Session

Upon receiving an initial SIP INVITE request containing a Request-URI with a Conference-Factory-URI owned by this PoC Server, the PoC Server:

NOTE 1: The procedure as follows applies when a PoC Client initiates an Ad-hoc PoC Group Session or 1-1 PoC Session. The PoC Session will be owned by this same PoC Server.

- 1. SHALL if a P-Alerting-Mode header with the value "MAO" is present in the incoming SIP INVITE request authorize whether the Served PoC User indicated by the Authenticated Originator's PoC Address is entitled to request Manual Answer Override and if authorized then include a P-Alerting-Mode header with the value "MAO" in the SIP INVITE request created in response to the received SIP INVITE request. Otherwise the PoC Server SHALL return a SIP 403 "Forbidden" response and not continue with the rest of the steps; and,
- 2. SHALL also adapt the role of a Controlling PoC Function and continue as specified in the subclause 7.2.1.2 "*Ad-hoc PoC Group and 1-1 PoC Session setup request*".

NOTE 2: The handling of SIP requests and SIP responses within the SIP dialogue created by this SIP INVITE request is described in the 7.2.1.2 "*Ad-hoc PoC Group and 1-1 PoC Session setup request*".

Upon receiving an initial SIP INVITE request that contains a Request-URI not owned by this PoC Server, the PoC Server:

NOTE 3: The following procedure of this subclause applies when a PoC Client initiates or joins a Pre-arranged PoC Group Session, or when a PoC Client rejoins a PoC Session, or when a PoC Client joins a Chat PoC Group Session and in all these cases the PoC Session is owned by another PoC Server.

either

- 1. SHALL check whether the Accept-Contact header includes the feature-tag '+g.poc.talkburst' and if it does not the PoC Server SHALL return a SIP 403 "Forbidden" response. Otherwise, continue with the rest of the steps;
- 2. SHALL perform the actions to verify the Authenticated Originator's PoC Address of the Inviting PoC User and authorize the request and if it is not authorized the PoC Server SHALL return a SIP 403 "Forbidden" response. Otherwise, continue with the rest of the steps;
- 3. SHALL validate that the new Media Parameters are acceptable by the PoC Server when staying on the media path and Talk Burst Control path and if not reject the request with a SIP 488 "Not Acceptable Here" response. Otherwise, continue with the rest of the steps;
- 4. SHALL behave as a B2BUA according to rules and procedures of [RFC3261] for the duration of the PoC Session, when staying on the media path and Talk Burst control path;
- 5. SHALL generate a SIP INVITE request as specified in subclause 7.3.1.1 "*General*";
- 6. SHALL insert a URI identifying its own address and the PoC feature-tag '+g.poc.talkburst' in the Contact-header of the SIP INVITE request;

- 7. SHALL if a P-Alerting-Mode header with the value "MAO" is present in the incoming SIP INVITE request authorize whether the Served PoC User indicated by the Authenticated Originator's PoC Address is entitled to request Manual Answer Override and if authorized then include in the SIP INVITE request a P-Alerting-Mode header with the value "MAO" otherwise the PoC Server SHALL return a SIP 403 "Forbidden" response and not continue with the rest of the steps;
- 8. SHALL check if the number of maximum Simultaneous PoC Sessions for the PoC Client has exceeded. If exceeded, the PoC Server SHALL respond with a SIP 486 "Busy Here" response with the warning header "too many Simultaneous PoC Sessions". Otherwise, continue with the rest of the steps;
- 9. SHALL insert a Request-URI as follow:
 - a) copy the received Request-URI; or,
 - b) resolve back the received Request-URI to the SIP URI received in the Contact header from the PoC Server performing the Controlling PoC Function within the SIP 200 "OK" response to the initial SIP INVITE request in the case of rejoin.
- 10. SHALL include a MIME SDP body as a SDP offer in the SIP INVITE request according to rules and procedures of [RFC3264] and [RFC2327] as follows:
 - a) The IP address and port number at the PoC Server for the RTP Session;
 - b) Set the codec(s) and Media Parameters selected by the PoC Server from those contained in the original SDP offer in the incoming SIP INVITE request from the PoC Client and if the PoC Server supports transcoding, the PoC Server MAY also include the codec(s) and Media Parameters, which can be transcoded by the PoC Server to a codec contained in the SDP offer in the incoming SIP INVITE request;
 - c) if another IP address or port is used instead of the default IP address and port number as specified in [RFC3550], set the IP address and port number to be used for RTCP at the PoC Server according to rules and procedures of [RFC3605];
 - d) The offered Talk Burst Control Protocol(s) and Talk Burst parameters selected by the PoC Server from those contained in the original SDP offer in the incoming SIP INVITE request from the PoC Client and if the PoC Server supports interworking between Talk Burst Control Protocols, the PoC Server MAY also include the Talk Burst Control Protocol(s) which can be interworked by the PoC Server to a Talk Burst Control Protocol contained in the SDP offer in the incoming SIP INVITE request; and
 - e) The PoC Server's port number(s) for the Talk Burst Control Protocol(s).
- 11. SHALL send the SIP INVITE request towards the PoC Server performing the Controlling PoC Function according to rules and procedures of the SIP/IP Core.

or

- 1. SHALL act as a SIP proxy according to rules and procedures of [RFC3261] for the duration of the PoC Session, when not staying in media and Talk Burst control message path;
- 2. SHALL include a Record-Route header containing a URI identifying its own address; and,
- 3. SHALL forward the SIP INVITE request towards the PoC Server performing the Controlling PoC Function.

Upon receiving a SIP 180 "Ringing" response and when the PoC Server is acting as a B2BUA, the PoC Server:

- 1. SHALL store the list of supported SIP methods if received in the Allow header;
- 2. SHALL store the contact if received in the Contact header;
- 3. SHALL generate a SIP 180 "Ringing" response to the SIP INVITE request as specified in the subclause 7.3.1.1 "General"; and,
- 4. SHALL forward the SIP 180 "Ringing" response to the PoC Client according to rules and procedures of the SIP/IP Core.

Upon receiving a SIP 180 "Ringing" response and when the PoC Server is acting as a SIP proxy the PoC Server SHALL forward the SIP response towards the PoC Server performing the Controlling PoC Function according to rules and procedures of [RFC3261].

Upon receiving a SIP 200 "OK" response, the PoC Server is acting as a B2BUA, the PoC Server:

- 1. SHALL store the list of supported SIP methods if received in the Allow header;
- 2. SHALL store the contact received in the Contact header;
- 3. SHALL generate a SIP 200 "OK" response as specified in the subclause 7.3.1.1 "General";
- 4. SHALL include a MIME SDP body as a SDP answer according to rules and procedures of [RFC3264] and [RFC2327] as follows:
 - a) The IP address and port number at the PoC Server for the RTP Session;
 - b) The codec(s) and Media Parameters selected by the PoC Server from those contained in the original SDP offer from the PoC Client and those contained in the SDP answer in SIP 200 "OK" response from the Controlling PoC Function;
 - c) If another IP address or port is used instead of the default IP address and port number as specified in [RFC3550], set the IP address and port number to e used for RTCP at the PoC Server according to rules and procedures of [RFC3605];
 - d) The Talk Burst Control Protocol(s) and Talk Burst parameters selected by PoC Server from those contained in the original SDP offer from the PoC Client and from those contained in the SDP answer in SIP 200 "OK" response from the Controlling PoC Function.
 - e) The PoC Server's port number(s) to be used for the Talk Burst Control Protocol(s); and
 - f) Optionally "tb-granted" indication as specified in E.3 "SDP Extensions".
- 5. SHALL interact with User Plane as specified in [OMA-PoC-UP] "*Participating PoC Function procedures at PoC Session initialization*";
- 6. SHALL include unmodified a P-Answer-State header if a P-Answer-State header was present in the incoming SIP 200 "OK" response;
- 7. SHALL send the SIP 200 "OK" response to the PoC Client according to rules and procedures of SIP/IP Core;

Upon receiving a SIP 200 "OK" response, when the PoC Server is acting as a SIP proxy

- 1. SHALL forward the SIP 200 "OK" response toward the initiating PoC Client according to rules and procedures of [RFC3261] and SIP/IP Core;
- 2. SHALL continue to act as a SIP proxy for the duration of the PoC Session.

Upon receiving a SIP final response other than a SIP 200 "OK", the PoC Server SHALL forward the SIP final response along the signalling path towards the initiating PoC Client.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.1.5 PoC Session initiation using Pre-established Session

NOTE: The procedure in this subclause applies upon receiving a SIP REFER request containing in the Request-URI a SIP URI of a Pre-established Session owned by this PoC Server if the "method" parameter in the Refer-to header is set as "INVITE" or is not present.

The PoC Server:

- 1. SHALL check if the number of maximum Simultaneous PoC Sessions for the PoC Client has exceeded. If exceeded, the PoC Server SHALL respond with a SIP 486 "Busy Here" response with the warning header "too many Simultaneous PoC Sessions". Otherwise, continue with the rest of the steps;
- 2. SHALL if a P-Alerting-Mode header with the value "MAO" is present in the incoming SIP REFER request authorize whether the Served PoC User indicated by the Authenticated Originator's PoC Address is entitled to request Manual

Answer Override and if authorized proceed with the next step otherwise the PoC Server SHALL return a SIP 403 "Forbidden" response and not continue with the rest of the steps. If P-Alerting-Mode Header is set to any other value than "MAO", the P-Alerting-Mode header SHALL be discarded.

- 3. SHALL check the SIP URI in the Refer-To header. If the SIP URI in the Refer-To header does not include the Session Type uri-parameter "session=adhoc", "session=prearranged" or "session=chat" the PoC Server:
 - a) SHALL perform the procedures as specified in 7.2.1.8 "Adding Participants to PoC Session Request" and do not do anything else in this subclause.
- 4. SHALL behave as a B2BUA according to rules and procedures of [RFC3261] for the duration of the PoC Session;
- 5. SHALL generate a final SIP response 2xx according to rules and procedures of [RFC3515];
- 6. SHALL check the presence of the "norefersub" option tag in the Require header of the SIP REFER request and if it is present then the PoC Server SHALL include in the response to the SIP REFER request a Supported header with the option tag "norefersub" according to rules and procedures of [draft-norefersub];
- 7. SHALL send the SIP response to the SIP REFER request towards the PoC Client according to rules and procedures of the SIP/IP Core;
- 8. SHALL generate a SIP INVITE request as specified in subclause 7.3.1.1 "General" using the URI out of the Refer-To in the SIP REFER request;
- 9. SHALL include in the SIP INVITE request a MIME SDP body containing the Media Parameters of the PoC Server as an SDP offer according to rules and procedures of [RFC3264] and [RFC2327] as follows:
 - a) The IP address and port number at the PoC Server for the RTP Session;
 - b) The codec(s) and Media Parameters as negotiated during the Pre-established Session establishment as specified in the subclause 7.3.1.2 "Pre-established Session", and if the PoC Server supports transcoding, the PoC Server MAY also include the codecs and Media Parameters which can be transcoded by the PoC Server to a codec contained in the SDP offer in the incoming SIP INVITE request when Pre-established Session was established;
 - c) If another IP address or port is used instead of the default IP address and port number as specified in [RFC3550], set the IP address and port number to be used for RTCP at the PoC Server according to rules and procedures of [RFC3605];
 - d) The offered Talk Burst Control Protocol(s) and Talk Burst Parameters as negotiated during the Pre-established Session establishment as specified in the subclause 7.3.1.2 "Pre-established Session", and if the interworking between the Talk Burst Control Protocols is supported, the PoC Server MAY also include the Talk Burst Control Protocol(s) which can be interworked by the PoC Server to a Talk Burst Control Protocol contained in the SDP offer in the incoming SIP INVITE request; and,
 - e) The PoC Server's port number(s) for the Talk Burst Control Protocol(s).

NOTE: If the media is "Inactive" on the Pre-established Session when the SIP REFER request is received then the media in the SDP offer is also set to "Inactive".

- 10. SHALL if a P-Alerting-Mode header with the value "MAO" is present in the incoming SIP REFER request include a P-Alerting-Mode header with the value "MAO" in the SIP INVITE request;
- 11. SHALL send the SIP INVITE request towards the PoC Server performing the Controlling PoC Function according to rules and procedures of the SIP/IP Core;and,

NOTE: B2BUA do not forward any SIP provisional nor final responses.

- 12. SHALL if the "norefersub" option tag is not present in the Require header of the SIP REFER request generate and send to the PoC Client SIP NOTIFY request(s) as specified in the subclause 7.2.1.17 "Generating a SIP NOTIFY request to the SIP REFER request" based on the progress of the invitation. Do not continue to the rest of the steps.

Upon receiving SIP provisional responses for the SIP INVITE request(s) the PoC Server:

- 1. SHALL store the list of supported SIP methods if received in the Allow header;
- 2. SHALL store the contact received in the Contact header; and,
- 3. SHALL discard the received SIP responses without forwarding them.

Upon receiving a SIP 200 "OK" response for the SIP INVITE request the PoC Server:

- 1. SHALL store the list of supported SIP methods if received in the Allow header;
- 2. SHALL store the contact received in the Contact header; and,
- 3. SHALL interact with User Plane as specified in [OMA-PoC-UP] "*Participating PoC Function procedures at PoC Session initialization*", when a PoC Session is initiated;

Upon receiving a SIP 403 "Forbidden" response with the text "isfocus already assigned" in the Warning header, the PoC Server SHALL if the "norefersub" option tag is not present in the Require header of the SIP REFER request, generate and send to the PoC Client a SIP NOTIFY request as specified in the subclause 7.2.1.17 "*Generating a SIP NOTIFY request to the SIP REFER request*" containing at least a SIP response Status-Line, Warning and To headers as specified in this subclause.

Upon receiving a SIP final response other than 2xx or 3xx or 403, that is one of the SIP 4xx, 5xx or 6xx responses the PoC Server:

- 1. SHALL discard the received SIP responses without forwarding them.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms, according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.1.6 PoC Session modifications

Upon receiving a SIP UPDATE request or a SIP re-INVITE request from the PoC Client during an Active PoC Session including a new SDP offer as specified by [RFC3264] and [RFC2327] a PoC Server acting as a B2BUA:

- 1. SHALL validate that the Media Parameters are acceptable to the PoC Server and if not reject the request with a SIP 488 "Not Acceptable Here" response. Otherwise continue with the rest of the steps;
- 2. SHALL generate a SIP UPDATE request according to rules and procedures of [RFC3311] or a SIP re-INVITE request according to rules and procedures of [RFC3261]. A SIP UPDATE request MAY be used only if the PoC Server performing the Controlling PoC Function has indicated support for the SIP UPDATE method;
- 3. SHALL include a MIME SDP body as a SDP offer in the SIP UPDATE request and SIP re-INVITE request according to rules and procedures of [RFC3264] and [RFC2327] with the new Media Parameters; and,
- 4. SHALL send the SIP request towards the PoC Server performing the Controlling PoC Function within the existing SIP dialog according to rules and procedures of the SIP/IP Core.

On receipt of a SIP 200 "OK" response the PoC Server:

- 1. SHALL generate a SIP 200 "OK" response to the SIP UPDATE request and SIP re-INVITE according to rules and procedures of [RFC3261];
- 2. SHALL, if the PoC Server is in the media path, update the User Plane with the new Media Parameters received in the MIME SDP body as specified in [OMA-PoC-UP] "*User Plane adaptation*"; and,
- 3. SHALL send a SIP 200 "OK" response towards the PoC Client according to rules and procedures of SIP/IP Core.

Upon receiving a SIP UPDATE request or a SIP re-INVITE request from the PoC Client during an Active PoC Session a PoC Server acting as a SIP proxy SHALL act according to rules and procedures of [RFC3261].

Upon receiving SIP final response other than SIP 200 "OK" the PoC Server SHALL forward the SIP response to the PoC Client according to rules and procedures of SIP/IP Core.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS Session mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.1.7 SIP SUBSCRIBE request

Upon receiving a SIP SUBSCRIBE request that contains a SIP URI corresponding to a PoC Session owned by this PoC Server the PoC Server:

- 1. SHALL perform the Controlling PoC Function as specified in subclause 7.2.1.11.1 "*Subscribing to Participant information*".

If the PoC Server receives a SIP SUBSCRIBE request that contains a PoC Session Identity or PoC Group Identity not owned by this PoC Server then the PoC Server:

NOTE: The case when the PoC Session or the PoC Group is owned by the PoC Server is described in subclause 7.2.1.11 “*PoC Session PoC Participant information request*”

- 1. SHALL, if the PoC Server wants to stay on the signalling path insert a Record-Route header containing a URI identifying its own address;
- 2. SHALL, if the PoC Server is acting as a B2BUA for the PoC Session insert a Request-URI by resolving back the received Request-URI to the SIP URI received in the Contact header from the PoC Server performing the Controlling PoC Function within the SIP 200 “OK” response to the initial SIP INVITE request; and,
- 3. SHALL forward the SIP SUBSCRIBE request towards the SIP/IP Core.

Upon receiving a SIP final response PoC Server SHALL forward the SIP final response along the signaling path towards the initiating PoC Client according to rules and procedures of [RFC3261].

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.1.8 SIP REFER request received

Upon receiving a SIP REFER request containing in the Request-URI a SIP URI of a Pre-established Session owned by this PoC Server, the PoC Server:

- 1. SHALL perform the procedures specified in subclause 7.3.1.5 “*PoC Initiation Using Pre-established Session*”, if the “method” parameter in the Refer-to header is set as “INVITE” or is not present; or
- 2. SHALL perform the procedures specified in subclause 7.3.1.10.2 “*SIP REFER BYE request from the PoC Client - Pre-established Session case*”, if the “method” parameter in the Refer-to header is set as “BYE”.

Upon receiving a SIP REFER request containing in the Request-URI a SIP URI of a PoC Session not owned by this PoC Server, the PoC Server:

- 1. SHALL, if the PoC Server wants to remain on the signalling path insert a Record-Route header containing its own address; and,
- 2. SHALL forward the SIP REFER request towards the Controlling PoC Function according to rules and procedures of the SIP/IP Core.

Upon receiving a SIP final response the PoC Server SHALL forward the SIP final response along the signaling path towards the initiating PoC Client according to rules and procedures of [RFC3261].

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.1.9 SIP CANCEL request

Upon receiving a SIP CANCEL request from the PoC Client, a PoC Server acting as a B2BUA:

- 1. SHALL act as UAS according to rules and procedures of [RFC3261]; and,
- 2. SHALL cancel the SIP INVITE request towards the PoC Server performing the Controlling PoC Function acting as UAC according to rules and procedures of [RFC3261].

When acting as a SIP proxy rules and procedures as specified in [RFC3261] SHALL be applied.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.1.10 SIP BYE request from PoC Client

7.3.1.10.1 SIP BYE request from PoC Client – On-demand Session case

Upon receiving a SIP BYE request from the PoC Client a PoC Server acting as a B2BUA:

- 1. SHALL generate a SIP 200 "OK" response and send it towards PoC Client according to rules and procedures of the SIP/IP Core;
- 2. SHALL release User Plane resources associated with the SIP Session with the PoC Client as specified in [OMA-PoC-UP] "*Participating PoC Function procedures at PoC Session release*"; and,
- 3. SHALL send a SIP BYE request towards the PoC Server performing the Controlling PoC Function according to rules and procedures of the SIP/IP Core;

Upon receiving a SIP 200 "OK" response to the SIP BYE request the PoC Server SHALL release User Plane resources associated with the SIP Session with the PoC Server performing the Controlling PoC Function as specified in [OMA-PoC-UP] "*Participating PoC Function procedures at PoC Session release*".

When acting as a SIP proxy rules and procedures as specified in [RFC3261] SHALL be applied.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.1.10.2 SIP REFER BYE request from PoC Client – Pre-established Session case

Upon receiving from the PoC Client a SIP REFER request with the method parameter set to value "BYE" in the Refer-To header the PoC Server:

- 1. in case of a PoC Session is established within a Pre-established Session as specified in subclause 6.1.3.2.2 "*PoC Client initiates an Ad-hoc PoC Group Session and 1-1 PoC Session*", the PoC Server
 - a) SHALL perform the procedures as specified in subclause 7.2.1.9.2 "*SIP REFER BYE request received within a Pre-established Session*". Do not continue the rest of the steps.
- 2. in case of a PoC Session is established within Pre-established Session, as specified in subclause 6.1.4.2.3 "*PoC Client initiates a Pre-arranged or Chat PoC Group Session*", or by sending a TBCP message to the PoC Client as specified in [OMA-PoC-UP] "*Participating PoC Function procedures at PoC Session initialization*", the PoC Server
 - a) SHALL extract from the Refer-To header the PoC Session Identity that the PoC Client wants to leave;
 - b) SHALL generate a final SIP 2xx response to the SIP REFER request according to rules and procedures of [RFC3515];
 - c) SHALL check the presence of the "norefersub" option tag in the Require header of the SIP REFER request and if it is present then the PoC Server SHALL include in the response to the SIP REFER request a Supported header with the option tag "norefersub" according to rules and procedures of [draft-norefersub];
 - d) SHALL send the SIP response to the SIP REFER request towards the PoC Client according to rules and procedures of the SIP/IP Core;
 - e) SHALL generate a SIP BYE request and set the Request-URI to the PoC Session Identity;
 - f) SHALL send the SIP BYE request towards the Controlling PoC Function according to rules and procedures of the SIP/IP Core;
 - g) SHALL upon receiving a SIP 200 "OK" response for the SIP BYE request release User Plane resources towards the Controlling PoC Function as specified in [OMA-PoC-UP] "*Participating PoC Function procedures at PoC Session release*"; and,
 - h) SHALL if the "norefersub" option tag is not present in the Require header of the SIP REFER request, generate and send the PoC Client SIP NOTIFY request(s) as specified in the subclause 7.2.1.17 "*Generating a SIP NOTIFY request to the SIP REFER request*" based on the progress of the BYE request.

NOTE: A SIP REFER request according to rules and procedures of [RFC3515] or [draft-multiple-refer] is an implicit subscription to event "refer" in case "norefersub" option tag is not present in the Require header.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.1.10.3 Pre-established Session release request from PoC Client

Upon receiving a SIP BYE request from the PoC Client within a Pre-established Session the PoC Server:

- 1. SHALL check whether there is a PoC Session using the Pre-established Session. If there is not, then the PoC Server
 - a) SHALL disconnect the User Plane resources towards the PoC Client by interacting with the User Plane as specified in [OMA-PoC-UP] "*Participating PoC Function procedures at PoC Session release*"; and,
 - b) SHALL generate and send a SIP 200 "OK" response to the SIP BYE request according to rules and procedures of the SIP/IP Core.
- 2. SHALL check whether there is a PoC Session using the Pre-established Session and the PoC Session is controlled by this PoC Server. If there is then the PoC Server
 - a) SHALL disconnect the User Plane resources towards the PoC Client by interacting with the User Plane as specified in [OMA-PoC-UP] "*Participating PoC Function procedures at PoC Session release*";
 - b) SHALL generate and send a SIP 200 "OK" response to the SIP BYE request according to rules and procedures of the SIP/IP Core;
 - c) SHALL check the PoC Session release policy as specified in subclause 7.2.1.16 "*PoC Session release policy*" and perform for each Participant of the PoC Session (except for the owner of the Pre-established Session) the procedures specified in subclause 7.2.2.4 "*Removal of Participant from the PoC Session*", if needed;
 - d) SHALL generate a notification of the current state of the PoC Session to the PoC Client(s), which have subscribed to the conference state event package, as specified in subclause 7.2.1.11.2 "*Generating a SIP NOTIFY request*"; and,
 - e) SHALL check the subscription termination policy as specified in subclause 7.2.1.11.3 "*Termination of subscription*" and for all PoC Clients terminate the existing subscription to the conference state event package, if needed;
- 3. SHALL check whether there is a PoC Session using the Pre-established Session, but is not controlled by this PoC Server. If here is, then the PoC Server
 - a) SHALL generate a SIP BYE request and set the Request-URI to the PoC Session Identity; and,
 - b) SHALL send the SIP BYE request towards the Controlling PoC Function according to the procedures of the SIP/IP Core;

Upon receiving a SIP 200 "OK" response from the Controlling PoC Function as a response to the SIP BYE request, the PoC Server

- 1. SHALL release User Plane resources towards the Controlling PoC Function as specified in [OMA-PoC-UP] "*Participating PoC Function procedures at PoC Session release*";
- 2. SHALL release User Plane resources towards the PoC Client as specified in [OMA-PoC-UP] "*Participating PoC Function procedures at PoC Session release*";
- 3. SHALL send a SIP 200 "OK" response to the PoC Client.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.1.11 Group Advertisement request

Upon receiving of a SIP MESSAGE request containing the PoC feature-tag '+g.poc.groupad' in the Accept-Contact header field and an identity in the Request-URI not owned by this PoC Server the PoC Server:

- 1. SHALL return a SIP 403 "Forbidden" response, if anonymity is requested. Otherwise, continue with the rest of the steps;
- 2. SHALL check the Authenticated Originator's PoC Address of the PoC User for permission to send a Group Advertisement, and if the PoC User is not allowed to send a Group Advertisement the PoC Server SHALL send a SIP 403 "Forbidden" response. Otherwise, continue with the rest of the steps;
- 3. SHALL if the Request-URI contains a SIP URI corresponding to the Exploder URI known by the PoC Server, continue as specified in subclause 7.2.1.12 "*Group Advertisement request*". Otherwise, continue with the following step; and,
- 4. SHALL forward the SIP MESSAGE request to the SIP/IP Core.

Upon receiving SIP final response the PoC Server SHALL forward the SIP final response according to rules and procedures of [RFC3261].

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.1.12 Simultaneous PoC Session control procedures

7.3.1.12.1 General

The support of Simultaneous PoC Sessions is optional for the PoC Server. The following procedures in this subclause are only applicable when the PoC Server supports Simultaneous PoC Sessions.

7.3.1.12.2 PoC Session priority request

Upon receiving a SIP INVITE or SIP UPDATE or SIP re-INVITE request containing the PoC Session priority parameter as specified in E.3.1 "*Talk Burst Control Protocol MIME registration*" in the SDP offer the PoC Server:

- 1. SHALL validate that the PoC Session priority in the SDP offer is acceptable to PoC Server and if not reject the request with a SIP 488 "Not Acceptable Here" response. Otherwise, continue with the rest of the steps;
- 2. SHALL check the PoC Session priority parameter, if included in the SDP offer;
 - a) if the PoC Session priority parameter 'poc_sess_priority' is 0 or no 'poc_sess_priority' is included and the local policy allows then the PoC Server SHALL set the PoC Session priority to secondary, perform procedures specified in [OMA-PoC-UP] "*Simultaneous PoC Session state diagram – per User*"; or,
 - b) if the PoC Session priority value 'poc_sess_priority' is 1 and the local policy allows then the PoC Server SHALL set the PoC Session priority to primary and ensure that all other PoC Sessions have the secondary priority, and perform procedures specified in [OMA-PoC-UP] "*Simultaneous PoC Session state diagram – per User*".
- 3. SHALL remove the PoC Session priority parameter in the SDP payload when the request is forwarded to Controlling PoC Function and the PoC Server support PoC Session priority;
- 4. SHALL generate a SIP 200 "OK" response containing an SDP answer that indicates the selected priority parameter according to rules and procedures of [RFC2337] and [RFC3264]; and,
- 5. SHALL send the SIP 200 "OK" response to the SIP/IP Core along the signalling path.

NOTE 1: The PoC Server performing Participating PoC Function if not recognizing a parameter will ignore it and pass it towards PoC Server performing the Controlling PoC Function. The PoC Server SHALL set the PoC Session priority by default to Secondary if the PoC Client does not indicate the priority in the request.

NOTE 2: Only one PoC Session can be set a Primary PoC Session at the given time.

7.3.1.12.3 PoC Session locking request

Upon receiving a SIP INVITE or SIP UPDATE or SIP re-INVITE request containing the PoC Session locking parameter in the SDP offer as specified in E.3.1 “*Talk Burst Control Protocol MIME registration*” the PoC Server:

- 1. SHALL validate that the PoC Session priority in the SDP offer are acceptable to the PoC Server and if not reject the request with a SIP 488 "Not Acceptable Here" response. Otherwise, continue with the rest of the steps;
- 2. SHALL check the PoC Session locking parameter if included in the SDP offer;
 - a) if the PoC Session locking parameter ‘poc_lock’ is 1 then the PoC Server SHALL set the PoC Session locked and perform procedures as specified in [OMA-PoC-UP] “*Simultaneous PoC Session state diagram – per User*”; or,
 - b) if the PoC Session locking parameter ‘poc_lock’ is 0 or no ‘poc_lock’ parameter is included then the PoC Server SHALL set the PoC Session unlocked and perform procedures as specified in [OMA-PoC-UP] “*Simultaneous PoC Session state diagram – per User*”:
- 3. SHALL remove the PoC Session locking parameter in the SDP payload when the request is forwarded to the PoC Server performing the Controlling PoC Function and the PoC Server supports PoC Session locking.
- 4. SHALL generate a SIP 200 "OK" response containing the SDP answer that indicates the selected locking parameter according to rules and procedures of [RFC2337] and [RFC3264]; and,
- 5. SHALL send the SIP 200 "OK" response to the SIP/IP Core along the signaling path.

NOTE 1: The PoC Server performing the Participating PoC Function if not recognizing a parameter will ignore it and pass it towards the PoC Server performing the Controlling PoC Function.

NOTE 2: Only one PoC Session can be set locked at the given time.

NOTE 3: Receipt of a TBCP Talk Burst Request message from the PoC Client for a PoC Session will cause the locking value to change to unlocked in any other PoC Session.

7.3.1.13 SIP Session timer expiry

On expiry of the SIP Session timer and if the PoC Server acts as a B2BUA the PoC Server:

- 1. SHALL send a SIP BYE request to the PoC Client according to rules and procedures of [RFC3261] and according to rules and procedures of the SIP/IP Core; and,
- 2. SHALL send a SIP BYE request to the PoC Server performing the Controlling PoC Function according to rules and procedures of [RFC3261] and according to rules and procedures of the SIP/IP Core.

On receipt of a SIP 200 "OK" response to the SIP BYE request from the PoC Client the PoC Server SHALL release User Plane resources as specified in [OMA-PoC-UP] “*Participating PoC Function procedures at PoC Session release*” in the direction towards the PoC Client.

On receipt of a SIP 200 "OK" response to the SIP BYE request from the PoC Server performing Controlling PoC Function the PoC Server SHALL release User Plane resources as specified in [OMA-PoC-UP] “*Participating PoC Function procedures at PoC Session release*” in the direction towards the PoC Server performing the Controlling PoC Function.

On expiry of the SIP Session timer and if the PoC Server acts as a B2BUA the PoC Server:

- 1. SHALL release User Plane resources as specified in [OMA-PoC-UP] “*Participating PoC Function procedures at PoC Session release*” in the direction towards the PoC Server performing the Controlling PoC Function; and,
- 2. SHALL release User Plane resources as specified in [OMA-PoC-UP] “*Participating PoC Function procedures at PoC Session release*” in the direction towards the PoC Client.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS Session mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.1.14 PoC service setting procedure

Upon receiving a SIP PUBLISH request the PoC Server:

- 1. SHALL check whether the Accept-Contact header includes the feature-tag '+g.poc.talkburst' and if not included the PoC Server SHALL return a SIP 403 "Forbidden" response. Otherwise, continue with the rest of the steps;
- 2. SHALL check whether the Event header includes value 'poc-settings' and if not included the PoC Server SHALL return a SIP 489 "Bad event" response. Otherwise, continue with the rest of the steps;
- 3. SHALL perform the actions to verify the Authenticated Originator's PoC Address of the PoC Client and if not authorized the PoC Server SHALL return a SIP 403 "Forbidden" response. Otherwise, continue with the rest of the steps;
- 4. SHALL process the SIP PUBLISH request according to rules and procedures of [RFC3903] and if processing of the SIP request was successful continue with next step;
- 5. SHALL store the PoC settings; and,

NOTE: The PoC settings are "Answer Mode Indication", "Incoming PoC Session Barring" and "Incoming Instant Personal Alert Barring".

- 6. SHALL send SIP 200 "OK" response to the SIP PUBLISH request.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS session mechanisms according to rules and procedures of [3GPP TS 24.229] / [3GPP2 X.PS0013.4] with the clarifications given in this subclause.

7.3.2 Requests terminated by the served PoC User

7.3.2.1 General

The PoC Server SHALL generate an initial SIP INVITE request according to rules and procedures of [RFC3261] with the clarifications in this subclause.

The PoC Server

- 1. SHALL include value 'id' in a Privacy header according to rules and procedures of [RFC3325] if anonymity is requested with the Privacy header containing the tag "id";
- 2. SHALL set the Request-URI to the PoC Address of the PoC User to be invited;
- 3. SHALL include an Accept-Contact header with the PoC feature-tag '+g.poc.talkburst' with "require" and "explicit" parameters according to rules and procedures of [RFC3841];
- 4. SHALL include User-Agent header to indicate the PoC release version as specified in subclause E.4.1 "Release version in User-agent and Server headers";
- 5. SHOULD include the Session-Expires header in the INVITE with the refresher parameter set to 'uas' according to rules and procedures of [draft-ietf-sip-session-timer];
- 6. SHALL include the option tag "timer" in the Supported header;
- 7. SHOULD include the Allow header with the supported SIP methods;
- 8. SHALL include a Contact header as follows:
 - a) a SIP URI constructed such that the PoC Server can also resolve it back to the original SIP URI provided in the SIP INVITE request by the Controlling PoC Function;
 - b) include the PoC feature-tag '+g.poc.talkburst'; and,
 - c) include the Session Type uri-parameter provided in the SIP INVITE request by the Controlling PoC Function.
- 9. SHALL include the Authenticated Originator's PoC Address received in the incoming SIP INVITE request in the outgoing SIP INVITE request.

NOTE: The use of the option tag 'precondition', as specified in [RFC3312] and the option tag '100rel', as specified in [RFC3262] is not defined in the POC-1 reference point.

When sending a SIP provisional responses other than the SIP 100 "Trying" response to the SIP INVITE request, the PoC Server:

- 1. SHALL generate the SIP provisional response according to rules and procedures of [RFC3261];
- 2. SHOULD include value 'id' in the Privacy header according to rules and procedures of [RFC3325], if the privacy is requested;
- 3. SHALL include a Server header with the PoC release version as specified in subclause E.4.1 "*Release version in User-agent and Server headers*".
- 4. SHOULD include the Allow header with the supported SIP methods if not previously sent in a provisional response for this dialog;
- 5. SHALL include a Contact header with a SIP URI identifying this PoC Server and the PoC feature-tag '+g.poc.talkburst' if not previously sent in a provisional response for this dialog; and,
- 6. SHALL include the Authenticated Originator's PoC Address received in the incoming SIP provisional response in the outgoing SIP provisional response.

When sending a SIP 200 "OK" response to the SIP INVITE request the PoC Server

- 1. SHALL generate the SIP 200 "OK" response according to rules and procedures of [RFC3261] and [RFC3262];
- 2. SHALL set the nick name in the Authenticated Originator's PoC Address the one defined for the PoC User in the PoC Server, if configured; otherwise set the nick name in the Authenticated Originator's PoC Address to the one in the incoming SIP request;
- 3. SHALL include the Authenticated Originator's PoC Address received in the incoming SIP provisional response in the outgoing SIP 200 "OK" response;
- 4. SHOULD include value 'id' in the Privacy header according to rules and procedures of [RFC3325], if the privacy is requested;
- 5. SHALL include the option tag 'timer' in the Require header;
- 6. SHALL include the Session-Expires header in the SIP 200 "OK" before sending the response towards the PoC Server performing the Controlling PoC Function with the refresher parameter set to 'uas';
- 7. SHALL start the SIP Session timer according to rules and procedures of [draft-ietf-sip-session-timer];
- 8. SHOULD include the Allow header with the supported SIP methods if not previously sent in a provisional response for this dialog;
- 9. SHALL include the Server header with the PoC release version as specified in subclause E.4.1 "*Release version in User-agent and Server headers*" if not previously sent in a provisional response for this dialog; and,
- 10. SHALL include a Contact header with a SIP URI identifying this PoC Server and the PoC feature-tag '+g.poc.talkburst'.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS Session mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.2.2 PoC Session invitation request

Upon receipt of an initial SIP INVITE request that includes a PoC Address in the Request-URI the PoC Server:

- 1. SHALL check whether the Accept-Contact header including the PoC feature-tag '+g.poc.talkburst' is included and if it is not then the PoC Server SHALL return a SIP 403 "Forbidden" response without continuing the rest of the steps;
- 2. SHALL check the presence of the "isfocus" feature parameter in the URI of the Contact header and if it is not present then the PoC Server SHALL reject the request with a SIP 403 "Forbidden" response including "isfocus not assigned" text in the Warning header without continuing the rest of the steps;
- 3. SHALL check if the the Authenticated Originator's PoC Address and Referred-By header in the initial SIP INVITE request is not "reject" in the <allow-invite> action associated to the Invited PoC User indicated by the Request-URI stored in the PoC XDMS as described in [PoC-XDM Specification]. If at least one of them is "reject" then the PoC Server SHALL send SIP 403 "Forbidden" response towards the originating PoC Client according to rules and procedures of SIP/IP Core and do not continue the rest of the steps;

- 4. SHALL check the Invited PoC User's Incoming PoC Session Barring setting associated to the PoC Address received in the Request-URI. If the Incoming PoC Session Barring is activated the PoC Server SHALL respond with a SIP 480 "Temporarily Unavailable" response and do not continue the rest of the steps;
- 5. SHALL check if the number of maximum Simultaneous PoC Sessions for the PoC Client has exceeded. If exceeded, the PoC Server SHALL respond with a SIP 486 "Busy Here" response with the warning header "too many Simultaneous PoC Sessions". Otherwise, continue with the rest of the steps; and,
- 6. SHALL check the Invited PoC User's Answer Mode associated with the PoC Address received in the Request-URI. If the Invited PoC User is using Automatic Answer Mode, but there are no access rules set against the Authenticated Originator's PoC Address and the Referred-by header in the initial SIP INVITE request, the PoC Server SHALL perform procedures as specified in subclause 7.3.2.2.3 "Manual answer". If the Invited PoC User is using Automatic Answer Mode the PoC Server SHALL perform the actions specified in subclause 7.3.2.2.2 "Automatic answer using the Pre-established Session" or 7.3.2.2.1 "Automatic answer on-demand" depending on whether the Invited PoC User has or has not, respectively, an ongoing Pre-established Session with the PoC Address. Otherwise the PoC Server SHALL perform actions specified in subclause 7.3.2.2.3 "Manual answer".

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS Session establishment mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.2.2.1 Automatic-answer using On-demand Session

If the Authenticated Originator's PoC Address in the initial SIP INVITE request is "accept" by the <allow-invite> action associated to the Invited PoC User indicated by the Request-URI and the Answer Mode setting in the PoC settings of the Invited PoC User is set to Automatic Answer and if the PoC Server does not have knowledge that the Invited PoC Client has an already established PoC Session then continue here (the matching identities and the associated action are stored in the PoC XDMS as described in [PoC XDM Specification]). Otherwise the PoC Server SHALL perform the actions specified in subclause 7.3.2.2.3 "Manual answer".

The PoC Server SHALL act as B2BUA.

NOTE: In this version the PoC Server acts as B2BUA.

The PoC Server:

- 1. SHALL generate a SIP 183 "Session Progress" response to the SIP INVITE request as specified in subclause 7.3.2.1 "General" and according to rules and procedures of [RFC3261] and [RFC3262] and act as a B2BUA;
- 2. MAY include a Require header set to '100rel' according to rules and procedures of [RFC3262];
- 3. SHALL include the P-Answer-State header set to "Unconfirmed";
- 4. SHALL send the SIP 183 "Session Progress" response towards the PoC Server performing the Controlling PoC Function according to rules and procedures of SIP/IP Core.

The PoC Server:

- 1. SHALL generate a SIP INVITE request as specified in subclause 7.3.2.1 "General";
- 2. SHALL if a P-Alerting-Mode header is included with the value set to "MAO" authorize the Authenticated Originator's PoC Address to override the Invited PoC User's Answer Mode setting and if authorized, include a P-Alerting-Mode header with the value "MAO";
- 3. SHALL if a P-Alerting-Mode header is not included or if the Authenticated Originator's PoC Address is not authorized to override the Invited PoC User's Answer Mode setting include a P-Alerting-Mode header with the value "Auto";
- 4. SHALL include an MIME SDP body as a SDP offer according to rules and procedures of [RFC3264] and [RFC2327] with the following information:
 - a) The IP address and port number at the PoC Server for the RTP Session;
 - b) The codec(s) and Media Parameters selected by the PoC Server from those contained in the SDP offer in the incoming SIP INVITE request and if transcoding is supported by the PoC Server MAY also include

the codec(s) and Media Parameters, which can be transcoded by the PoC Server to a codec contained in the SDP offer in the incoming SIP INVITE request;

c) If another IP address or port is used instead of the default IP address and port number according to rules and procedures of [RFC3550], set the IP address and port number for RTCP at the PoC Server according to rules and procedures of [RFC3605];

d) The Talk Burst Control Protocol(s) and Talk Burst Parameters selected by the PoC Server from those contained in the SDP offer in the incoming SIP INVITE request and if interworking between Talk Burst Control Protocols are supported by the PoC Server, MAY also include the ones that can be translated by the PoC Server to Talk Burst Control Protocol and Talk Burst parameters contained in the SDP offer in the incoming SIP INVITE request; and,

e) The PoC Server's port number(s) to be used for the Talk Burst Control Protocol(s).

- 5. SHALL remove the Referred-By header if anonymity is requested by the value "id" in the Privacy header; and,
- 6. SHALL send the SIP INVITE request towards the PoC Client according to rules and procedures of the SIP /IP Core.

Upon receiving a SIP 200 "OK" response to the SIP INVITE request the actions in the PoC Server depends, according to rules and procedures of [RFC3261] and [RFC3262], on if the SIP 183 "Session Progress" was sent reliable or not as follow:

- 1. SHALL, if the SIP 183 "Session Progress" was sent unreliable, send the SIP 200 "OK" response immediately (since the PoC Server does not have to wait for a SIP PRACK request); and,
- 2. SHALL, if the SIP 183 "Session Progress" was sent reliable, send the SIP 200 "OK" according to rules and procedures of [RFC3262] and [RFC3261].

Upon receiving a SIP PRACK request the PoC Server

- 1. SHALL generate a SIP 200 "OK" response to the SIP PRACK request according to rules and procedures of [RFC3262] and [RFC3261]; and,
- 2. SHALL send the SIP 200 "OK" response towards the PoC Server performing the Controlling PoC Function according to the rules and procedures of SIP/IP Core.

Whenever the PoC Server sends the SIP 200 "OK" response the PoC Server:

- 1. SHALL generate a 200 "OK" response as described in the sub-clause 7.3.2.1 "General";
- 2. SHALL include a MIME SDP body with a SDP answer according to rules and procedures of [RFC3264] and [RFC2327] with the following information:

a) The IP address and port number at the PoC Server for the RTP Session;

b) The codec(s) and Media Parameters selected by the PoC Server according to the local policy from those contained in the SDP offer in the incoming SIP INVITE request;

NOTE: The codec and Media Parameter selected according to the local policy may be a default set defined by the PoC system or operator.

c) If another IP address or port is used instead of the default IP address and port number according to rules and procedures of [RFC3550], set the IP address and port number to be used for RTCP at the PoC Server according to rules and procedures of [RFC3605];

d) The Talk Burst Control Protocol(s) and Talk Burst parameters selected by the PoC Server according to the local policy from those contained in the SDP offer in the incoming SIP INVITE request; and,

e) The PoC Server's port number(s) to be used for the Talk Burst Control Protocol(s).

- 3. SHALL send the SIP 200 "OK" response towards the PoC Server performing the Controlling PoC Function according to rules and procedures of SIP/IP Core;
- 4. SHALL interact with the User Plane as specified in [OMA-PoC-UP] "Participating PoC Function procedure at initialization"; and,

- 5. SHALL act as a B2BUA for the duration of the PoC Session according to rules and procedures of [RFC3261].

The PoC Server SHALL forward any other SIP response that does not contain SDP along the signalling path to the originating network according to rules and procedures of SIP/IP Core.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS session establishment mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.2.2.2 Automatic-answer using Pre-established Session

If the Authenticated Originator's PoC Address in the initial SIP INVITE request is "accept" by the <allow-invite> action associated to the Invited PoC User indicated by the Request-URI and the Answer Mode setting in the PoC settings of the Invited PoC User is set to Automatic Answer and if the PoC Server does not have knowledge that the Invited PoC Client has an already established PoC Session then continue here (the matching identities and the associated action are stored in the PoC XDMS as described in [PoC XDM Specification]). Otherwise the PoC Server SHALL perform the actions specified in subclause 7.3.2.2.3 "Manual answer".

The PoC Server SHALL act as B2BUA.

The PoC Server:

- 1. SHALL validate that the Media Parameters are acceptable for the PoC Server and if not reject the request with a SIP 488 "Not Acceptable Here" response. Otherwise, continue with the rest of the steps;
- 2. SHALL generate a SIP 200 "OK" response to the SIP INVITE request as described in the subclause 7.3.2.1 "General" and
 - a) Include a MIME SDP body as a SDP answer in the SIP 200 "OK" response according to rules and procedures of [RFC3264] and [RFC2327] as follows:
 - i. The IP address and port number at the PoC Server for the RTP Session;
 - ii. The codec(s) and Media Parameters negotiated during the Pre-established Session is established as specified in the subclause 7.3.1.2 "Pre-established Session" in case they are a subset of those contained in the original SDP offer or the subset of those contained in the original SDP offer selected by the PoC Server, in case transcoding is supported by the PoC Server, MAY also include the codec(s) and Media Parameters, which can be transcoded by the PoC Server to a codec contained in the SDP offer in the incoming SIP INVITE request;
 - iii. If another IP address or port is used instead of the default IP address and port number as specified by [RFC3550], set the IP address and port number for RTCP at the PoC Server according to rules and procedures of [RFC3605];
 - iv. The Talk Burst Control Protocol and Talk Burst parameters negotiated during the Pre-established Session is established as specified in the subclause 7.3.1.2 "Pre-established Session" in case they are a subset of those contained in the original SDP offer or the subset of those contained in the original SDP offer selected by the PoC Server, in case interworking between Talk Burst Control Protocols are supported by the PoC Server, MAY also include the ones that can be translated by the PoC Server to Talk Burst Control Protocol and Talk Burst parameters contained in the SDP offer in the incoming SIP INVITE request; and,
 - v. The PoC Server's port number to be used for the Talk Burst Control Protocol.
- 3. SHALL include the P-Answer-State header set to "Unconfirmed";
- 4. SHALL send the SIP 200 "OK" Response to the SIP INVITE request according to rules and procedures of SIP/IP Core; and,
- 5. SHALL interact with the User Plane as described in [OMA-PoC-UP] "Participating PoC Function procedure at initialization".

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS Session establishment mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.2.2.3 Manual-answer

If the Authenticated Originator's PoC Address in the initial SIP INVITE request is not "accept" or "reject" in the <allow-invite> action associated to the Invited PoC User indicated by the Request-URI which are stored in the PoC XDMS as described in [PoC-XDM Specification] or the Answer Mode setting in the PoC Settings of the Invited PoC User is set to Manual Answer or the PoC Server has knowledge that the Invited PoC Client has at least one already established PoC Session, then the PoC Server:

- 1. SHALL, if the P-Alerting-Mode header is included with the value "MAO", check the authorization of the Authenticated Originator's PoC Address to override the Invited PoC User's Answer Mode setting and if authorized continue as specified in subclause 7.3.2.2.1 "*Automatic answer on demand*" or as specified in subclause 7.3.2.2.2 "*Automatic answer using Pre-established Session*" depending on if a Pre-established Session exists or not. If not authorized continue with the following steps;
- 2. SHALL determine if the PoC Server stays in the media path and Talk Burst Control message path or not, as specified in [OMA-PoC-UP] "*User Plane routing*";
- 3. SHALL, if the PoC Server stays on the media path the PoC Server
 - a) SHALL either
 - i. generate a SIP INVITE request as specified in subclause 7.3.2.1 "*General*" if a Pre-established Session is not going to be used; or,
 - ii. generate a SIP re-INVITE according to the rules and procedures of [RFC3261] if a Pre-established Session is going to be used.
 - b) SHALL include a MIME SDP body as a SDP offer according to rules and procedures of [RFC3264] and [RFC2327] with the following information:
 - i. The IP address and port number at the PoC Server for the RTP Session;
 - ii. The codec(s) and Media Parameters selected by the PoC Server from those contained in the SDP offer in the incoming SIP INVITE request and if transcoding is supported by the PoC Server, MAY also include the codec(s) and Media Parameters, which can be transcoded by the PoC Server to a codec contained in the SDP offer in the incoming SIP INVITE request;
 - iii. If another IP address or port number is used instead of the default IP address and port number as specified by [RFC3550], set the IP address and port number to be used for RTCP at the PoC Server according to rules and procedures of [RFC3605];
 - iv. The Talk Burst Control Protocol(s) and Talk Burst parameters selected by the PoC Server from those contained in the SDP offer in the incoming SIP INVITE request and if interworking between Talk Burst Control Protocols are supported by the PoC Server, MAY also include the ones that can be translated by the PoC Server to Talk Burst Control Protocol and Talk Burst parameters contained in the SDP offer in the incoming SIP INVITE request; and,
 - v. The PoC Server's port number(s) for the Talk Burst Control Protocol(s).
 - c) SHALL continue, for the duration of the SIP Session, acting as a B2BUA according to rules and procedures of [RFC3261].
- 4. SHALL, if the PoC Server does not stay in the media path,
 - a) for the duration of the SIP Session and as long as the PoC Client is a Participant in the PoC Session, act as a SIP proxy according to rules and procedures of [RFC3261];
 - b) use the content of the received SIP INVITE to generate the SIP INVITE request according to rules and procedures of [RFC3261]; and,

c) include a Record-Route header containing a URI identifying its own address.

- 5. SHALL include the P-Alerting-Mode header set to "Manual";
- 6. SHALL remove the Referred-By header if anonymity is requested by the value "id" in the Privacy header; and,
- 7. SHALL send the SIP INVITE request towards the PoC Client according to rules and procedures of the SIP/IP Core.

Upon receiving a SIP 180 "Ringing" response to the SIP INVITE request the PoC Server:

- 1. SHALL store the list of supported SIP methods if received in the Allow header;
- 2. SHALL store the contact if received in the Contact header;
- 3. SHALL generate a SIP 180 "Ringing" response as specified in subclause 7.3.2.1 "General" if acting as a B2BUA; and,
- 4. SHALL generate a SIP 180 "Ringing" response according to rules and procedures of [RFC3261] if acting as a SIP proxy.
- 5. SHALL send the SIP 180 "Ringing" response towards the PoC Server performing the Controlling PoC Function according to rules and procedures of SIP/IP Core;

Upon receiving a SIP 200 "OK" response to the SIP INVITE request the PoC Server:

- 1. SHALL, if the PoC Server acts as B2BUA
 - a) SHALL store the list of supported SIP methods if received in the Allow header;
 - b) SHALL store the contact received in the Contact header;
 - c) generate a SIP 200 "OK" response as specified in the subclause 7.3.2.1 "General"; and,
 - d) include a MIME SDP body as the SDP answer according to rules and procedures of [RFC3264] and [RFC2327] with the following information:
 - i. The IP address and port number at the PoC Server for the RTP Session;
 - ii. The codec and Media Parameters selected by the PoC Server from those contained in the SDP answer from the Invited PoC Client(s) and if transcoding is supported by the PoC Server, MAY also include the codec(s) and Media Parameters contained in the SDP offer in the incoming SIP INVITE request, which can be transcoded by the PoC Server to a codec contained in the SDP answer in the received SIP 200 "OK" response;
 - iii. if another IP address or port number is used instead of the default IP address and port number as specified in [RFC3550], set the IP address and port number to be used for RTCP at the PoC Server according to rules and procedures of [RFC3605];
 - iv. The Talk Burst Control Protocol(s) and Talk Burst parameters contained in the SDP answer from the Invited PoC Client(s) and if interworking between Talk Burst Control Protocols are supported by the PoC Server, MAY also include the ones contained in the SDP offer in the incoming SIP INVITE request, that can be translated by the PoC Server to Talk Burst Control Protocol and Talk Burst parameters contained in the SDP answer in the received SIP 200 "OK" response; and,
 - v. The PoC Server's port number(s) to be used for the Talk Burst Control Protocol(s).
 - e) interact with the User Plane as specified in [OMA-PoC-UP] "*Participating PoC Function procedure at initialization*".
- 2. SHALL, if the PoC Server acts as a SIP proxy
 - a) generate a SIP 200 "OK" response according to rules and procedures of [RFC3261]; and,
 - b) include the same MIME SDP body as the SDP answer received in the SIP 200 "OK" response.
- 3. SHALL send the SIP 200 "OK" response to the PoC Server performing the Controlling PoC Function according to rules and procedures of SIP/IP Core.

The PoC Server SHALL forward any other SIP response that does not contain SDP along the signalling path to the originating network according to rules and procedures of SIP/IP Core.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS session establishment mechanisms according to rules and procedures of [3GPP TS 24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.2.3 PoC Session modifications

Upon receiving a SIP UPDATE request or a SIP re-INVITE request and when the PoC Server acts as a B2BUA during an Active PoC Session the PoC Server:

- 1. SHALL generate a SIP UPDATE request according to rules and procedures of [RFC3311] or a SIP re-INVITE request according to rules and procedures of [RFC3261]. A SIP UPDATE request MAY be used only if the PoC Server has indicated support for the SIP UPDATE method;
- 2. SHALL validate that the Media Parameters are acceptable to the PoC Client and if not reject the request with a SIP 488 "Not Acceptable Here" response. Otherwise continue with the rest of the steps;
- 3. SHALL include a MIME SDP body of a SIP UPDATE request or a SIP re-INVITE request with a SDP offer according to rules and procedures of [RFC3264] and [RFC2327] with the new Media Parameters; and,
- 4. SHALL send the SIP request towards the PoC Client within the existing SIP dialog according to rules and procedures of the SIP / IP Core.

Upon receiving a SIP UPDATE request or a SIP re-INVITE request during an Active PoC Session and when the PoC Server acts as a SIP proxy the PoC Server SHALL forward the SIP request according to rules and procedures of [RFC3261]. A SIP UPDATE request MAY be used only if the PoC Client has indicated support for the SIP UPDATE method.

Upon receiving of a SIP 200 "OK" response and when the PoC Server acts as a B2BUA the PoC Server:

- 1. SHALL generate a SIP 200 "OK" to the SIP UPDATE request or the SIP re-INVITE request according to rules and procedures of the [RFC3261];
- 2. SHALL include a MIME SDP body in the SIP 200 "OK" response as the SDP answer according to rules and procedures of [RFC3264] and [RFC2327] with the new Media Parameters;
- 3. SHALL send a SIP 200 "OK" response towards the PoC Server performing the Controlling PoC Function according to rules and procedures of SIP/IP Core; and,
- 4. SHALL if the PoC Server is in the media path, activate the Media Parameters received in the MIME SDP body as SDP answer as specified in [OMA-PoC-UP] "*User Plane adaptation*".

Upon receiving of a SIP 200 "OK" response and when the PoC Server acts as a SIP proxy the PoC Server SHALL forward the SIP 200 "OK" response according to rules and procedures of [RFC3261].

Upon receiving of a SIP final response (with the exception of the SIP 200 "OK" response) to the SIP re-INVITE request or the SIP UPDATE request the PoC Server SHALL forward the SIP final response according to rules and procedures of [RFC3261].

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS Session mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.2.4 SIP NOTIFY request

If the PoC Server performing the Participating PoC Function receives an incoming SIP NOTIFY request that is part of the same dialog as the previously sent SIP SUBSCRIBE request the PoC Server:

- 1. SHALL send the SIP NOTIFY request towards the PoC Client along the signalling path; and,
- 2. SHALL forward the response along the signalling path to the originating network when the Invited PoC Client responds and a response is received from the invited PoC Address.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms and procedures according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.2.5 SIP CANCEL request

Upon receiving a SIP CANCEL request from the PoC Server performing the Controlling PoC Function, a PoC Server acting as a B2BUA:

- 1. SHALL act as UAS according to rules and procedures of [RFC3261]; and,
- 2. SHALL cancel the SIP INVITE request towards the PoC Client acting as UAC according to rules and procedures of [RFC 3261].

When acting as a SIP proxy rules and procedures as specified in [RFC3261] SHALL be applied.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.2.6 SIP BYE request

7.3.2.6.1 SIP BYE request from the Controlling PoC Function – On-demand Session case

Upon receiving a SIP BYE request from the PoC Server performing the Controlling PoC Function a PoC Server acting as a B2BUA:

- 1. SHALL generate a SIP 200 "OK" response and send it towards the PoC Server performing the Controlling PoC Function according to rules and procedures of the SIP/IP Core;
- 2. SHALL interact with the User Plane as specified in [OMA PoC UP] "*Participating PoC Function procedures at PoC Session release*";
- 3. SHALL release User Plane resource associated with the SIP Session with the PoC Server performing the Controlling PoC Function as specified in [OMA-PoC-UP] "*Participating PoC Function procedures at PoC Session release*"; and,
- 4. SHALL send a SIP BYE request towards the PoC Client according to rules and procedures of the SIP/IP Core.

Upon receiving a SIP 200 "OK" response to the SIP BYE request the PoC Server SHALL release User Plane resources associated with the SIP Session with the PoC Client as specified in [OMA-PoC-UP] "*Participating PoC Function procedures at PoC Session release*". When acting as a SIP proxy rules and procedures as specified in [RFC3261] SHALL be applied.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.2.6.2 SIP BYE request from the Controlling PoC Function – Pre-established Session case

NOTE: The procedure in this subclause applies when the PoC Session is established by sending a TBCP message to the PoC Client as specified in [OMA-POC-UP] "*Participating PoC function procedures at PoC Session initialization*".

Upon receiving a SIP BYE request from the Controlling PoC Function the PoC Server:

- 1. SHALL disconnect the User Plane resources towards the PoC Server performing Controlling PoC Function by interacting with the User Plane as specified in [OMA-PoC-UP] "*Participating PoC Function procedures at PoC Session release*";
- 2. SHALL send a SIP 200 "OK" response to the Controlling PoC Function;
- 3. SHALL disconnect the User Plane resources towards the PoC Client from the User Plane resources towards the Controlling PoC Function by interacting with the User Plane as specified in [OMA-PoC-UP] "*Participating PoC Function procedures at PoC Session release*"; and,
- 4. SHALL maintain the Pre-established Session towards the PoC Client.

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.2.6.3 Leaving a PoC Session when using Pre-established Session

NOTE: The procedure in this subclause applies when the PoC Session is established within a Pre-established Session as specified in subclause 6.1.3.2.2 "*PoC Client initiates an Ad-hoc PoC Group Session and 1-1 PoC Session*"; or when the PoC Client releases the proper Pre-established Session as specified in subclause 6.1.3.2.1 "*PoC Client initiates a Pre-established Session*".

The PoC Server:

- 1. SHALL maintain the Pre-established Session towards the PoC Client; and,
- 2. SHALL disconnect the User Plane resources towards the PoC Client from the User Plane resources towards the Controlling PoC Function by interacting with the User Plane as specified in [OMA-PoC-UP] "*Participating PoC Function procedures at PoC Session release*";

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.3.2.7 Group Advertisement request

Upon receiving of a SIP MESSAGE request containing the PoC feature-tag '+g.poc.groupad' in the Accept-Contact header and a PoC Address in the Request -URI served by the PoC Server performing the Participating PoC Function the PoC Server:

- 1. SHALL check if the Authenticated Originator's PoC Address in the initial SIP MESSAGE request is not "reject" in the <allow-invite> action associated to the Invited PoC User indicated by the Request-URI stored in the PoC XDMS as described in [PoC-XDM Specification]. If it is "reject" the PoC Server SHALL respond with a SIP 403 "Forbidden" response to the originating network. Otherwise, continue with the rest of the steps;
- 2. SHALL forward the SIP MESSAGE request towards the PoC Client according to rules and procedures of the SIP/IP Core; and,
- 3. SHALL forward the SIP response along the signalling path to the originating network when the Invited PoC Client responds and a SIP response is received from the invited PoC Address.

Upon receiving SIP final response the PoC Server SHALL forward the SIP final response according to rules and procedures of [RFC3261].

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.4 Handling of requests unrelated to PoC Sessions

7.4.1 Instant Personal Alert

7.4.1.1 Instant Personal Alert procedure at Originating PoC Server

Upon receipt of a SIP MESSAGE request containing the PoC feature-tag '+g.poc.talkburst' in the Accept-Contact header, the PoC Server:

- 1. SHALL return a SIP 403 "Forbidden" response, if anonymity is requested. Otherwise, continue with the rest of the steps;
- 2. SHALL check whether the Authenticated Originator's PoC Address is of a PoC User that is allowed to send an Instant Personal Alert and if it is not the PoC Server serving the originating PoC Client SHALL respond with a SIP 403 "Forbidden" response to the PoC Client. Otherwise, continue with the rest of the steps; and,
- 3. SHALL forward the SIP MESSAGE request to the SIP/IP Core.

Upon receiving a SIP final response PoC Server SHALL forward the SIP final response along the signalling path towards the originating PoC Client according to rules and procedures of [RFC3261].

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Client SHALL use 3GPP/3GPP2 IMS mechanisms, according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.4.1.2 Instant Personal Alert procedure at terminating PoC Server

Upon receipt of a SIP MESSAGE request containing the PoC feature-tag '+g.poc.talkburst' in the Accept-Contact header and the request includes a PoC Address in the Request-URI that is served by the PoC Server then, the PoC Server:

- 1. SHALL check if the Authenticated Originator's PoC Address in the initial SIP MESSAGE request is not "reject" in the <allow-invite> action associated to the Invited PoC User indicated by the Request-URI stored in the PoC XDMS as described in [PoC-XDM Specification]. If it is "reject" the PoC Server SHALL respond with a SIP 403 "Forbidden" response to the originating network. Otherwise, continue with the rest of the steps;
- 2. SHALL check the terminating PoC User's Incoming Instant Personal Alert Barring setting associated to the PoC Address received in the Request-URI. If the Incoming Instant Personal Alert Barring is activated the PoC Server performing the Participating PoC Function SHALL respond with a SIP 480 "Temporarily Unavailable" response to the originating network. The response is sent along the signalling path. Otherwise, continue with the rest of the steps; and,
- 3. SHALL forward the SIP MESSAGE request towards the PoC Client of the terminating PoC User according to rules and procedures of the SIP/IP Core.

Upon receiving a SIP final response PoC Server SHALL forward the SIP final response along the signalling path towards the originating PoC Client according to rules and procedures of [RFC3261].

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use 3GPP/3GPP2 IMS mechanisms, according to rules and procedures of [TS24.229] / [3GPP2 X.S0013.4] with the clarifications given in this subclause.

7.5 Error Handling

7.5.1 Conference-factory URI does not exist

Upon receipt of a request that includes as the Request-URI a Conference-factory-URI that is not allocated in the PoC Server, the PoC Server SHALL return a SIP 404 "Not found" response.

7.5.2 Conference URI does not exist

Upon receipt of a SIP INVITE request that includes as the Request-URI a Conference URI that is not allocated in the PoC Server performing the Controlling PoC Function, the PoC Server SHALL return a SIP 404 "Not found" response.

Appendix A. Static Conformance Requirements (SCR) (Normative)

Annex F defines the MANDATORY (M) and OPTIONAL (O) PoC Control Plane (CP) functionality static conformance requirements (SCR). Mandatory Group Management Service Enabler (GMSE) and optional Presence Service Enabler (PRSE) functions, as required for the PoC enabler, are also referenced in these tables.

The SCRs defined in the following tables include SCR for:

- PoC Client;
- PoC Server performing the Participating PoC Function; and,
- PoC Server performing the Controlling PoC Function.

Each SCR table identifies a list of supported features as:

Item: Identifier for a feature.

Function: Short description of the feature.

Reference: Subclause(s) of this specification with more details on the feature.

Status: Whether support for the feature is mandatory or optional. MUST use “M” for mandatory support and “O” for optional support in this column.

Requirement: This column identifies other features required by this feature. If no other features are required, this column is left empty.

This section describes the dependency grammar notation to be used in the Requirement column of the SCR and SCR tables using ABNF [RFC2234].

TerminalExpression = ScrReference / NOT TerminalExpression / TerminalExpression LogicalOperator
TerminalExpression / (“ TerminalExpression “)

ScrReference = ScrItem / ScrGroup

ScrItem = SpecScrName “-“ GroupType “-“ DeviceType “-“ NumericId / SpecScrName “-“ DeviceType “-“
NumericId

ScrGroup = SpecScrName “:” FeatureType / SpecScrName “-“ GroupType “-“ DeviceType “-“ FeatureType

SpecScrName = 1*Character;

GroupType = 1*Character;

DeviceType = “C” / “S”; C – client, S – server

NumericId = Number Number Number

LogicalOperator = “AND” / “OR”; AND has higher precedence than OR and OR is inclusive

FeatureType = “MCF” / “OCF” / “MSF” / “OSF”; See section A.1.6 in [IOPPROC]

Character = %x41-5A ; A-Z

Number = %x30-39 ; 0-9

A.1 PoC Client functions

A.1.1 High level external dependencies

Item	Function	Reference	Status	Requirement
PoCCPSpec-CHL-C-001	ERELED	[OMA POC ERELD]	M	ERELED:MCF

A.1.2 PoC Client originating procedures

Item	Function	Reference	Status	Requirement
PoCCPSpec-COP-C-001	General registration to SIP/IP Core	6.1.1.1	M	PoCCPSpec-COP-C-002 OR PoCCPSpec-COP-C-003
PoCCPSpec-COP-C-002	Registration per 3GPP IMS	6.1.1.2	O	
PoCCPSpec-COP-C-003	Registration per 3GPP2 MMD	6.1.1.2	O	
PoCCPSpec-COP-C-004	Deregister with options	6.1.1.3	M	

A.1.3 PoC service settings procedure

Item	Function	Reference	Status	Requirement
PoCCPSpec-CSP-C-001	PoC service Setting Procedure – initiation of SIP PUBLISH request	6.1.2	M	
PoCCPSpec-CSP-C-002	Indication of setting results after receiving SIP 200OK response	6.1.2	O	

A.1.4 PoC Session initiation

Item	Function	Reference	Status	Requirement
PoCCPSpec-CSI-C-001	General Initiation – SIP INVITE request	6.1.3.1	M	
PoCCPSpec-CSI-C-002	SIP Session Timer	6.1.3.1	M	
PoCCPSpec-CSI-C-003	Pre-established Session establishment	6.1.3.2	O	PoCCPSpec-CSI-C-004 AND PoCCPSpec-CSI-C-005 AND PoCCPSpec-CSI-C-006
PoCCPSpec-CSI-C-004	PoC Client Pre-established Session initiation	6.1.3.2.1	O	PoCCPSpec-CSI-C-003
PoCCPSpec-CSI-C-005	PoC Client Pre-established Session initiation with example for Unconfirmed Indication for originating flow	6.1.3.2.1	O	PoCCPSpec-CSI-C-004
PoCCPSpec-CSI-C-006	PoC Client Ad-hoc PoC	6.1.3.2.2	O	PoCCPSpec-CSI-C-003

	Group Session and 1-1 PoC Session initiation (receiving SIP REFER request)			AND PoCCPSpec-CSI-C-004
PoCCPSpec-CSI-C-007	Display of indication to PoC User of acceptance/rejection of PoC Session	6.1.3.2.2 6.1.3.2.3	O	PoCCPSpec-CSI-C-003 AND PoCCPSpec-CSI-C-004
PoCCPSpec-CSI-C-008	PoC Client Pre-arranged or Chat PoC Group Session (receiving SIP REFER request)	6.1.3.2.3	O	PoCCPSpec-CSI-C-003
PoCCPSpec-CSI-C-009	PoC Client releases a Pre-established Session	6.1.3.2.4	O	PoCCPSpec-CSI-C-003
PoCCPSpec-CSI-C-010	Establishment of an On-Demand Session	6.1.3.3	M	
PoCCPSpec-CSI-C-011	Ad-hoc PoC Group Session and 1-1 PoC Session setup (receiving request)	6.1.3.3.1	M	
PoCCPSpec-CSI-C-012	Ad-hoc PoC Group Session and 1-1 PoC Session setup (receiving SIP 180 Ringing response)	6.1.3.3.1	O	
PoCCPSpec-CSI-C-013	Ad-hoc PoC Group Session and 1-1 PoC Session setup (receiving SIP 200OK response)	6.1.3.3.1	M	
PoCCPSpec-CSI-C-014	Ad-hoc PoC Group Session and 1-1 PoC Session setup for Unconfirmed Indication	6.1.3.3.1	O	
PoCCPSpec-CSI-C-015	Ad-hoc PoC Group Session and 1-1 PoC Session setup for Confirmed Indication and Manual Answer Mode	6.1.3.3.1	O	
PoCCPSpec-CSI-C-016	Pre-arranged PoC Group Session setup	6.1.3.3.2	M	
PoCCPSpec-CSI-C-017	Chat PoC Group Session setup	6.1.3.3.2	M	

A.1.5 PoC Session Modification

Item	Function	Reference	Status	Requirement
PoCCPSpec-CSM-C-001	General Procedures	6.1.4.1	M	
PoCCPSpec-CSM-C-002	General Procedures – SIP INVITE request	6.1.4.1	M	
PoCCPSpec-CSM-C-003	General Procedures – SIP UPDATE request	6.1.4.1	O	
PoCCPSpec-CSM-C-004	PoC Client placing media on hold	6.1.4.2	O	PoCCPSpec-CSM-C-005
PoCCPSpec-CSM-C-005	PoC Client placing media off hold	6.1.4.3	O	PoCCPSpec-CSM-C-004
PoCCPSpec-CSM-C-006	User Plane adaptation: Modifying media	6.1.4.4	O	

	capabilities during an ongoing PoC Session			
PoCCPSpec-CSM-C-007	SIP Session refresh	6.1.4.5	M	
PoCCPSpec-CSM-C-008	SIP Session Expiration	6.1.4.5	O	

A.1.6 PoC Client re-joining a PoC Session

Item	Function	Reference	Status	Requirement
PoCCPSpec-CRS-C-001	On-demand Session	6.1.5.1	M	
PoCCPSpec-CRS-C-002	Pre-established Session	6.1.5.2	O	PoCCPSpec-CSI-C-003

A.1.7 PoC Client leaving a PoC Session

Item	Function	Reference	Status	Requirement
PoCCPSpec-CLS-C-001	Leaving a PoC Session - on-demand case: Release the floor	6.1.6.1	O	
PoCCPSpec-CLS-C-002	Leaving a PoC Session - on-demand case: SIP BYE	6.1.6.1	M	
PoCCPSpec-CLS-C-003	Leaving a PoC Session – pre-established case: Generate SIP REFER	6.1.6.2	O	PoCCPSpec-CSI-C-003
PoCCPSpec-CLS-C-004	Leaving a PoC Session – pre-established case: receive SIP NOTIFY	6.1.6.2	O	PoCCPSpec-CSI-C-003
PoCCPSpec-CLS-C-005	Leaving a PoC Session – display information contained in SIP NOTIFY	6.1.6.2	O	PoCCPSpec-CLS-C-004

A.1.8 PoC Session unrelated operations for PoC Client Initiating Procedures

Item	Function	Reference	Status	Requirement
PoCCPSpec-CUO-C-001	PoC Client Adding a User to a PoC Session (SIP REFER)	6.1.7	M	
PoCCPSpec-CUO-C-002	PoC Client Sending an Instant Personal Alert (sending SIP MESSAGE)	6.1.8	O	
PoCCPSpec-CUO-C-003	PoC Client Sending a Group Advertisement (sending SIP MESSAGE)	6.1.9	O	
PoCCPSpec-CUO-C-004	PoC Client Subscription to the Conference State Event Package (sending SIP SUBSCRIBE request) for Pre-established Session	6.1.10	O	PoCCPSpec-CSI-C-006 OR PoCCPSpec-CSI-C-008
PoCCPSpec-CUO-C-005	PoC Client Subscription to the Conference State Event Package (sending SIP SUBSCRIBE request) for On-Demand Session	6.1.10	O	

PoCCPSpec-CUO-C-006	Canceling a PoC Session initiation - on-demand case	6.1.11.1	M	
PoCCPSpec-CUO-C-007	Simultaneous Session Control Procedures	6.1.12	O	
PoCCPSpec-CUO-C-008	Simultaneous Session control: PoC Client Setting Session Priority indicating with SDP attribute	6.1.12.1	O	
PoCCPSpec-CUO-C-009	Simultaneous Session control: PoC Client handling for PoC Session locking in a particular PoC Session	6.1.12.2	O	

A.1.9 PoC Client terminating procedures

Item	Function	Reference	Status	Requirement
PoCCPSpec-CTP-C-001	PoC Client invited to a PoC Session: General INVITE procedure	6.2.1.1	M	
PoCCPSpec-CTP-C-002	PoC Client invited to a PoC Session: Automatic Answer Mode OR Manual Answer Mode	6.2.1.2 6.2.1.3	M	PoCCPSpec-CTP-C-003 OR PoCCPSpec-CTP-C-004
PoCCPSpec-CTP-C-003	PoC Client invited to a PoC Session: Automatic Answer Mode set	6.2.1.2	O	
PoCCPSpec-CTP-C-004	PoC Client invited to a PoC Session: Manual answer	6.2.1.3	O	
PoCCPSpec-CTP-C-005	PoC Client invited to a PoC Session: Manual Answer Override	6.2.1.4	O	PoCCPSpec-CTP-C-004
PoCCPSpec-CTP-C-006	PoC Client receiving a PoC Session Modification Request (send 200OK after receiving UPDATE or re-INVITE)	6.2.2	O	PoCCPSpec-CSM-C-003
PoCCPSpec-CTP-C-007	PoC Client receiving a PoC Session Release Request: On-demand case	6.2.3.1	M	
PoCCPSpec-CTP-C-008	PoC Client receiving a PoC Session Release Request: Pre-established case	6.2.3.2	O	PoCCPSpec-CSI-C-003
PoCCPSpec-CTP-C-009	PoC Client receiving an Instant Personal Alert: receiving SIP MESSAGE	6.2.4	M	
PoCCPSpec-CTP-C-010	PoC Client receiving an Instant Personal Alert: initiating 1-1 PoC Session	6.2.4	O	PoCCPSpec-CSI-C-005 OR PoCCPSpec-CSI-C-010
PoCCPSpec-CTP-C-011	PoC Client Receiving a Group Advertisement	6.2.5	O	
PoCCPSpec-CTP-C-012	PoC Session Cancel request: On-demand case	6.2.6.1	M	

	(receiving SIP CANCEL)			
PoCCPSpec-CTP-C-013	Simultaneous Session Control Procedures	6.2.7	O	
PoCCPSpec-CTP-C-014	PoC Client setting the PoC Session priority in SDP payload	6.2.7	O	PoCCPSpec-CUO-C-008
PoCCPSpec-CTP-C-015	PoC Client handling for PoC Session locking in a particular PoC Session	6.2.7	O	PoCCPSpec-CUO-C-009

A.2 PoC Server functions

A.2.1 General

Void.

A.2.2 High level dependencies

Item	Function	Reference	Status	Requirement
PoCCPSpec-CHL-S-001	ERELED	[OMA POC ERELD]	M	ERELED:MSF

A.2.3 Common Basic Functions

Item	Function	Reference	Status	Requirement
PoCCPSpec-CBF-S-001	PoC Session Establishment		M	PoCCPSpec-CBF-S-002 OR PoCCPSpec-CBF-S-005
PoCCPSpec-CBF-S-002	PoC Session Establishment On Demand		M	PoCCPSpec-CBF-S-003 OR PoCCPSpec-CBF-S-004
PoCCPSpec-CBF-S-003	PoC Session Establishment On Demand – Confirmed Indication, Manual Answer Mode		M	PoCCPSpec-PTR-S-007 AND PoCCPSpec-CTR-S-004 AND PoCCPSpec-CTR-S-007 AND PoCCPSpec-CIR- S-003
PoCCPSpec-CBF-S-004	PoC Session Establishment On Demand – Automatic Answer Mode, Confirmed Indication		M	PoCCPSpec-PTR-S-003 AND PoCCPSpec-CTR-S-005 AND PoCCPSpec-CTR-S-008 AND PoCCPSpec-CIR- S-004
PoCCPSpec-CBF-S-005	PoC Session Establishment On Demand, Automatic Answer Mode, Unconfirmed Indication (support for media buffering)		O	PoCCPSpec-PTR-S-003 AND PoCCPSpec-CTR-S-005 AND PoCCPSpec-CTR-S-008 AND

				PoCCPSpec-CIR- S-004
PoCCPSpec-CBF-S-006	PoC Session Establishment Pre-established		O	PoCCPSpec-CBF-S-007 OR PoCCPSpec-CBF-S-008
PoCCPSpec-CBF-S-007	PoC Session Establishment Pre-established – Confirmed Indication, Manual Answer Mode		O	PoCCPSpec-PTR-S-006
PoCCPSpec-CBF-S-008	PoC Session Establishment Pre-established – Unconfirmed Indication, Automatic Answer Mode		O	PoCCPSpec-PTR-S-006
PoCCPSpec-CBF-S-009	Instant Personal Alert		M	PoCCPSpec-CUO-S-001 AND PoCCPSpec-CUO-S-002
PoCCPSpec-CBF-S-010	Group Advertisement		M	PoCCPSpec-CTR-S-026 AND PoCCPSpec-PTR-S-013

A.2.4 Role establishment

Item	Function	Reference	Status	Requirement
PoCCPSpec-CRE-S-001	Determination of PoC Server role as a Participating and/or Controlling PoC Function	7.1	M	
PoCCPSpec-CRE-S-002	Reception of initial SIP INVITE request – mobile initiating trigger detection point	7.1.1	M	PoCCPSpec-CRE-S-003 OR PoCCPSpec-CRE-S-004
PoCCPSpec-CRE-S-003	Reception of initial SIP INVITE request – Participating PoC Function for Pre-established Case	7.1.1 7.3.1.2	O	
PoCCPSpec-CRE-S-004	Reception of initial SIP INVITE request – Participating PoC Function for On-demand Session Case	7.1.1 7.3.1.4	M	
PoCCPSpec-CRE-S-005	Reception of initial SIP INVITE request – mobile terminating trigger detection point	7.1.1	M	PoCCPSpec-CRE-S-006 OR PoCCPSpec-CRE-S-007 OR PoCCPSpec-CRE-S-008
PoCCPSpec-CRE-S-006	Reception of initial SIP INVITE request – Controlling PoC Function	7.1.1 7.2.1.3 7.2.1.4 7.2.1.5	M	
PoCCPSpec-CRE-S-007	Reception of initial SIP INVITE request – Participating PoC Function	7.1.1 7.3.2.2	M	
PoCCPSpec-CRE-S-008	Reception of initial SIP INVITE request – SIP URI	7.1.1	M	

	unknown, send SIP 404			
PoCCPSpec-CRE-S-009	Reception of SIP REFER request	7.1.2	M	
PoCCPSpec-CRE-S-010	Reception of SIP MESSAGE request with PoC feature-tag '+g.poc.talkburst' (Instant Personal Alert)	7.1.3 7.4.1.1 7.4.1.2	M	
PoCCPSpec-CRE-S-011	Reception of SIP MESSAGE request with PoC feature-tag '+g.poc.groupad' (Group Advertisement)	7.1.3 7.3.1.11 7.2.1.12 7.3.2.7	M	
PoCCPSpec-CRE-S-012	Reception of SIP SUBSCRIBE request	7.1.4 7.3.1.7	M	

A.2.5 PoC Session Policy

Item	Function	Reference	Status	Requirement
PoCCPSpec-CPO-S-001	PoC Session joining policy	7.2.1.6	M	
PoCCPSpec-CPO-S-002	PoC Session initiation policy	7.2.1.14	M	
PoCCPSpec-CPO-S-003	PoC Session adding policy	7.2.1.15	M	
PoCCPSpec-CPO-S-004	PoC Session release policy	7.2.1.16	M	

A.2.6 PoC Session unrelated operations

Item	Function	Reference	Status	Requirement
PoCCPSpec-CUO-S-001	Instant Personal Alert procedure at originating PoC Server	7.4.1.1	M	
PoCCPSpec-CUO-S-002	Instant Personal Alert procedure at terminating PoC Server	7.4.1.2	M	

A.2.7 Error Handling

Item	Function	Reference	Status	Requirement
PoCCPSpec-CEH-S-001	Handling of a request URI of a Conference-Factory-URI that is not allocated on server	7.5.1	M	
PoCCPSpec-CEH-S-002	Handling of a SIP INVITE with a request URI of a Conference URI that is not allocated on server performing the Controlling	7.5.2	M	

	PoC Function			
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A.2.8 PoC Server performing the Participating PoC Function

A.2.8.1 Processing requests initiated by Served User

Item	Function	Reference	Status	Requirement
PoCCPSpec-PIR-S-001	General process for SIP INVITE requests and SIP 200 OK responses	7.3.1.1	M	
PoCCPSpec-PIR-S-002	Respond to Pre-established Session initiation requests	7.3.1.2	M	PoCCPSpec-PIR-S-003 OR PoCCPSpec-PIR-S-004
PoCCPSpec-PIR-S-003	Respond to Pre-established Session requests with SIP "403" Forbidden response if feature is not supported	7.3.1.2	O	
PoCCPSpec-PIR-S-004	Respond to Pre-established Session requests for case where feature is supported	7.3.1.2	O	PoCCPSpec-PIR-S-005 AND PoCCPSpec-PIR-S-007 AND PoCCPSpec-PIR-S-012 AND PoCCPSpec-PIR-S-014 AND PoCCPSpec-PIR-S-015 AND PoCCPSpec-PTR-S-008 AND PoCCPSpec-PTR-S-013
PoCCPSpec-PIR-S-005	Pre-established Session modification request to change media capabilities while not in a PoC Session	7.3.1.3	O	PoCCPSpec-PIR-S-004
PoCCPSpec-PIR-S-006	PoC Session Initiation using On-demand Session	7.3.1.4	M	
PoCCPSpec-PIR-S-007	PoC Session Initiation Using Pre-established Session	7.3.1.5	O	PoCCPSpec-PIR-S-004
PoCCPSpec-PIR-S-008	PoC Session Modification request during an ongoing PoC Session	7.3.1.6	M	PoCCPSpec-PIR-S-009 OR PoCCPSpec-PIR-S-010
PoCCPSpec-PIR-S-009	PoC Session Modification request during an ongoing Poc Session if feature is not supported	7.3.1.6	O	
PoCCPSpec-PIR-S-010	PoC Session Modification request during an ongoing Poc Session if feature is supported	7.3.1.6	O	
PoCCPSpec-PIR-S-011	SIP SUBSCRIBE requests	7.3.1.7	M	

	containing URIs not owned by this PoC Server			
PoCCPSpec-PIR-S-012	SIP REFER request containing URIs not owned by this PoC Server	7.3.1.8	M	PoCCPSpec-PIR-S-013 OR PoCCPSpec-PIR-S-014
PoCCPSpec-PIR-S-013	Respond to SIP REFER requests with a 4xx response when Pre-established Session is not supported	7.3.1.8	O	
PoCCPSpec-PIR-S-014	Responding to SIP REFER requests when Pre-established Session is supported	7.3.1.8	O	PoCCPSpec-PIR-S-004
PoCCPSpec-PIR-S-015	SIP CANCEL Request	7.3.1.9	M	
PoCCPSpec-PIR-S-016	SIP BYE request (On-demand Session)	7.3.1.10.1	M	
PoCCPSpec-PIR-S-017	SIP REFER with method set to BYE (Pre-established Session)	7.3.1.10.2	O	PoCCPSpec-PIR-S-004
PoCCPSpec-PIR-S-018	SIP REFER BYE request (Pre-established Session)	7.3.1.10.3	O	PoCCPSpec-PIR-S-004
PoCCPSpec-PIR-S-019	Group Advertisement request	7.3.1.11	O	
PoCCPSpec-PIR-S-020	Simultaneous Sessions Control Procedures	7.3.1.12.1	O	
PoCCPSpec-PIR-S-021	Session Priority Requests	7.3.1.12.2	O	PoCCPSpec-PIR-S-020
PoCCPSpec-PIR-S-022	Processing Session locking requests	7.3.1.12.3	O	PoCCPSpec-PIR-S-020
PoCCPSpec-PIR-S-023	Processing of SIP Session timer expiry	7.3.1.13	M	
PoCCPSpec-PIR-S-024	PoC service Setting Procedure (processing SIP PUBLISH requests)	7.3.1.14	M	

A.2.8.2 Processing requests terminated by Served User

Item	Function	Reference	Status	Requirement
PoCCPSpec-PTR-S-001	Receiving initiating request (Generate SIP INVITE)	7.3.2.1	M	
PoCCPSpec-PTR-S-002	PoC Session Invitation request	7.3.2.2	M	
PoCCPSpec-PTR-S-003	Automatic answer (On-demand Session)	7.3.2.2.1	O	PoCCPSpec-PTR-S-004
PoCCPSpec-PTR-S-004	Automatic answer (Pre-established Session)	7.3.2.2.2	O	PoCCPSpec-PTR-S-006
PoCCPSpec-PTR-S-005	Automatic answer (Pre-established Session)	7.3.2.2.2	O	
PoCCPSpec-PTR-S-006	Manual answer	7.3.2.2.3	M	
PoCCPSpec-PTR-S-007	PoC Session Modification	7.3.2.3	M	

PoCCPSpec-PTR-S-008	SIP NOTIFY request	7.3.2.4	M	
PoCCPSpec-PTR-S-009	SIP CANCEL request	7.3.2.5	M	
PoCCPSpec-PTR-S-010	SIP BYE request (On-demand Session)	7.3.2.6.1	M	
PoCCPSpec-PTR-S-011	SIP BYE Request (Pre-established Session)	7.3.2.6.2	O	PoCCPSpec-PIR-S-004
PoCCPSpec-PTR-S-012	Group Advertisement Requests (receive SIP MESSAGE)	7.3.2.7	O	

A.2.9 PoC Server performing the Controlling PoC Function

A.2.9.1 Requests terminated by the Controlling PoC Function

Item	Function	Reference	Status	Requirement
PoCCPSpec-CTR-S-001	General - Server behavior on receipt of SIP INVITE	7.2.1.1	M	
PoCCPSpec-CTR-S-002	General - Inclusion of supported SIP methods in the 200 OK response	7.2.1.1	O	
PoCCPSpec-CTR-S-003	Ad-hoc PoC Group and 1-1 PoC Session setup request	7.2.1.2	M	PoCCPSpec-CTR-S-004 OR PoCCPSpec-CTR-S-005
PoCCPSpec-CTR-S-004	Ad-hoc PoC Group and 1-1 PoC Session setup request with Confirmed Indication	7.2.1.2	M	
PoCCPSpec-CTR-S-005	Ad-hoc PoC Group and 1-1 PoC Session setup request with Unconfirmed Indication	7.2.1.2	O	
PoCCPSpec-CTR-S-006	Pre-arranged PoC Group Session setup request	7.2.1.3	M	PoCCPSpec-CTR-S-007 OR PoCCPSpec-CTR-S-008
PoCCPSpec-CTR-S-007	Pre-arranged PoC Group Session setup request with Confirmed Indication	7.2.1.3	M	
PoCCPSpec-CTR-S-008	Pre-arranged PoC Group Session setup request with Unconfirmed Indication	7.2.1.3	O	
PoCCPSpec-CTR-S-009	Rejoining PoC Session request	7.2.1.4	M	
PoCCPSpec-CTR-S-010	Alternative IP address or port number indication	7.2.1.4	M	
PoCCPSpec-CTR-S-011	Joining chat PoC Group Session request	7.2.1.5	M	
PoCCPSpec-CTR-S-012	Alternative IP address or port number indication	7.2.1.5	M	
PoCCPSpec-CTR-S-013	PoC Session joining policy enforcement	7.2.1.6	M	
PoCCPSpec-CTR-S-014	PoC Session modification (changes to media capabilities)	7.2.1.7	M	
PoCCPSpec-CTR-S-015	Updating of media capabilities according to	7.2.1.7	O	

	local policy			
PoCCPSpec-CTR-S-016	Adding Participants to PoC Session request	7.2.1.8	M	
PoCCPSpec-CTR-S-017	Termination of the implicit subscription and indication to PoC Client	7.2.1.8	M	
PoCCPSpec-CTR-S-018	Leaving PoC Session request for On-demand Session case	7.2.1.9.1	M	
PoCCPSpec-CTR-S-019	Processing requests for leaving a PoC Session (for Pre-established Session case)	7.2.1.9.2	O	PoCCPSpec-PTR-S-014
PoCCPSpec-CTR-S-020	Cancel PoC Session setup request	7.2.1.10	M	
PoCCPSpec-CTR-S-021	PoC Session Participant information requests	7.2.1.11 7.2.1.11.1 7.2.1.11.2	M	
PoCCPSpec-CTR-S-022	Terminate subscriptions for terminated PoC Sessions	7.2.1.11.3	M	
PoCCPSpec-CTR-S-023	Sending of SIP NOTIFY when subscribed state changes	7.2.1.11.1	O	
PoCCPSpec-CTR-S-024	Limiting rate of SIP NOTIFY requests	7.2.1.11.2	O	
PoCCPSpec-CTR-S-025	PoC Server should avoid sending SIP Notify to a PoC Client at the same time as a Talk Burst is sent or received from same PoC Client	7.2.1.11.2	O	
PoCCPSpec-CTR-S-026	Group Advertisement requests (SIP MESSAGE request)	7.2.1.12	M	PoCCPSpec-CTR-S-027 OR PoCCPSpec-CTR-S-028
PoCCPSpec-CTR-S-027	Group Advertisement request reject when not supported by the server	7.2.1.12	O	
PoCCPSpec-CTR-S-028	Group Advertisement request procedure when feature is supported	7.2.1.12	O	
PoCCPSpec-CTR-S-029	SIP Session refresh procedure	7.2.1.13	M	PoCCPSpec-CIR- S-006

A.2.9.2 Requests initiated by the Controlling PoC Function

Item	Function	Reference	Status	Requirement
PoCCPSpec-CIR-S-001	General - Server behavior when generating a SIP request	7.2.2.1	M	
PoCCPSpec-CIR- S-002	PoC Session invitation request	7.2.2.2	M	PoCCPSpec-CIR- S-003 OR PoCCPSpec-CIR- S-004
PoCCPSpec-CIR- S-003	PoC Session invitation	7.2.2.2	M	

	request with Confirmed Indication			
PoCCPSpec-CIR- S-004	PoC Session invitation request with Unconfirmed Indication	7.2.2.2	O	
PoCCPSpec-CIR- S-005	Alternative IP address or port number indication	7.2.2.2	M	
PoCCPSpec-CIR- S-006	Cancel of PoC Session invitation request	7.2.2.3	M	
PoCCPSpec-CIR- S-007	Removal of Participant from PoC Session	7.2.2.4	M	
PoCCPSpec-CIR- S-008	PoC Session modification of media capabilities for one SIP Session in an ongoing PoC Session	7.2.2.5	O	
PoCCPSpec-CIR- S-009	Group Advertisement request sending	7.2.2.6	O	

Appendix B. The parameters to be provisioned for PoC service (Normative)

B.1 OMA PoC Device Management general

This Appendix describes the parameters that are needed for initiation of PoC service, as well as continues provisioning by service provider. These parameters are specified in Client Provisioning Application Characteristics document (AC file) and Device Management Management Object (DM MOs). The bootstrap function specified in [Provisioning Bootstrap] and [OMA DM] SHALL be used to enforce the security of provisioning. Existing parameters in [Provisioning Content] and [OMA DM] are re-used; those without corresponding parameters are defined in present specification and to be registered in OMNA through OMA official registration procedures.

- 1. APPID (Application ID): The application characteristics name for this application, to be used by DM Client to uniquely identify the application.
- 2. NAME: Application name. To be displayed in equipment, it's specific for each service provider.
- 3. PROVIDER-ID: provides an identifier for the application service access point described by an APPLICATION characteristic.
- 4. TO-NAPID: This parameter allows an application to refer to a network access point with a matching NAPID parameter. It is only possible to refer to network access points defined within the same provisioning document.
- 5. TO-APPREF: The TO-APPREF parameter links the APPLICATION characteristics to another secondary APPLICATION characteristic with a matching APPREF parameter.
- 6. Pre-established Session support: A flag to inform whether the PoC Server supports the Pre-established Session functionality
- 7. Support for Simultaneous Sessions: A flag to inform whether the PoC Server supports Simultaneous Sessions functionality
- 8. Max Ad-hoc Group size: Maximum number of Participants allowed for an Ad-hoc PoC Group PoC Session.
- 9. Conference-Factory-URI: A SIP URI used for setting up an Ad-hoc PoC Group or 1-1 PoC Session.
- 10. Exploder-URI: A SIP URI used for sending SIP MESSAGE e.g. Group Advertisement to an URI-list.
- 11. Talk burst release timer: This parameter indicates the value of the talk burst release timer (T10) in milliseconds
- 12. Talk burst request timer: This parameter indicates the value of the talk burst request timer (T11) in milliseconds
- 13. PoC Client end RTP media timer: This parameter indicates the value of the talk burst request timer (T13) in milliseconds

NOTE: The parameters 11 - 13 are parameters needed for OMA PoC UP procedures.

The parameters from 6 - 13 are defined in the present specification for PoC service. They are to be registered in OMNA.

The PoC Client SHALL have provisioned parameters 1, 2, 4, 5, 6, 7, 8, 9, 11 and 12 and the PoC Client SHOULD have the parameters 3 and 13 provisioned. These parameters SHALL be obtained via the DM-1 reference point, from the data which is provisioned to the DM Client as specified in [Provisioning Content] and [OMA DM].

B.2 OMA PoC Device Management Management Object file

This subclause defines a mobile device Management Object (MO) for OMA PoC. The MO is used for continuous provisioning, which is required by service provider to update service configurations.

The OMA_PoC Management Object consists of relevant parameters required by [OMA RD] and [OMA AD]. It is compatible with OMA Device Management protocol specifications, version 1.1.2, and is defined using the OMA DM Device Description Framework as described in [OMA-SyncML-DMTND-V1-1-2] and [OMA-SyncML-DMStdObj-V1-1-2].

The Management Object Identifier is: org.openmobilealliance/1.0/POC.

Protocol compatibility: This MO is compatible with OMA DM 1.1.2.

Management object name: OMA_POC.

B.2.1 OMA PoC Management Object tree

The Figure 1: The OMA PoC Management Object shows interior nodes and leaf objects defined under the OMA_PoC node:

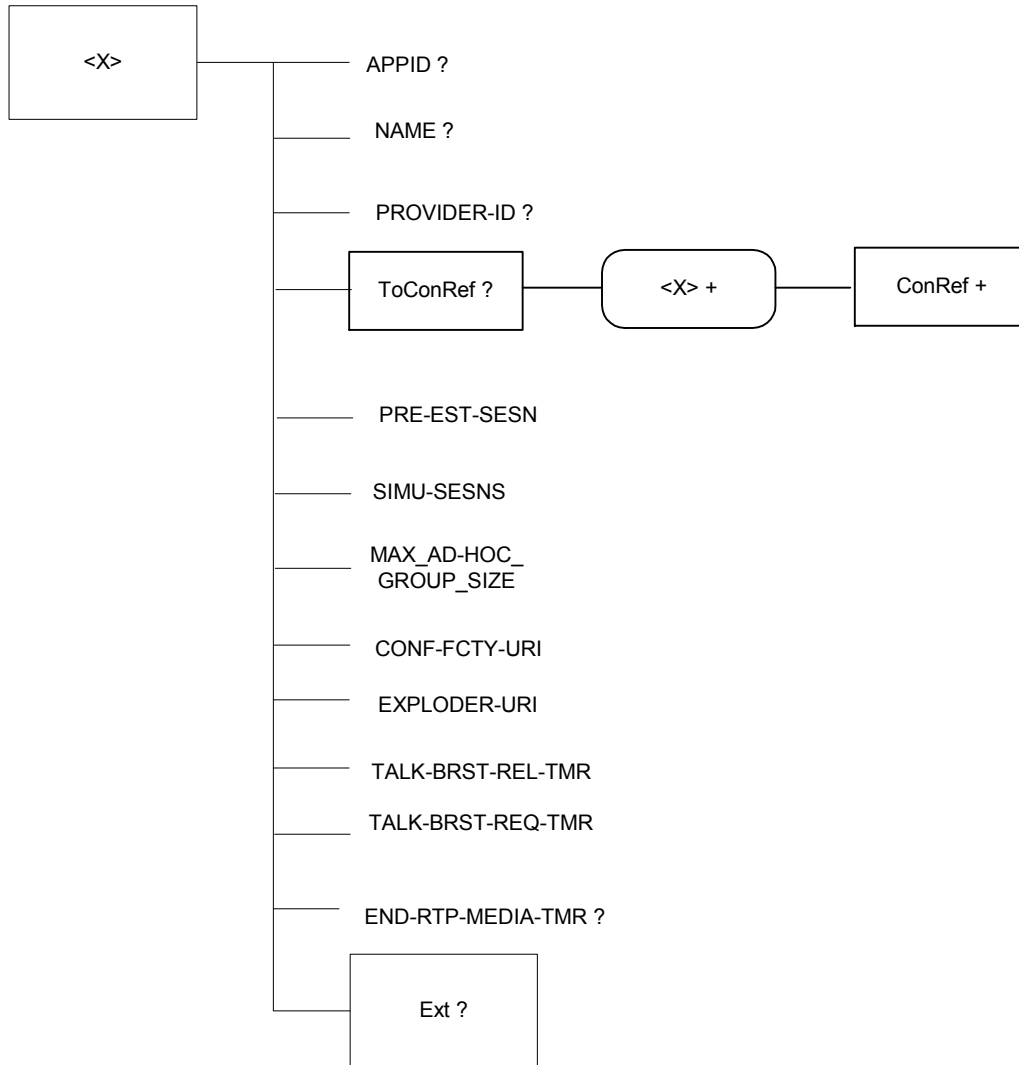


Figure 1: The OMA PoC Management Object

B.2.2 Management Object parameters

This clause describes the parameters for the OMA PoC Management Object.

1. Node: /<X>

This interior node acts as a placeholder for one or more accounts for a fixed node. The interior node is mandatory if the UE supports OMA PoC.

- Occurrence: OneOrMore
- Format: Node
- Access Types: Get
- Values: xx

2. /<X>/APPID/

The APPID is the identity of the application service available at the described application service access point. The value is expected to be globally unique.

- Occurrence: ZeroOrOne
- Format: chr
- Access Types: Get
- Values: <Globally unique value>

Editor's Note: The value of the OMA_PoC/APPID to be determined by OMNA.

3. /<X>/NAME/

The Name leaf is the application name, which is to be displayed in user's equipment, it's specific for each service provider.

- Occurrence: ZeroOrOne
- Format: chr
- Access Types: Get
- Values: <User displayable name>

4. /<X>/PROVIDER-ID/

This parameter provides an identifier for the application service access point described by an APPLICATION characteristic.

- Occurrence: ZeroOrOne
- Format: chr
- Access Types: Get
- Values: <Provider identifier>

5. /<X>/ToConRef

The ToConRef interior node is used to allow application to refer to a collection of connectivity definitions. Several connectivity parameters may be listed for a give application under this interior node.

- Occurrence: ZeroOrOne
- Format: node
- Access Types: Get
- Values: N/A

6. /<X>/ToConRef/<X>

This run-time node acts as a placeholder for one or more connectivity parameters.

- Occurrence: OneOrMore
- Format: Node
- Access Type: Get
- Value: N/A

7. /<X>/ToConRef/<X>/ConRef

The ConRef indicates the linkage to connectivity parameters. This parameter points to the right connectivity identity, NAP ID and the SIP/IP Core.

- Occurrence: OneOrMore
- Format: chr
- Access Types: Get
- Values: N/A

8. /<X>/PRE-EST-SESN/

This is a flag to inform whether the PoC Server supports the Pre-established Session functionality.

- Occurrence: One
- Format: chr
- Access Types: Get
- Values: 0, 1
 - 0 – Indicates that the home operator's network has NO support for Pre-established Session.
 - 1 – Indicates that the home operator's network has support for Pre-established Session.

9. /<X>/SIMU-SESNS/

This is a flag to inform whether the PoC Server supports for Simultaneous Sessions functionality.

- Occurrence: One
- Format: chr
- Access Types: Get
- Values: 0, 1
 - 0 – Indicates that the home operator's network has NO support for Simultaneous Sessions.
 - 1 – Indicates that the home operator's network has support for Simultaneous Sessions.

10. /<X>/MAX_AD-HOC_GROUP_SIZE/

This parameter defines the Maximum number of group members allowed for an Ad-hoc PoC Group Session. The value is defined by each service provider.

- Occurrence: One
- Format: chr
- Access Types: Get
- Values: <Integer>

11. /<X>/CONF-FCTY-URI/

A SIP URI used for setting up an Ad-hoc PoC Group or 1-1 PoC Session.

- Occurrence: One
- Format: chr
- Access Types: Get
- Values: <A SIP URI>

12. /<X>/EXPLODER-URI/

A SIP Exploder-URI used for PoC Client to send SIP MESSAGE, e.g. for Group Advertisement.

- Occurrence: ZeroOrOne
- Format: chr
- Access Types: Get
- Values: <A SIP URI>

13. /<X>/TALK-BRST-REL-TMR/

This parameter indicates the value of the talk burst release timer (T10) in milliseconds

- Occurrence: One
- Format: chr
- Access Types: Get
- Values: <A time length in millisecond>

14. /<X>/TALK-BRST-REQ-TMR/

This parameter indicates the value of the talk burst request timer (T11) in milliseconds

- Occurrence: One
- Format: chr
- Access Types: Get
- Values: <A time length in millisecond>

15. /<X>/END-RTP-MEDIA-TMR/

This parameter indicates the value of the PoC Client end of RTP Media timer (T13) in milliseconds

- Occurrence: ZeroOrOne
- Format: chr
- Access Types: Get
- Values: <A time length in millisecond>

16. /<X>/Ext/

The Ext is an interior node for where the vendor specific information about the OMA_PoC MO is being placed (vendor meaning application vendor, device vendor etc.). Usually the vendor extension is identified by vendor specific name under the ext node. The tree structure under the vendor identified is not defined and can therefore include un-standardized sub-tree.

- Occurrence: ZeroOrOne
- Format: node
- Access Types: Get
- Values: N/A

Appendix C. Presence information elements and procedures(Normative)

This Appendix defines the PoC specific presence information elements and the presence procedures, which the PoC functional entities follow in order to perform presence related actions.

C.1 PoC specific presence information elements

OMA PoC RD specifies a set of presence information elements, allowing to express the PoC User's Presence status. This subclause describes these PoC specific Presence information elements and how they fit into the overall Presence data model as described in [OMA-Pres-Spec].

Table 1 contains the Presence status mapping to the respective presence attributes.

Presence status	Presence attribute as specified in [OMA-Pres-Spec]	Description
Do Not Disturb –Incoming Session Barring	“Application-specific (PoC) Availability for sessions” “Application-specific (PoC) Willingness for sessions”	Indicates whether the PoC User is currently willing to accept new incoming PoC Sessions (Yes/No)
Do Not Disturb – Instant Personal Alerts Barring	“Application-specific (PoC) Availability for alerts” “Application-specific (PoC) Willingness for alerts”	Indicates whether the PoC User is currently willing to accept incoming Instant Personal Alerts (Yes/No)
Registered	“Application-specific (PoC) Availability for sessions and alerts” “Application-specific (PoC) Willingness for sessions and alerts”	Indicates whether the PoC User is “registered” with the PoC service (True/False)
Able to accept new incoming PoC Session	“Application-specific (PoC) Availability for sessions”	Indicates whether the PoC User is able to accept a new incoming PoC Session (True/False)
Able to accept incoming Instant Personal Alerts	“Application-specific (PoC) Availability for Alerts”	Indicates whether the PoC User is able to accept incoming Instant Personal Alerts (True/False)
Currently in at least one PoC Session	“Session Participation”	Indicates whether the PoC User is currently engaged in one or more PoC Sessions (True/False)

Table 1: PoC specific Presence states

C.1.1 Availability for PoC-Session Service

The “Available for PoC-Session Service” is mapped onto the “Application-specific Availability” presence information element as specified in [OMA-Pres-Spec] “*Application-specific Availability*” pertaining to a “PoC Session” service:

```
<tuple >      →<status>→<basic>→open/closed
               →<service-description>→<service-id>→org.openmobilealliance:PoC-session
               →<version>→1.0
```

The “PoC-session Availability” presence information element including a <status> element with a <basic> sub-element with the value “open” indicates that the presentity is available for incoming PoC-Sessions. This happens when the PoC User is registered, ISB is not activated and the maximum number of PoC-Sessions is not reached.

The “PoC-session Availability” presence information element including a <status> element with a <basic> sub-element with the value “closed” indicates that the presentity is unavailable for incoming PoC-Sessions. This happens when the PoC User is not registered, or ISB is activated, or the maximum number of PoC-Sessions is reached.

C.1.2 Availability for PoC-Alert Service

The “Available for PoC-Alert Service” is mapped onto the “Application-specific Availability” presence information element as specified in [OMA-Pres-Spec] “*Application-specific Availability*” pertaining to a “PoC Alerts” service as follows:

```
<tuple >      →<status>→ <basic>→open/closed
               →<service-description>      →<service-id>→org.openmobilealliance:PoC-Alerts
               →<version>→1.0
```

The “PoC-Alerts Availability” presence information element including a <status> element with a <basic> sub-element with the value “open” indicates that the presentity is available for incoming PoC Instant Personal Alerts. This happens when the PoC User is registered and Instant Personal Alerts Barring (IAB) is not activated.

The “PoC-Alerts Availability” presence information element including a <status> element with a <basic> sub-element with the value “closed” indicates that the presentity is unavailable for incoming PoC Instant Personal Alerts. This happens when the PoC User is not registered or Instant Personal Alerts Barring (IAB) is activated.

C.1.3 Willingness for PoC-Session Service

The “Willingness for PoC-Session Service” is mapped onto the “Application-specific Willingness” presence information element as specified in [OMA-Pres-Spec] “*Application-specific Availability*” pertaining to a “PoC Session” service:

```
<tuple>      →<status>      →<willingness>→<basic>→open/closed
               →<service-description>      →<service-id>→org.openmobilealliance:PoC-session
               →<version>→1.0
```

The “PoC-Session Willingness” presence information element including a <willingness> element with a <basic> subelement with the value “open” indicates that the presentity is willing to accept incoming PoC Session requests (i.e. incoming PoC session requests are not barred, meaning that ISB is not activated).

The “PoC-Session Willingness” presence information element including a <willingness> element with a <basic> sub-element with the value “closed” indicates that the presentity is unwilling to accept incoming PoC Session requests (i.e. incoming PoC session requests are barred, meaning that ISB is activated).

C.1.4 Willingness for PoC-Alerts Service

The “Willingness for PoC-Alerts Service” is mapped onto the “Application-specific Willingness” presence information element as specified in [OMA-Pres-Spec] “*Application-specific Availability*” pertaining to a “PoC Alerts” service:

```
<tuple>      →<status>      →<willingness>→<basic>→open/closed
```

→<service-description> →<service-id>→org.openmobilealliance:PoC-Alerts
 →<version>→1.0

The “PoC-Alerts Willingness” presence information element including a <willingness> element with a <basic> sub-element with the value “open” indicates that the presentity is willing to accept incoming Instant Personal Alerts requests (i.e. Instant Personal Alerts are not barred, meaning that IAB is not activated).

The “PoC-Alerts Willingness” presence information element including a <willingness> element with a <basic> sub-element with the value “closed” indicates that the presentity is unwilling to accept incoming Instant Personal Alerts (i.e. Instant Personal Alerts are barred, meaning that Instant Personal Alert Barring is activated).

C.1.5 PoC session participation

The “PoC Session Participation” is mapped onto the “session participation” presence information element as specified in [OMA-Pres-Spec] “*Application-specific Availability*” pertaining to a “PoC Session” service:

<tuple > →<status> →<session-participation>→<basic>→open/closed
 →<service-description> →<service-id>→org.openmobilealliance:PoC-session
 →<version>→1.0

The “Session-Participation” presence information element including a <session-participation> element with a <basic> sub-element with the value “open” indicates that the presentity is participating in at least one PoC Session.

The “Session-Participation” presence information element including a <session-participation> element with a <basic> sub-element with the value “closed” indicates that the presentity is not participating in any PoC Session.

C.2 PoC Server Procedures

This subclause outlines under which PoC procedures the presence attributes as given in subclause C.1 “*PoC specific presence information elements*” are published to the Presence Server.

PoC procedure	Presence as specified in [OMA-Pres-Spec]	Parameter value
General Procedures		
Registration	“Application-specific (PoC) Availability for sessions”	TRUE
	“Application-specific (PoC) Willingness for sessions”	TRUE
	“Application-specific (PoC) Availability for alerts”	TRUE
	“Application-specific (PoC) Willingness for alerts”	TRUE
	“Session Participation”	FALSE
De-registration	“Application-specific (PoC) Availability for sessions”	FALSE
	“Application-specific (PoC) Willingness for sessions”	FALSE
	“Application-specific (PoC) Availability for alerts”	FALSE
	“Application-specific (PoC) Willingness for alerts”	FALSE
	“Session Participation”	FALSE
Setting: ISB:ON received	“Application-specific (PoC) Willingness for sessions”	FALSE
	“Application-specific (PoC) Availability for sessions”	FALSE
	“Session Participation”	FALSE

Setting: ISB:OFF received	“Application-specific (PoC) Willingness for sessions”	TRUE
	“Application-specific (PoC) Availability for sessions”	TRUE
Setting: IAB:ON received	“Application-specific (PoC) Willingness for alerts”	FALSE
	“Application-specific (PoC) Availability for alerts”	FALSE
Setting: IAB:OFF received	“Application-specific (PoC) Willingness for alerts”	TRUE
	“Application-specific (PoC) Availability for alerts”	TRUE
Case: Single PoC Session mode		
PoC Session initiation	“Application-specific (PoC) Availability”	FALSE
	“Session Participation”	TRUE
PoC Session completion	“Application-specific (PoC) Availability”	TRUE
	“Session Participation”	FALSE
Case: Simultaneous PoC Session mode		
PoC Session initiation AND $N_{\text{session}} < N_{\text{max}}$.	“Application-specific (PoC) Availability”	TRUE
	“Session Participation”	TRUE
PoC Session initiation AND $N_{\text{session}} = N_{\text{max}}$.	“Application-specific (PoC) Availability”	FALSE
	“Session Participation”	TRUE
PoC Session completion AND $0 < N_{\text{session}} < N_{\text{max}}$.	“Application-specific (PoC) Availability”	TRUE
	“Session Participation”	TRUE
PoC Session completion AND $N_{\text{session}} = 0$	“Application-specific (PoC) Availability”	TRUE
	“Session Participation”	FALSE
Locking in PoC Session	“Application-specific (PoC) Availability”	FALSE
	“Session Participation”	FALSE

Table 2: Definition of presence attributes depending on PoC procedure

C.2.1 Acting as presence source

The PoC Server MAY act as a presence source as specified in [PoC-AD] and [OMA-Pres-Spec] and publish certain sets of presence information on behalf of the PoC User.

All the following procedures apply when the PoC Server acts as a presence source. The presence attribute values that depend on the PoC procedures are given in table 2 (above).

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use the procedures of “AS acting as originating User Agent” defined in [TS24.229] / [3GPP2 X.S0013.4] section 5.7.3, when acting as a presence source.

C.2.1.1 PoC registration and de-registration

Upon accepting a registration request from a PoC User as specified in subclause 6.1.1.2 “*PoC service registration and re-registration*” the PoC Server MAY and act as a presence source. In that case, the PoC Server SHALL perform the publication of presence information as defined in [OMA-Pres-Spec] “*Publication of presence information*”. The PoC Server SHALL at least include the following presence information:

- set the value of “PoC-Session Availability” presence information element to available (as defined in subclause C.1.1 “*Availability for PoC-Session Service*”)
- set the value of “PoC-Alerts Availability” presence information element to available (as defined in subclause C.1.2 “*Availability for PoC-Alert Service*”)
- set the value of “PoC-Session Willingness” presence information element to willing (as defined in subclause C.1.3 “*Willingness for PoC-Session Service*”)
- set the value of “PoC-Alerts Willingness” presence information element to willing (as defined in subclause C.1.4 “*Willingness for PoC-Alerts Service*”)

set the <entity> element of the presence information document as defined in [OMA-Pres-Spec] to the value of the authenticated identity of the PoC User that has registered to the PoC service (e.g. to the value of the P-Asserted-Identity header field of the REGISTER request).

Furthermore, the PoC Server MAY set the “PoC-Session participation” presence information element to the value of “closed” (as defined in subclause C.1.5 “*PoC Session participation*”)

NOTE !: Other Presence information elements might be published with the appropriate values at the same time.

Upon accepting a de-registration request from a PoC User as specified in subclause 6.1.1.3 “*PoC service de-registration*” MAY act as a Presence source. In that case, the PoC Server SHALL perform the publication of Presence information as defined in [OMA-Pres-Spec] “*Publication of presence information*”. The PoC Server SHALL at least include the following Presence information:

- set the value of the “PoC-Session Availability” Presence information element to unavailable (as defined in subclause C.1.1 “*Availability for PoC-Session Service*”)
- set the “PoC-Alerts Availability” Presence information element to unavailable (as defined in subclause C.1.2 “*Availability for PoC-Alert Service*”)
- set the “PoC-Session Willingness” Presence information element to unwilling (as defined in subclause C.1.3 “*Willingness for PoC-Session Service*”)
- set the “PoC-Alerts Willingness” Presence information element to unwilling (as defined in subclause C.1.4 “*Willingness for PoC-Alerts Service*”)
- set the <entity> element of Presence information document as defined in [OMA-Pres-Spec] to the value of the authenticated identity of the PoC User that has de-registered from the PoC service (e.g. to the value of the P-Asserted-Identity header field of the REGISTER request).

Furthermore, the PoC Server MAY set the “PoC-Session participation” Presence information element to the value of “closed” (as defined in subclause C.1.5 “*PoC-session participation*”)

NOTE 2: Other Presence information elements might be published with the appropriate values at the same time.

NOTE 3: It is beyond the scope of the present specification to determine how the PoC Server becomes aware of registration/ de-registration state.

C.2.1.2 Incoming Session Barring (ISB)

Upon accepting a request from a PoC User to activate Incoming Session Barring (ISB) as specified in subclause 6.1.2 “*PoC service settings procedure*” the PoC Server MAY act as a Presence source. In that case, the PoC Server SHALL perform the publication of presence information as specified in [OMA-Pres-Spec] “*Publication of presence information*”. The PoC Server SHALL at least include the following PoC presence information:

- set the value of “PoC-Session Availability” presence information element to unavailable (as specified in C.1.1 “*Availability for PoC-Session Service*”)
- set the value of “PoC-Session Willingness” presence information element to unwilling (as specified in C.1.3 “*Willingness for PoC-Session Service*”)

- set the <entity> element of the presence information document as specified in [OMA-Pres-Spec] to the value of the authenticated identity of the PoC User publishing the ISB (e.g. to the value of the P-Asserted-Identity header field of the PUBLISH request).

Upon accepting a request from a PoC User to de-activate Incoming Session Barring (ISB) as specified in subclause 6.1.2 “*PoC service registration and re-registration*” MAY act as a presence Source. In that case, the PoC Server SHALL perform the publication of presence information as specified in [OMA-Pres-Spec] “*Publication of presence information*”. The PoC Server SHALL at least include the following presence information:

- set the value of “PoC-Session Availability” presence information element to available (as specified in C.1.1 “*Availability for PoC-Session Service*”)
- set the value of “PoC-Session Willingness” presence information element to willing (as specified in C.1.3 “*Willingness for PoC-Session Service*”)
- set the <entity> element of the presence information document as specified in [OMA-Pres-Spec] to the value of the authenticated identity of the PoC User publishing the ISB (e.g. to the value of the P-Asserted-Identity header field of the PUBLISH request).

C.2.1.3 Incoming Instant Personal Alert Barring (IAB)

Upon accepting a request from a PoC User to activate Incoming Instant Personal Alert Barring (IAB) the PoC Server MAY act as a presence source. In that case, the PoC Server SHALL perform the publication of presence information as defined in [OMA-Pres-Spec] “*Publication of presence information*”. The PoC Server SHALL at least include the following presence information:

- set the value of “PoC-Alerts Availability” presence information element to unavailable (as specified in C.1.2 “*Availability for PoC-Alert Service*”)
- set the value of “PoC-Alerts Willingness” presence information element to unwilling (as specified in C.1.4 “*Willingness for PoC-Alerts Service*”)
- set the <entity> element of presence information document as defined in [OMA-Pres-Spec] to the value of the authenticated identity of the PoC User publishing the IAB (e.g. to the value of the P-Asserted-Identity header field of the PUBLISH request).

Upon accepting a request from a PoC User to de-activate Incoming Personal Alerts Barring (IAB) and acting as a presence source, the PoC Server SHALL perform the publication of Presence information as defined in [OMA-Pres-Spec] section 5.1.1. The PoC Server SHALL at least include the following Presence information:

- set the value of “PoC-Alerts Availability” presence information element to available (as specified in C.1.2 “*Availability for PoC-Alert Service*”)
- set the value of “PoC-Alerts Willingness” presence information element to willing (as specified in C.1.4 “*Willingness for PoC-Alerts Service*”)
- set the <entity> element of presence information document as defined in [OMA-Pres-Spec] to the value of the authenticated identity of the PoC User publishing the IAB (e.g. to the value of the P-Asserted-Identity header field of the PUBLISH request).

C.2.1.5 PoC Session state

Upon setting up or terminating a PoC Session, the PoC Server MAY act as presence source. In that case, the PoC Server MAY perform publication of presence information as specified in [OMA-Pres-Spec] “*Publication of presence information*” and set the “PoC-Session participation” presence information element to the appropriate value (as specified in subclause C.1.5 “*Availability for PoC-Session Service*”). Typically, session participation information is published when the PoC User is joining a first PoC session or tearing down the last PoC Session.

Upon determining that a PoC User has reached his/her maximum number of simultaneous PoC Sessions or determining that a PoC User is no longer engaged in the maximum number of simultaneous PoC Sessions he/she can support, the PoC Server MAY act as presence source and perform publication of presence information as specified in [OMA-Pres-Spec] “*Publication*”

of *presence information*” and set the “PoC-Session availability” presence information element to the appropriate value (as specified in subclause C.1.1 “*Availability for PoC-Session Service*”).

NOTE 1: Given the dynamic nature of PoC Session establishment, care has to be taken in the implementation (e.g. limiting the rate of the publications) to limit the amount of traffic sent by that procedure.

NOTE 2: Determining the “trigger” points of PoC Session set-up and maximum number of PoC Sessions are beyond the scope of the present Appendix.

C.2.2 Acting as watcher

The PoC Server MAY act as a watcher as specified in [PoC-AD] and [OMA-Pres-Spec].

When the SIP/IP Core corresponds with 3GPP/3GPP2 IMS, the PoC Server SHALL use the procedures of “*AS acting as originating User Agent*” specified in [TS24.229] / [3GPP2 X.S0013.4] section 5.7.3, when acting as a watcher.

The exact procedures determining the behaviour of the PoC Server acting as watcher is beyond the scope of the present specification.

C.3 PoC Client

The PoC Client SHOULD collaborate with the presence source and watcher entities when residing in the same UE.

Only when the PoC Server is not enabled to publish presence information on behalf of the PoC User, then the Presence Source residing in the same UE as the PoC Client SHOULD publish the presence information for the elements specified in subclause C.1 “*Availability for PoC-Session Service*”.

The exact procedures determining the collaboration between the PoC Client, the watcher and presence source in the UE are beyond the scope of the present specification.

C.4 PoC specific presence values

This subclause registers with OMNA the following new values of the <service-description> presence information element defined in [OMA-Pres-Spec] related to PoC:

<service-id>: org.opemobilealliance:PoC-session, org.openmobilealliance:PoC-alerts

<version>: 1.0

Editor’s Note: The values describing the <service-id> of OMA PoC Session and OMA PoC-Alerts needs to be registered with OMNA

Appendix D. Initial Filter Criteria

(Informative)

D.1 General

The 3GPP IMS/ 3GPP2 MMD SIP/IP Core uses initial Filter Criteria to determine the routing of initial SIP requests between the home network SIP/IP Core and Application Servers such as the PoC Server. The initial Filter Criteria is part of the PoC User subscription information and represent the provisioned subscription of a PoC User to an application(s). This clause is only informative because it is likely that the PoC service needs to be integrated with other SIP based services potentially hosted on different platforms from the PoC Server. In this case the initial Filter Criteria for the PoC service needs to be integrated with initial Filter Criteria for the other applications.

If some other SIP/IP Core than 3GPP IMS/ 3GPP2 MMD that does not use initial Filter Criteria is used to deploy the PoC service then the logic identified here needs to be implemented by the SIP/IP Core to route the PoC related SIP requests to the PoC Server.

Further details on initial Filter Criteria are specified in [TS23.218] and [TS29.228].

D.2 Originating Filter Criteria

NOTE: Originating Filter Criteria is indexed on the P-Asserted-Identity header.

CASE method="INVITE" AND header="Accept-Contact" = "+g.poc.talkburst"

THEN: ROUTE request to the specified PoC Server Originating Port Address

CASE method="MESSAGE" AND header="Accept-Contact" = "+g.poc.talkburst"

THEN: ROUTE request to the specified PoC Server Originating Port Address

CASE method="MESSAGE" AND header="Accept-Contact" = "+g.poc.groupad"

THEN: ROUTE request to the specified PoC Server Originating Port Address

CASE method="SUBSCRIBE" AND header="Accept-Contact" = "+g.poc.talkburst"

THEN: ROUTE request to the specified PoC Server Originating Port Address

CASE method="PUBLISH" AND header="Accept-Contact" = "+g.poc.talkburst"

THEN: ROUTE request to the specified PoC Server Originating Port Address.

CASE method="REFER" AND header="Accept-Contact" = "+g.poc.talkburst"

THEN: ROUTE request to the specified PoC Server Originating Port Address.

D.3 Terminating Filter Criteria

NOTE: Terminating Filter Criteria is indexed based on the Request-URI.

CASE method="INVITE" AND header="Accept-Contact" = "+g.poc.talkburst"

THEN: ROUTE request to the specified PoC Server Terminating Port Address

CASE method="MESSAGE" AND header="Accept-Contact" = "+g.poc.talkburst"

THEN: ROUTE request to the specified PoC Server Terminating Port Address

CASE method="MESSAGE" AND header="Accept-Contact" = "+g.poc.groupad"

THEN: ROUTE request to the specified PoC Server Terminating Port Address

CASE method="SUBSCRIBE" AND header="Accept-Contact" = "+g.poc.talkbusrt"

THEN: ROUTE request to the specified PoC Server Terminating Port Address

Appendix E. Documentation of SIP, SDP and XML extensions (Informative)

E.1 PoC content types

This subclause describes the PoC specific content types.

E.1.1 Group Advertisement

E.1.1.1 Structure of the Group Advertisement Document

A Group Advertisement is an XML document that must be well-formed and has to be valid. Group Advertisement documents is based on XML 1.0 and uses UTF-8 encoding. This specification makes use of XML namespaces for identifying Group Advertisement documents and document fragments. The namespace URI for elements defined by this specification is a URN, using the namespace identifier 'oma'. This URN is:

```
urn:oma:params:xml:ns:poc:groupadvertisement
```

A Group Advertisement document begins with the root <group-advertisement> element. It consists of an optional <note> element that indicates some information to be rendered to the PoC User, and a number of <group> elements. Each group element contains an optional 'type' attribute indicating the type of the PoC Group. The current list of defined values includes "dialed-in", "dialed-out", and "other". The value "other" is left for future expandability when new types are created that cannot be framed as either dialed-in or dialed-out.

NOTE: In PoC service dialed-in type corresponds the chat PoC Group and dialed-out corresponds the prearranged PoC Group.

Each <group> element contains a <display-name> child element that contains the name of the PoC Group. The <uri> child element contains the URI of the PoC Group.

A Group Advertisement document shall be identified with the MIME content type "application/vnd.poc.group-advertisement+xml".

E.1.1.2 Example of a Group Advertisement document

```
<?xml version="1.0" encoding="UTF-8"?>
<group-advertisement
  xmlns="urn:oma:params:xml:ns:poc:group-advertisement"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="urn:oma:params:xml:ns:poc:group-advertisement">
  <note>This group will meet next week</note>
  <group type="dialed-in">
    <display-name>Teleworkers</display-name>
    <uri>sip:group1@example.com</uri>
  </group>
</group-advertisement>
```

E.1.1.3 XML schema for Group Advertisement

```
<?xml version="1.0" encoding="UTF-8"?>
```

```

<xs:schema
  targetNamespace="urn:oma:params:xml:ns:poc:group-advertisement"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns="urn:oma:params:xml:ns:poc:group-advertisement"
  elementFormDefault="qualified"
  attributeFormDefault="unqualified">

  <xs:element name="group-advertisement" type="advertisementType"/>
  <xs:complexType name="advertisementType">
    <xs:sequence>
      <xs:element name="note" type="xs:string" minOccurs="0"/>
      <xs:element name="group" type="groupType" maxOccurs="unbounded"/>
    </xs:sequence>
  </xs:complexType>
  <xs:complexType name="groupType">
    <xs:sequence>
      <xs:element name="display-name" type="xs:string" minOccurs="0"/>
      <xs:element name="uri" type="xs:anyURI" maxOccurs="unbounded"/>
      <xs:any namespace="##other" processContents="lax"
        minOccurs="0" maxOccurs="unbounded"/>
    </xs:sequence>
    <xs:attribute name="type" use="optional">
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:enumeration value="dialed-in"/>
          <xs:enumeration value="dialed-out"/>
          <xs:enumeration value="other"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:attribute>
    <xs:anyAttribute namespace="##other"/>
  </xs:complexType>
</xs:schema>

```

Editor's Note: OMA should define the namespace for XML schemas. "urn:oma:params:xml:ns:poc:group-advertisement" is used here.

Definitions:

note	advertisement text.
display-name	PoC Group Name.
uri	URI of the PoC Group.
dialed-in	corresponds the chat PoC Group.
dialed-out	corresponds the prearranged PoC Group.
other	place holder for future extensions.

Editor's Note: OMA should define the namespace for XML schemas. "urn:oma:params:xml:ns:poc:group-advertisement" is used here.

E.2 PoC feature-tags

This subclause describes the PoC feature-tags.

E.2.1 Talk Burst

Media feature-tag name: +g.poc.talkburst.

ASN.1 Identifier: New assignment by IANA.

Summary of the media feature indicated by this tag: This feature-tag indicates that the device supports OMA Push To Talk over Cellular (PoC) Talk Burst Control.

Values appropriate for use with this feature-tag: Boolean.

The feature-tag is intended primarily for use in the following applications, protocols, services, or negotiation mechanisms:

- This feature-tag is most useful in a communications application, for describing the capabilities of a device, such as a phone or PDA.

Examples of typical use: Routing a call to a mobile phone that can support push to talk service.

Related standards or documents: OMA-CP-POC-V1_0.

Security Considerations: Security considerations for this media feature-tag are discussed in Section 11.1 of [RFC3840].

E.2.2 Group Advertisement

Media feature-tag name: +g.poc.groupad.

ASN.1 Identifier: New assignment by IANA.

Summary of the media feature indicated by this tag: This feature-tag indicates that the device supports OMA Push To Talk over Cellular (PoC) Group Advertisements.

Values appropriate for use with this feature-tag: Boolean.

The feature-tag is intended primarily for use in the following applications, protocols, services, or negotiation mechanisms:

- This feature-tag is most useful in a communications application, for describing the capabilities of a device, such as a phone or PDA.

Examples of typical use: Routing a Group Advertisement message to a mobile phone that can support PoC Group Advertisements.

Related standards or documents: OMA-CP-POC-V1_0.

Security Considerations: Security considerations for this media feature-tag are discussed in Section 11.1 of [RFC3840].

E.3 SDP extensions

E.3.1 Talk Burst Control Protocol MIME registration

This MIME registration covers transport over UDP.

Type name: Application

Subtype name: TBCP

Required parameters: None

Optional parameters:

queuing: This parameter is used to negotiate the optional Talk Burst Request queuing feature. Permissible values are 0 and 1. If set equal to 1, Talk Burst Request queuing operation is supported. If set equal to 0 or if not present, no Talk Burst Request queuing operation is employed. If queuing=1 is present in a SDP offer then the offerer is indicating that it supports and is willing to support Talk Burst Request queuing operation. The answerer can include the queuing parameter in a SDP answer if it was present in the SDP offer. If the answerer wishes to indicate that it supports and is willing to perform Talk Burst Request queuing operation it includes queuing=1 in the SDP answer. If queuing=0 or no queuing parameter is present in the SDP answer then Talk Burst Request queuing operations are not to be performed.

tb_priority: This parameter is used to negotiate that priority levels can be used in Talk Burst Request messages and defines the maximum priority that a PoC Client is allowed to specify. The allowed values for tb_priority are:

- "0" – listen only – the PoC Client is not authorised to request to talk.
- "1" – normal priority – the normal priority for Talk Burst Requests from PoC Clients and that is granted to PoC Clients that don't support priority queuing.
- "2" – high priority – the PoC Client Talk Burst Requests are handled with a higher priority than those of the normal priority level.
- "3" – preemptive priority – the PoC Client Talk Burst Requests pre-empt those in the queue of all other priority levels and any current speaker of a lower priority level Right to Speak is revoked and the PoC Client is granted the Right to Speak immediately.

The offerer can request priority based queuing operation by including the tb_priority parameter in a SDP offer. The answerer can include the tb_priority parameter in the SDP answer if it was present in the SDP offer. The answerer may change the value of the tb_priority parameter to a lower value but does not increase the value. The only exception to this rule is that priority levels and the tb_priority parameter are not supported and the tb_priority parameter is not present, Talk Burst Request messages from the PoC Client are handled using the normal priority and then the priority level can be effectively promoted from listen only to normal priority. When the tb_priority parameter is included in SDP the queuing parameter queuing=1 also has to be included.

- timestamp:** This parameter is used to negotiate the use of the optional timestamp feature in Talk Burst Request messages. Permissible values are 0 and 1. If set equal to 1, then timestamp based queuing is supported and timestamps can be included in the Talk Burst Request messages. If set equal to 0 or if not present, timestamp based queuing is not supported. If timestamp=1 is present in a SDP offer then the offerer is indicating that it supports and is willing to support timestamp based queuing operation. The answerer can include the timestamp parameter in a SDP answer if it was present in the SDP offer. If the answerer wishes to indicate that it supports and is willing to perform timestamp based queuing operation it includes timestamp=1 in the SDP answer. If timestamp=0 or no queuing parameter is present in the SDP answer then timestamp based queuing operations are not to be performed and timestamps are not included in Talk Burst Request messages. When the timestamp parameter is included in SDP the queuing parameter queuing=1 also has to be included.
- tb_granted:** This optional parameter is used to negotiate and indicate using SDP that permission to send a Talk Burst is being granted to the PoC Client. Permissible values are 0 and 1. If tb_granted=1 is present in a SDP offer from the PoC Client the PoC Client is indicating support for receiving an indication of Talk Burst granted in the SDP answer. If tb_granted=0 or if the tb_granted parameter is not present in a SDP offer from the PoC Client the PoC Client is indicating that it does not support receiving an indication of Talk Burst granted in the SDP answer. The PoC Server performing the Controlling PoC Function can include a tb_granted = 1 in the SDP answer if tb_granted=1 was included in the SDP offer. If the SDP answer contains tb_granted=1, the PoC Client, behaves as if a TBCP Talk Burst Granted message had been received. If tb_granted=0 or if no tb_granted parameter is present in the SDP answer, the PoC Client behaves as if no TBCP Talk Burst Granted message has been received. The PoC Server does not include the tb_granted parameter in a SDP offer and the PoC Client does not include the tb_granted parameter in a SDP answer, however the PoC Server does forward the tb_granted parameter in forwarded requests and responses.
- poc_sess_priority:** This parameter is used to negotiate and indicate that the optional PoC Session priority is used, as it applies to handling of the RTP Media stream. Permissible values are 0 and 1. If poc_sess_priority=1, Primary PoC Session priority to this PoC Session. If poc_sess_priority=0 or if the poc_sess_priority parameter is not present in a SDP offer from the PoC Client the PoC Client is indicating that it wishes to assign the Secondary PoC Session priority to this PoC Session. The PoC Server can include a poc_sess_priority parameter in the SDP answer if it was present in the SDP offer from the PoC Client. If poc_sess_priority =1 was present in the SDP offer the PoC Server indicates that it has set the priority of this PoC Session to Primary PoC Session priority by including poc_sess_priority=1 in the answer. If poc_sess_priority=0 was present in the SDP offer the PoC Server indicates that it has set the priority of this PoC Session to Secondary PoC Session priority by including poc_sess_priority=0 in the SDP answer. If no poc_sess_priority parameter is included in the SDP answer then Secondary PoC Session priority is assigned for this PoC Session. The PoC Server does not include the poc_sess_priority parameter in a SDP offer and the PoC Client does not include the poc_sess_priority parameter in a SDP answer, however the PoC Server does forward the poc_sess_priority parameter in forwarded requests and responses.
- poc_lock:** This parameter is used to negotiate and indicate the PoC Session locking priority as it applies to the handling of the RTP Media stream during Simultaneous PoC Sessions. Permissible values are 0 and 1. If poc_lock=1 is present in a SDP offer from the PoC Client the PoC Client is indicating support for PoC Session locking priority and that it wishes to lock this PoC Session. If poc_lock= 0 or if

the poc_lock parameter is not present in a SDP offer from the PoC Client the PoC Client is indicating that it wishes to unlock this PoC Session. The PoC Server can include a poc_lock parameter in the SDP answer if it was present in the SDP offer from the PoC Client. If poc_lock=1 was present in the SDP offer the PoC Server indicates that it has locked this PoC Session by including poc_lock=1 in the answer. If poc_lock=0 was present in the SDP offer the PoC Server indicates that it has unlocked this PoC Session by including poc_lock=0 in the SDP answer. If no poc_lock parameter is included in the SDP answer then this PoC Session is unlocked. The PoC Server does not include the poc_lock parameter in a SDP offer and the PoC Client does not include the poc_lock parameter in a SDP answer, however the PoC Server does forward the poc_lock parameter in forwarded requests and responses.

Encoding considerations:	This type is defined for transfer over UDP and uses the same encoding as RTCP (RFC3550).
Restrictions on usage:	None
Security considerations:	See Section 14 in RFC3550
Interoperability considerations:	None
Published specification:	OMA-CP-POC-V1_0
Applications which use this media type:	OMA Push-to-Talk over Cellular applications
Additional information:	None
Intended usage:	COMMON

E.3.1.1 Mapping TBCP MIME parameters into SDP

The information carried in the MIME application type has a specific mapping to fields in SDP and are used in a SDP offer and a SDP answer to negotiate the chosen talk burst control protocol and the talk burst control protocol options.

A TBCP connection SHALL be described by using an SDP m line. According to [RFC2327] the m-line format is the following:

```
m=<media> <port> <transport> <fmt list>
```

For TBCP:

- The media type field (MIME type) SHALL have a value of "application".
- The port field SHALL include the transport port for the TBCP.
- The transport field SHALL have the value of "udp"
- The format list field (MIME type) SHALL have the value of "TBCP".

NOTE: TBCP is the only talk burst control protocol specified in this release. Future releases may specify additional talk burst control protocols that could be added to the format list.

The following is an example of an m line for a TBCP connection

```
m=application 20000 udp TBCP
```

TBCP options go in the SDP "a=fmtp" attribute by copying them directly from the MIME media type string as a semicolon separated list of parameter=value pairs.

The following is an example of an attribute line for TBCP options.

```
a=fmtp:TBCP queuing=1; tb_priority=2; timestamp=1; tb_granted=1; poc_sess_priority=0; poc_lock=1
```

E.4 General

E.4.1 Release version in User-agent and Server headers

User agent and Server headers are used to indicate the release version and product information of the PoC Clients and PoC Servers.

The PoC Client and the PoC Server shall implement the User-Agent and Server headers, according to rules and procedures of [RFC3261] with the clarifications in this subclause specific for PoC.

The User-Agent and Server headers ABNF are specified in [RFC3261] and extended as follows:

```
Server = "Server" HCOLON server-val *(LWS server-val)
User-Agent = "User-Agent" HCOLON server-val *(LWS server-val)
server-val = product / comment
product = poc-product / token [SLASH product-version]
product-version = token
```

This specification allows having several server-val tags. The first of those server-val tags shall be encoding according to the following ABNF:

```
poc-product = "PoC-" poc-device-token (SLASH poc-product-version)
poc-device-token = "client" | "serv" | token
poc-product-version = "OMA1.0"
```

Where

```
client = PoC Client
serv = PoC Server
poc-product-version = OMA PoC release version
```

Example 1:

In this example PoC Client acting as UAC and the PoC Server acting as UAS are OMA PoC release version 1.0 products. The PoC Client has inserted its own company and product name and version "Acme-Talk5000/v1.01".

```
User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01
Server: PoC-serv/OMA1.0
```

Example 2:

In this example both the PoC Server acting as UAC and the PoC Client acting as UAS are OMA PoC release version 1.0 products.

```
User-Agent: PoC-serv/OMA1.0
Server: PoC-client/OMA1.0
```


E.5 URI parameters

E.5.1 Session Type uri-parameter

Session Type uri-parameter is used to indicate the type of the PoC Session. The Session Type uri-parameter takes the form:

```
session="sessiontype  
sessiontype="adhoc" | "prearranged" | "chat" | "1-1"
```

Example 1:

In this example the Controlling PoC Server is inviting a PoC User to a Pre-arranged PoC Group.

```
session=prearranged
```

Appendix F. Examples of signalling flows (Informative)

This Appendix contains informative example flows for the Control Plane Signaling for the PoC enabler. These flows are informative examples only and the normative part of the specification is what is required to be implemented in order to be compliant with this specification. In the event of any discrepancy between these examples and the normative part of the specification it is the normative part of the specification that is to be implemented. The SIP message contents described in these flows are only those headers, parameters and elements that are part of the PoC enabler. Additional headers, parameters and elements will be required by [RFC3261], [RFC2327] and also by the SIP/IP core and these are not shown here. In these flows 3GPP IMS is assumed for the SIP/IP core and the P-Asserted-Identity header is shown for the Authenticated Originator's PoC Address. It is also assumed that all PoC Servers are part of the IMS trust domain.

F.1 SIP registration and publication of PoC-settings event

PoC Client A registers with SIP/IP Core A. PoC Client A publishes its current PoC Settings (ISB and AM) to PoC Server A. This flow is as shown in Figure 2 "PoC Client A SIP registers with the SIP/IP Core, PoC and PoC Client A publishes PoC settings".

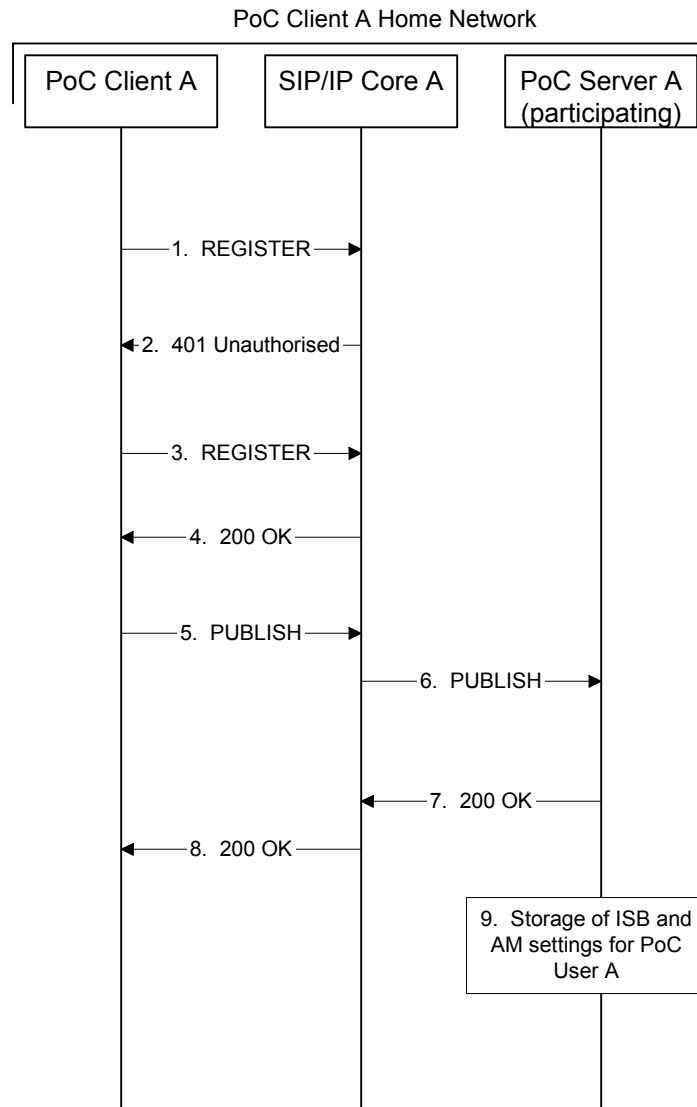


Figure 2: PoC Client A SIP registers with the SIP/IP Core and PoC Client A publishes PoC settings

The steps of the flows are as follows:

1. SIP REGISTER request (from PoC Client A to SIP/IP Core A)

The PoC Client A sends a SIP REGISTER request containing the feature-tag '+g.poc.talkburst' in the contact header to the SIP/IP Core A.

SIP HEADERS

From: <sip:PoC-UserA@networkA.net>;tag=4fa3

To: <sip:PoC-UserA@networkA.net>

User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01

Authorization: Digest username="PoC-UserA-private@networkA.net", realm="registrar.networkA.net", nonce="", uri="sip:registrar.networkA.net", response=""

Contact: <sip:PoC-ClientA@networkA.net>; +g.poc.talkburst; +g.poc.groupad

2. SIP 401 "Unauthorized" response (from SIP/IP A Core to PoC Client A)

The SIP/IP Core A requires authentication of the registration of PoC Client A and responds with a SIP 401 "Unauthorized" response containing an authentication challenge in the WWW-Authenticate header.

3. SIP REGISTER request (from PoC Client A to SIP/IP Core A)

The PoC Client A sends another SIP REGISTER request containing the feature-tag '+g.poc.talkburst' in the contact header and the authentication response in the Authorization header to the SIP/IP Core A.

SIP HEADERS

From: <sip:PoC-UserA@networkA.net>;tag=4fa3

To: <sip:PoC-UserA@networkA.net>

User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01

Authorization: Digest username="PoC-UserA-private@networkA.net", realm="registrar.networkA.net", nonce=base64(RAND + AUTN + server specific data), algorithm=AKAv1-MD5, uri="sip:registrar.networkA.net", response="6629fae49393a05397450978507c4ef1"

Contact: <sip:PoC-ClientA@networkA.net>; +g.poc.talkburst; +g.poc.groupad

4. SIP 200 "OK" response (from SIP/IP Core A to PoC Client A)

The SIP/IP Core A acknowledges the SIP REGISTER request with a SIP 200 "OK" response to the PoC Client A.

5. SIP PUBLISH request (from PoC Client A to SIP/IP Core A)

The PoC Client A publishes the current PoC Settings of PoC Client A by sending a SIP PUBLISH request for the event package "poc-settings" to SIP/IP Core A. This is the normal scenario as the PoC Server has no PoC settings

until published by the PoC Client, however in the case that more than one PoC Client is registered for the same PoC User the PoC Client may (possibly through interaction with the PoC User) determine not to override the current PoC settings.

Request-URI sip:PoC-ClientA@networkA.net

SIP HEADERS

P-Preferred-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *,+g.poc.talkburst; require;explicit

User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01

Contact: <sip:PoC-ClientA@networkA.net>;

Event: poc-settings

Content-Type: application/poc-settings+xml

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<poc-settings xmlns="urn:oma:params:xml:ns:poc:poc-settings"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="urn:oma:params:xml:ns:poc:poc-settings">
```

```
<isb-settings>
```

```
<incoming-session-barring active="false">
```

```
</isb-settings>
```

```
<am-settings>
```

```
<answer-mode>automatic</answer-mode>
```

```
</am-settings>
```

```
<ipab-settings>
```

```
<incoming-personal-alert-barring active="false"/>
```

```
</ipab-settings>
```

```
</poc-settings>□
```

6. SIP PUBLISH request (from SIP/IP Core A to PoC Server A)

The SIP/IP Core A forwards the SIP PUBLISH request to the PoC Server A.

Request-URI sip:PoC-ClientA@networkA.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *,+g.poc.talkburst; require;explicit

User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01

Contact: <sip:PoC-ClientA@networkA.net>;

Event: poc-settings

Content-Type: application/poc-settings+xml

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<poc-settings xmlns="urn:oma:params:xml:ns:poc:poc-settings"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="urn:oma:params:xml:ns:poc:poc-settings">
```

```
<isb-settings>
```

```
<incoming-session-barring active="false">
```

```
</isb-settings>
```

```
<am-settings>
```

```
<answer-mode>automatic</answer-mode>
```

```
</am-settings>
```

```
<ipab-settings>
```

```
<incoming-personal-alert-barring active="false"/>
```

```
</ipab-settings>
```

```
</poc-settings>□
```

7. SIP 200 "OK" response (from PoC Server A to SIP/IP Core A)

The PoC Client A acknowledges the SIP PUBLISH request with a SIP 200 "OK" response to the SIP/IP Core A.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerA@networkA.net>
Server: PoC-serv/OMA1.0
Contact: <sip:PoC-ServerA@networkA.net>

8. SIP 200 "OK" response (from SIP/IP Core A to PoC Client A)

The SIP/IP A Core forwards the SIP 200 "OK" response to the PoC Client A.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerA@networkA.net>
Server: PoC-serv/OMA1.0
Contact: <sip:PoC-ServerA@networkA.net>

9. PoC Server A stores the PoC settings for PoC User A

PoC Server A stores the PoC settings for PoC User A from the body of the SIP PUBLISH request from step 6.

F.2 PoC Client initiates a Pre-established Session

PoC Client A initiates a Pre-established Session by sending a SIP INVITE request to a PoC Server performing the Participating PoC Function via SIP/IP Core. This flow is shown as in Figure 3 "PoC Client A initiates a Pre-established Session".

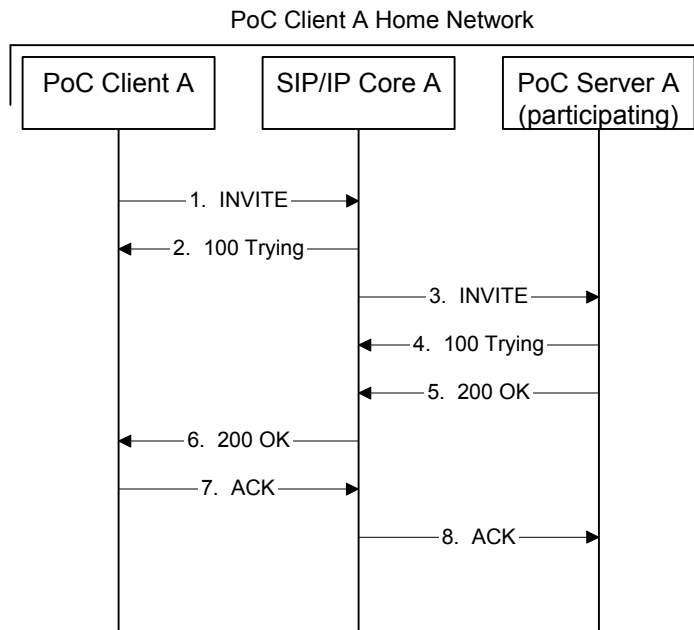


Figure 3: PoC Client A initiates a Pre-established Session

The steps of the flows are as follows:

1. SIP INVITE request (from PoC Client A to SIP/IP Core A)

The PoC Client A sends a SIP INVITE request with the Conference-factory-URI for the PoC service as the Request-URI to the SIP/IP Core A. The SIP INVITE request contains an SDP offer including necessary media parameters (e.g. PoC Client IP address, port number(s), supported codecs) and the Talk Burst Control Protocol.

If the PoC Client is not able or willing to receive media streams immediately then the PoC Client A sets the media to "inactive" when generating the SDP offer.

Request-URI	sip:PoC ConferenceFactoryURI.networkA.net
SIP HEADERS	
P-Preferred-Identity:	"PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact:	*;+g.poc.talkburst; require;explicit
User-Agent:	PoC-client/OMA1.0 Acme-Talk5000/v1.01
Privacy:	Id
Contact:	<sip: PoC-ClientA@networkA.net >;+g.poc.talkburst
Supported:	Timer
Session-Expires:	1800;refresher=uac
Allow:	INVITE,ACK,CANCEL,BYE,REFER,MESSAGE, SUBSCRIBE,NOTIFY, PUBLISH
SDP PARAMETERS	
c=	IN IP6 5555::aaa:bbb:ccc:ddd
m=	audio 3456 RTP/AVP 97
a=	rtpmap:97 AMR
a=	rtcp:5560
m=	application 2000 udp TBCP
a=	fntp:TBCP queuing=1; tb_priority=2; timestamp=1

2. SIP 100 "Trying" response (from SIP/IP A Core to PoC Client A)

The SIP/IP Core A indicates that it has received the SIP INVITE request by sending a 100 "Trying" provisional response.

3. SIP INVITE request (from SIP/IP Core A to PoC Server A)

The SIP/IP Core A forwards the SIP INVITE request to the PoC Server A performing the Participating PoC Function for PoC Client A according to the SIP/IP Core A routing principles.

Request-URI sip:PoC[ConferenceFactoryURI.networkA.net](#)

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *;+g.poc.talkburst; require;explicit

User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01

Privacy: Id

Contact: <sip:PoC-[ClientA@networkA.net](#)>;+g.poc.talkburst

Supported: Timer

Session-Expires: 1800;refresher=uac

Allow: INVITE,ACK,CANCEL,BYE,REFER,MESSAGE, SUBSCRIBE,NOTIFY,PUBLISH

SDP PARAMETERS

c= IN IP6 5555::aaa:bbb:ccc:ddd

m= audio 3456 RTP/AVP 97

a= rtpmap:97 AMR

a= rtp:5560

m= application 2000 udp TBCP

a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

4. SIP 100 "Trying" response (from PoC Server A to SIP/IP Core A)

The PoC Server A indicates that it has received the SIP INVITE request by sending a SIP 100"Trying" provisional response.

5. SIP 200 "OK" response (from PoC Server A to SIP/IP Core A)

The PoC Server A sends a SIP 200 "OK" as the final response to the SIP INVITE request via the SIP/IP Core A towards the PoC Client A to answer to the SDP offer. The SIP 200 "OK" response contains an SDP answer

including the accepted media parameters (e.g. Codecs, PoC Server IP address, port number(s), supported codecs) and the accepted Talk Burst Control Protocol.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerA@networkA.net>
Server: PoC-serv/OMA1.0
Contact <sip:Pre-establishedSessionIdentityA@PoC-ServerA.networkA.net>;+g.poc.talkburst
Require: Timer
Session-Expires: 1800;refresher=uac
Allow: INVITE,ACK,CANCEL,BYE,PRACK,REFER,MESSAGE, SUBSCRIBE, NOTIFY, PUBLISH

SDP PARAMETERS

c= IN IP6 57777::eee:fff:aaa:bbb
m= audio 57787 RTP/AVP 97
a= rtpmap:97 AMR
a= rtp:57000
m= application 57790 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

6. SIP 200 (OK) response (from SIP/IP Core A to PoC Client A)

The SIP/IP Core A forwards the SIP 200 "OK" to the PoC Client A. The PoC Client A stores the content of the Contact header as the Pre-established Session URI.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerA@networkA.net>
Server: PoC-serv/OMA1.0
Contact <sip:Pre-establishedSessionIdentityA@PoC-ServerA.networkA.net>;+g.poc.talkburst
Require: Timer
Session-Expires: 1800;refresher=uac
Allow: INVITE,ACK,CANCEL,BYE,PRACK,REFER,MESSAGE, SUBSCRIBE, NOTIFY, PUBLISH

SDP PARAMETERS

```
c=          IN IP6 57777::eee:fff:aaa:bbb
m=          audio 57787 RTP/AVP 97
a=          rtpmap:97 AMR
a=          rtcp:57000
m=          application 57790 udp TBCP
a=          fntp:TBCP queuing=1; tb_priority=2; timestamp=1
```

7. SIP ACK request (from PoC Client A to SIP/IP Core A)

The PoC Client A acknowledges the SIP 200 "OK" response with a SIP ACK request sent to the SIP/IP Core A.

8. SIP ACK request (from SIP/IP Core A to PoC Server A)

The SIP/IP Core A forwards the SIP ACK request to the PoC Server A.

F.3 Pre-established Session

F.3.1 Originating flow – Confirmed Indication

PoC Client A invites PoC Client B to a PoC Session by sending a SIP REFER request to the PoC Server. PoC Client A has created a Pre-established Session by using the mechanisms as shown in Figure 3 "*PoC Client A initiates a Pre-established Session*", and the PoC Client A has learned the URI that identifies this Session. This flow is as shown in Figure 4 "*PoC Client A invites another user to a Pre-established Session by sending a SIP REFER request to PoC Server A confirmed case*".

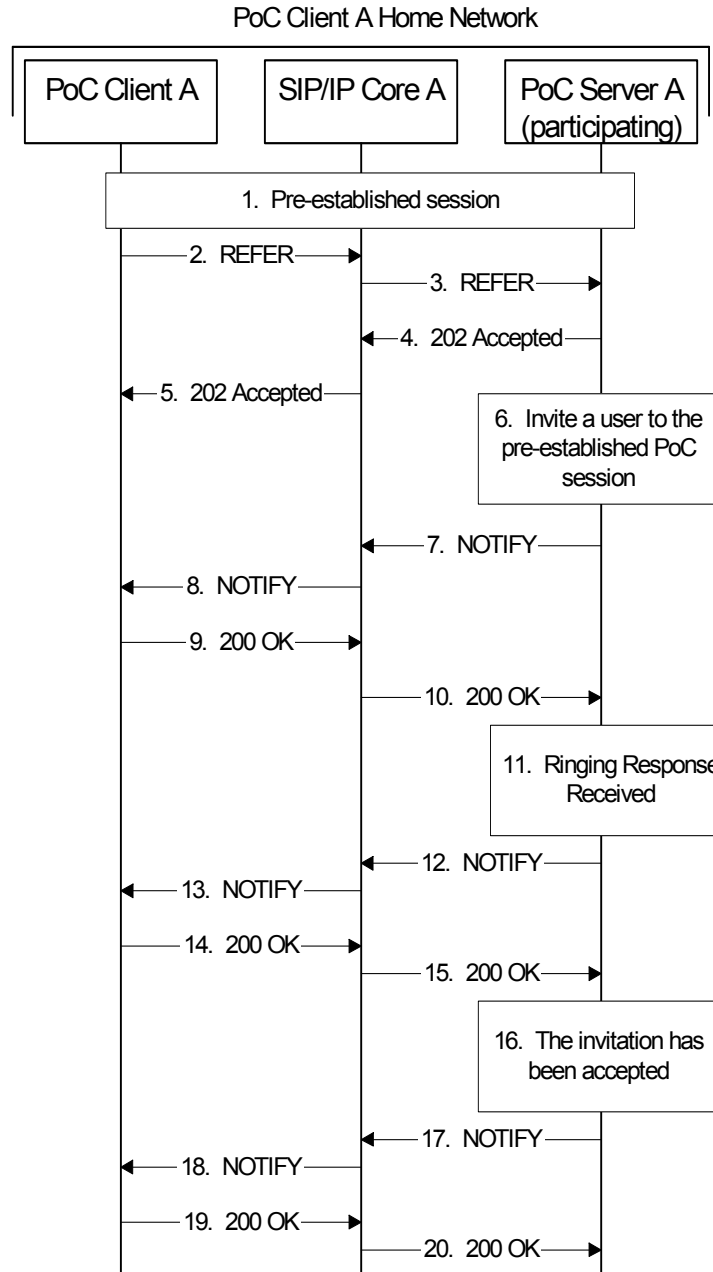


Figure 4: PoC Client A invites another user to a Pre-established Session by sending a SIP REFER request to PoC Server A

The steps of the flows are as follows:

1. PoC Client A creates a Pre-established Session

PoC Client A creates a Pre-established Session and learns its URI as shown in Figure 3 "PoC Client A initiates a Pre-established Session".

2. SIP REFER request (from PoC Client A to SIP/IP Core)

The PoC Client A invites the PoC Client B to the Pre-established Session.

Request-URI sip:Pre-establishedSessionIdentityA@PoC-ServerA.networkA.net

SIP HEADERS

Refer-To: <sip:PoC-UserB@networkB.net>

NOTE: The For a 1-1 PoC Session the SIP REFER request does not contain a body.

3. SIP REFER request (from SIP/IP A core to PoC Server A)

The SIP/IP core forwards the SIP REFER request to the PoC Server A performing the Participating PoC Function of the PoC Client A according to the SIP/IP Core A routing principles..

Request-URI sip:Pre-establishedSessionIdentityA@PoC-ServerA.networkA.net

SIP HEADERS

Refer-To: <sip:PoC-UserB@networkB.net>

4. SIP 202 "Accepted" response (from PoC Server A to SIP/IP core A)

The PoC Server A indicates that it has received the SIP REFER request by sending a SIP 202 "Accepted" response. This means that the PoC Server A has accepted the SIP REFER request and has started to process the request. This does not mean, however, that the PoC Client B (the referred-to resource) has been contacted.

5. SIP 202 "Accepted" response (from SIP/IP core A to PoC Client A)

The SIP/IP Core A forwards the response to the PoC Client A.

6. SIP INVITE request (from PoC Server A towards PoC Client B)

The PoC Server A invites the PoC User, who is indicated in the Refer-To header of the received SIP REFER request.

Request-URI sip:PoC-UserB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *;+g.poc.talkburst; require;explicit

User-Agent: PoC-serv/OMA1.0

Referred-By: "PoC User A" <sip:PoC-UserA@networkA.net>
Contact: <sip:PoC-ServerA@networkA.net;session=adhoc>;isfocus
Supported: 100rel,timer
Session-Expires: 1800;refresher=uas
Allow: INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,MESSAGE,
 SUBSCRIBE, NOTIFY, PUBLISH

SDP PARAMETERS

c= IN IP6 50555::ccc:ddd:aaa:bbb
m= audio 53456 RTP/AVP 97 98
a= rtpmap:97 AMR
a= rtpmap:98 EVRC/8000
a= rtcp:53080
m= Application 50000 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

7. SIP NOTIFY request (from PoC Server A to SIP/IP core A)

The PoC Server A sends a SIP NOTIFY request via the SIP/IP core A towards the PoC Client A to inform about the progress of the SIP REFER request processing. The body of the SIP NOTIFY request contains a fragment of the response as received by the notifying PoC Server A for the request that was initiated due to the SIP REFER request.

Request-URI sip:PoC-ClientA@networkA.net

SIP HEADERS

Event: refer
Subscription-State: active;expires=60
Content-Type: message/sipfrag

MIME BODY

SIP/2.0 100 TRYING

To: <sip:PoC-UserB@networkB.net>

Editor's Note: It is still for discussion whether the To header or P-Inserted-Identity header is to be included in the MIME Body when IMS is used.

8. SIP NOTIFY request (from SIP/IP Core to PoC Client A)

The SIP/IP core A forwards the SIP NOTIFY request to the PoC Client A.

Request-URI sip:PoC-ClientA@networkA.net

SIP HEADERS

Event: refer
Subscription-State: active;expires=60
Content-Type: message/sipfrag

MIME BODY

SIP/2.0 100 Trying

To: <sip:PoC-UserB@networkB.net>

9. SIP 200 "OK" response (from PoC Client A to SIP/IP core A)

The PoC Client A acknowledges the SIP NOTIFY request with a SIP 200 "OK" response to the SIP/IP core A.

10. SIP 200 "OK" response (from SIP/IP core A to PoC Server A)

The SIP/IP core A forwards the SIP 200 "OK" response to PoC Server A.

11. PoC Server A Receives Ringing Indication

PoC Server A receives a SIP 180 "Ringing" response.

12. SIP NOTIFY request (from PoC Server A to SIP/IP core A)

The PoC Server A sends a SIP NOTIFY request that indicates that the PoC Client B is being alerted.

Request-URI sip:PoC-ClientA@networkA.net

SIP HEADERS

Event: refer
Subscription-State: active;expires=60

Content-Type: message/sipfrag

MIME BODY

SIP/2.0 180 Ringing

To: <sip:PoC-UserB@networkB.net>

13. SIP NOTIFY request (from SIP/IP core A to PoC Client A)

The SIP/IP core A forwards the SIP NOTIFY request to the PoC Client A.

Request-URI sip:PoC-ClientA@networkA.net

SIP HEADERS

Event: refer

Subscription-State: active;expires=60

Content-Type: message/sipfrag

MIME BODY

SIP/2.0 180 Ringing

To: <sip:PoC-UserB@networkB.net>

14. SIP 200 "OK" response (from PoC Client A to SIP/IP core A)

The PoC Client A acknowledges the SIP NOTIFY request with a SIP 200 "OK" response to the SIP/IP core A.

15. SIP 200 "OK" response (from SIP/IP core A to PoC Server A)

The SIP/IP A core forwards the SIP 200 "OK" response to the PoC Server A.

16. Referred PoC User accepts the invitation to the PoC Session

The invitation sent towards the referred PoC User has been accepted and the PoC Client B has joined the PoC Session.

17. SIP NOTIFY request (from PoC Server A to SIP/IP core A)

The PoC Server A sends a SIP NOTIFY request that indicates that the PoC Client B is available and capable of receiving media.

Request-URI sip:PoC-ClientA@networkA.net

SIP HEADERS

Event: refer

Subscription-State: terminated

Content-Type: message/sipfrag

MIME BODY

SIP/2.0 200 OK

To: <sip:PoC-UserB@networkB.net>

P-Answer-State: Confirmed

18. SIP NOTIFY request (from SIP/IP core A to PoC Client A)

The SIP/IP core A forwards the SIP NOTIFY request to the PoC Client A.

Request-URI sip:PoC-ClientA@networkA.net

SIP HEADERS

Event: refer

Subscription-State: terminated

Content-Type: message/sipfrag

MIME BODY

SIP/2.0 200 OK

To: <sip:PoC-UserB@networkB.net>

P-Answer-State: Confirmed

19. SIP 200 "OK" response (from PoC Client A to SIP/IP core A)

The PoC Client A acknowledges the SIP NOTIFY request with a SIP 200 "OK" response to the SIP/IP core A.

20. SIP 200 "OK" response (from SIP/IP core A to PoC Server A)

The SIP/IP A core forwards the SIP 200 "OK" response to the PoC Server A.

F.3.2 Terminating flow

PoC Server X invites the PoC Client B to a PoC Session by sending a SIP INVITE request to the terminating SIP/IP core. The PoC Client B has created a Pre-established Session by using the mechanisms as shown in Figure 3 "PoC Client A initiates a Pre-established Session".

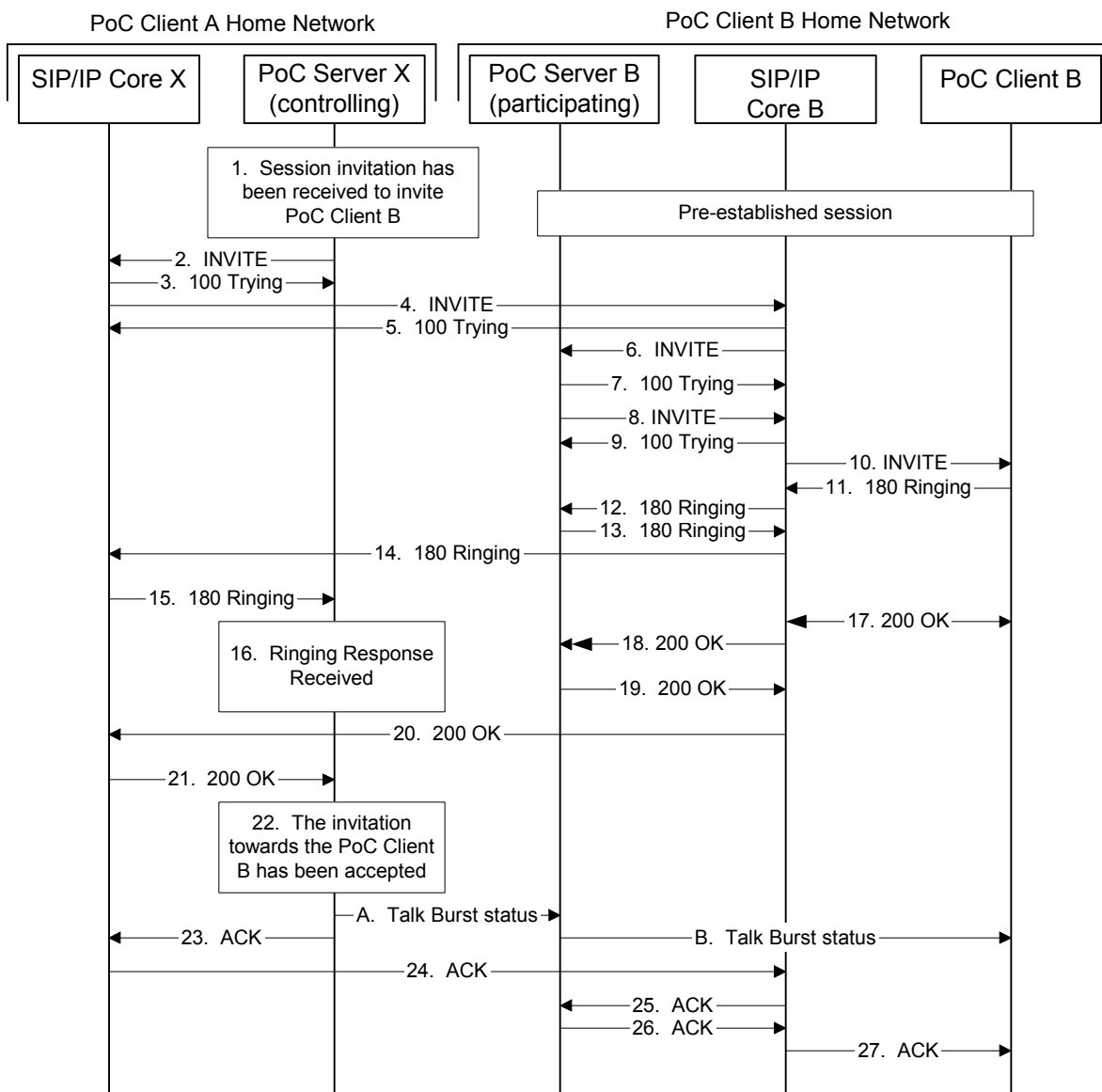


Figure 5: PoC Server X invites PoC Client B that has a Pre-established Session confirmed case manual answer

This flow shows a PoC Server X inviting a PoC User to a PoC Session. The flow is as shown in Figure 5 "PoC Server X invites PoC Client B that has a Pre-established Session confirmed case manual answer". The invitation may be as a result of another PoC User sending a SIP REFER request to the PoC Server X as shown in Figure 4 "PoC Client A invites another user to a Pre-established Session by sending a SIP REFER request to PoC Server A confirmed case". Note that the PoC

Server A as shown in Figure 4 "PoC Client A invites another user to a Pre-established Session by sending a SIP REFER request to PoC Server A confirmed case" has changed its role and acts as the PoC Server X in this flow.

The steps of the flows are as follows:

1. PoC Client A initiates a PoC Session

PoC Client A initiates a PoC Session as shown in Figure 4 "PoC Client A invites another user to a Pre-established Session by sending a SIP REFER request to PoC Server A confirmed case".

2. SIP INVITE request (PoC Server X to SIP/IP core X)

The PoC Server X invites the PoC Client B to a PoC Session. This may happen as a result of another PoC User referring the PoC Client B to the PoC Server X. The PoC Server X sends a SIP INVITE request as specified in subclause 7.2.2.2 "PoC Session invitation request" via the SIP/IP core X to the PoC Client B home network. The SIP INVITE request contains the an SDP offer with the media information (e.g Codecs, IP address and port number(s) of the PoC Server X) and the Talk Burst Control Protocol. In this example PoC Server X supports and offers both the AMR and EVRC codecs.

Request-URI	sip:PoC-UserB@networkB.net
SIP HEADERS	
P-Asserted-Identity:	"PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact:	*;+g.poc.talkburst; require;explicit
User-Agent:	PoC-serv/OMA1.0
Referred-By:	"PoC User A" <sip:PoC-UserA@networkA.net>
Contact:	<sip: PoC-ServerX@networkX.net ; sessiontype=1-1>;isfocus
Supported:	100rel,timer
Session-Expires:	1800;refresher=uas
Allow:	INVITE,ACK,CANCEL,BYE,PRACK,REFER,MESSAGE, SUBSCRIBE, NOTIFY, PUBLISH
SDP PARAMETERS	
c=	IN IP6 50555::ccc:ddd:aaa:bbb
m=	audio 53456 RTP/AVP 97 98
a=	rtpmap:97 AMR
a=	rtpmap:98 EVRC/8000
a=	rtp:53080
m=	Application 50000 udp TBCP
a=	fmp: TBCP queuing=1; tb_priority=2; timestamp=1

Editor's Note: It is still for discussion the use of the sessiontype URI parameter.

3. SIP 100 "Trying" response (SIP/IP core X to PoC Server X)

The SIP/IP core X responds to the SIP INVITE request with a SIP 100 "Trying" provisional response.

4. SIP INVITE request (SIP/IP core X to SIP/IP core B)

The SIP/IP core X resolves the SIP/IP core B address of the PoC Client B and forwards the SIP INVITE request to the SIP/IP core B.

Request-URI sip:PoC-UserB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *;+g.poc.talkburst; require;explicit

User-Agent: PoC-serv/OMA1.0

Referred-By: "PoC User A" <sip:PoC-UserA@networkA.net>

Contact: <sip:[PoC-ServerX@networkX.net](#); sessiontype=1-1>;isfocus

Supported: 100rel,timer

Session-Expires: 1800;refresher=uas

Allow: INVITE,ACK,CANCEL,BYE,PRACK,REFER,MESSAGE, SUBSCRIBE, NOTIFY, PUBLISH

SDP PARAMETERS

c= IN IP6 50555::ccc:ddd:aaa:bbb

m= audio 53456 RTP/AVP 97 98

a= rtpmap:97 AMR

a= rtpmap:98 EVRC/8000

a= rtcp:53080

m= application 50000 udp TBCP

a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

5. SIP 100 "Trying" response (SIP/IP core B to SIP/IP core X)

The SIP/IP core B responds to the SIP INVITE request with a SIP 100 "Trying" provisional response.

6. SIP INVITE request (SIP/IP core B to PoC Server B)

The SIP/IP core B forwards the SIP INVITE request to the PoC Server B.

Request-URI sip:PoC-UserB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *;+g.poc.talkburst; require;explicit

User-Agent: PoC-serv/OMA1.0

Referred-By: "PoC User A" <sip:PoC-UserA@networkA.net>

Contact: <sip:[PoC-ServerX@networkX.net](#); sessiontype=1-1>; isfocus

Supported: 100rel,timer

Session-Expires: 1800;refresher=uas

Allow: INVITE,ACK,CANCEL,BYE,PRACK,REFER,MESSAGE, SUBSCRIBE, NOTIFY, PUBLISH

SDP PARAMETERS

c= IN IP6 50555::ccc:ddd:aaa:bbb

m= audio 53456 RTP/AVP 97 98

a= rtpmap:97 AMR

a= rtpmap:98 EVRC/8000

a= rtcp:53080

m= application 50000 udp TBCP

a= fntp:TBCP queuing=1; tb_priority=2; timestamp=1

7. SIP 100 "Trying" response (PoC Server B to SIP/IP core B)

The PoC Server B responds to the SIP INVITE request with a SIP 100 "Trying" provisional response.

8. SIP INVITE request (from PoC Server B to SIP/IP core B)

The PoC Server B receives the SIP INVITE request, identifies that manual answer is set for PoC Client B and that the PoC Client B has already a Pre-established Session established. PoC Server B sends a SIP INVITE request to SIP/IP core B within the same dialog as the Pre-established Session.

Request-URI sip:PoC-ClientB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Contact: <sip:PoC-ServerX@PoC_ServerB.networkB.net;session=1-1>

Supported: timer

Session-Expires: 1800;refresher=uas

P-Alerting-Mode: Manual

SDP PARAMETERS

c= IN IP6 60333::ddd:ccc:aaa:bbb

m= audio 63776 RTP/AVP 98

a= rtpmap:98 EVRC/8000

a= rtcp:63090

m= Application 60000 udp TBCP

a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

9. SIP 100 "Trying" response (from SIP/IP core B to PoC Server B)

SIP/IP core B sends a SIP 100 "Trying" response to PoC Server B.

10. SIP INVITE request (from SIP/IP core B to PoC Client B)

SIP/IP core B forwards the SIP INVITE request to PoC Client B.

Request-URI sip:PoC-ClientB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Contact: <sip:PoC-ServerX@PoC_ServerB.networkB.net;session=1-1>

Supported: timer

Session-Expires: 1800;refresher=uas

P-Alerting-Mode: Manual

SDP PARAMETERS

c= IN IP6 60333::ddd:ccc:aaa:bbb
m= audio 63776 RTP/AVP 98
a= rtpmap:98 EVRC/8000
a= rtcp:63090
m= Application 60000 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

11. SIP 180 "Ringing" response (from PoC Client B to SIP/IP core B)

PoC Client B sends a SIP 180 "Ringing" response to SIP/IP core B. Since the 180 Ringing is sent within the existing Pre-established Session dialog no PoC Application values are included in the headers

12. SIP 180 "Ringing" response (from SIP/IP core B to PoC Server B)

SIP/IP core B forwards the SIP 180 "Ringing" response to PoC Server B. Since the 180 Ringing is sent within the existing Pre-established Session dialog no PoC Application values are included in the headers

13. SIP 180 "Ringing" response (from PoC Server B to SIP/IP core B)

PoC Server B sends a SIP 180 "Ringing" response to SIP/IP core B.

SIP HEADERS

P-Asserted-Identity: "PoC User B" <sip:PoC-UserB@networkB.net>
Server: PoC-serv/OMA1.0
Contact: <sip:PoC-ServerB@networkB.net>
Allow: INVITE,ACK,CANCEL,BYE,REFER,PRACK, UPDATE, MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

14. SIP 180 "Ringing" response (from SIP/IP core B to SIP/IP core X)

SIP/IP core B forwards the SIP 180 "Ringing" response to SIP/IP core X.

SIP HEADERS

P-Asserted-Identity: "PoC User B" <sip:PoC-UserB@networkB.net>
Server: PoC-serv/OMA1.0
Contact: <sip:PoC-ServerB@networkB.net>
Allow: INVITE,ACK,CANCEL,BYE, PRACK, UPDATE, REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

15. SIP 180 "Ringing" response (from SIP/IP core X to PoC Server X)

SIP/IP core X forwards the SIP 180 "Ringing" response to PoC Server A&X.

SIP HEADERS

P-Asserted-Identity: "PoC User B" <sip:PoC-UserB@networkB.net>
Server: PoC-serv/OMA1.0
Contact: <sip:PoC-ServerB@networkB.net>
Allow: INVITE,ACK,CANCEL,BYE, PRACK, UPDATE, REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

16. Ringing response has been received

The PoC Server X sends a notification towards the PoC Client A that the Invited PoC User is being alerted.

17. SIP 200 "OK" response (from PoC Client B to SIP/IP core B)

PoC Client B sends a SIP 200 "OK" response to SIP/IP core B.

SIP HEADERS

Require: timer
Session-Expires: 1800;refresher=uas

SDP PARAMETERS

c= IN IP6 75555::eee:aaa:fff:bbb
m= audio 75575 RTP/AVP 98
a= rtpmap:98 EVRC/8000
a= rtcp:75000
m= application 75590 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2;timestamp=1

18. SIP 200 "OK" response (from SIP/IP core B to PoC Server B)

SIP/IP core B forwards the SIP 200 "OK" response to PoC Server B.

SIP HEADERS

Require: timer
Session-Expires: 1800;refresher=uas

SDP PARAMETERS

c= IN IP6 75555::eee:aaa:fff:bbb
m= audio 75575 RTP/AVP 98
a= rtpmap:98 EVRC/8000
a= rtcp:75000
m= application 75590 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

19. SIP 200 "OK" response (PoC Server B to SIP/IP core B)

PoC Server B forwards the SIP 200 "OK" response to SIP/IP Core B.

SIP HEADERS

Require: timer
Session-Expires: 1800;refresher=uas
P-Answer-State: Confirmed

SDP PARAMETERS

c= IN IP6 99055::fff:aaa:eee:bbb
m= audio 99006 RTP/AVP 98
a= rtpmap:98 EVRC/8000
a= rtcp:90000
m= application 90000 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

20. SIP 200 "OK" response (SIP/IP core B to SIP/IP core X)

The SIP/IP core B forwards the SIP 200 "OK" final response to the SIP/IP core X.

SIP HEADERS

Require: timer
Session-Expires: 1800;refresher=uas
P-Answer-State: Confirmed

SDP PARAMETERS

c= IN IP6 99055::fff:aaa:eee:bbb
m= audio 99006 RTP/AVP 98
a= rtpmap:98 EVRC/8000
a= rtcp:90000
m= application 90000 udp TBCP
a= ftmp:TBCP queuing=1; tb_priority=2; timestamp=1

21. SIP 200 "OK" response (SIP/IP core X to PoC Server X)

The SIP/IP core X forwards the SIP 200 "OK" response to the PoC Server X.

SIP HEADERS

Require: timer
Session-Expires: 1800;refresher=uas
P-Answer-State: Confirmed

SDP PARAMETERS

c= IN IP6 99055::fff:aaa:eee:bbb
m= audio 99006 RTP/AVP 97
a= rtpmap:97 AMR
a= rtcp:90000
m= application 90000 udp TBCP
a= ftmp:TBCP queuing=1; tb_priority=2; timestamp=1

22. The invitation towards the PoC Client B has been accepted

The PoC Server X sends a notification towards the PoC Client A that the Invited PoC User is available and capable of receiving the media.

23. SIP ACK request (PoC Server X to SIP/IP core X)

The PoC Server X acknowledges the SIP 200 "OK" response with a SIP ACK request sent to the SIP/IP core X.

24. SIP ACK request (SIP/IP core X to SIP/IP core B)

The SIP/IP core X forwards the SIP ACK request to the SIP/IP core B.

25. SIP ACK request (SIP/IP core B to PoC Server B)

The SIP/IP core B forwards the SIP ACK request to the PoC Server B.

26. SIP ACK request (PoC Server B to SIP/IP core B)

The PoC Server B forwards the SIP ACK request to the SIP/IP core B.

27. SIP ACK request (SIP/IP core B to PoC Client B)

The SIP/IP core B forwards the SIP ACK request to the PoC Client B.

A. TBCP Talk Burst status (PoC Server X to PoC Server B)

The PoC Server X informs the Talk Burst status to the PoC Server B.

B. TBCP Talk Burst status (PoC Server B to PoC Client B)

The PoC Server B informs the Talk Burst status to the PoC Client B.

F.3.3 Originating flow - Unconfirmed Indication

PoC Client A invites PoC Client B to a PoC Session by sending a SIP REFER request to the PoC Server. PoC Client A has created a Pre-established Session as shown in Figure 3 "*PoC Client initiates a Pre-established Session*", and the PoC Client A has learned the URI that identifies this Session. This flow is as shown in Figure 6 "*PoC Client A invites another user to a Pre-established Session by sending a SIP REFER request to PoC Server A unconfirmed case*".

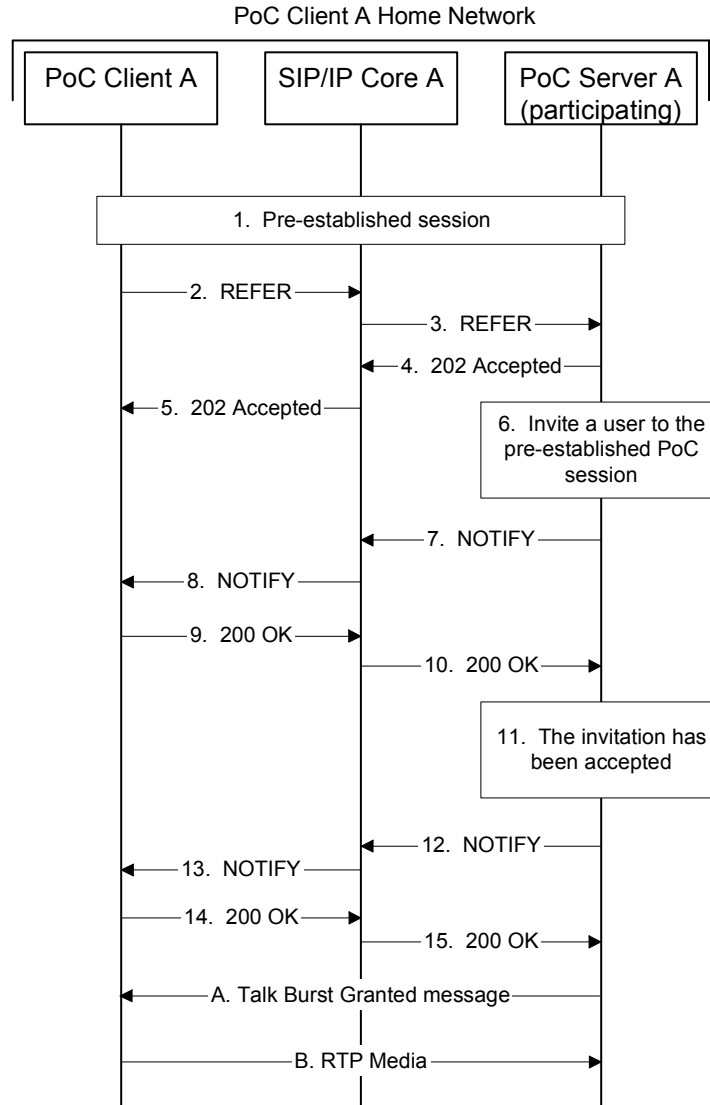


Figure 6: PoC Client A invites another PoC User to a Pre-established Session by sending a SIP REFER request to PoC Server A unconfirmed case

The steps of the flows are as follows:

1. PoC Client A creates a Pre-established Session

PoC Client A creates a Pre-established Session and learns its URI as shown in Figure 3 "PoC Client initiates a Pre-established Session".

2. SIP REFER request (from PoC Client A to SIP/IP Core)

The PoC Client A invites the PoC Client B to the Pre-established Session.

The SIP REFER request does not contain a body.

Request-URI sip:Pre-establishedSessionIdentityA@PoC-ServerA.networkA.net

SIP HEADERS

Refer-To: <sip:PoC-UserB@networkB.net>

Privacy: id
P-Alerting-Mode: MAO

NOTE: For a 1-1 PoC Session the SIP REFER request does not contain a body.

3. SIP REFER request (from SIP/IP A Core to PoC Server A)

The SIP/IP Core forwards the SIP REFER request to the PoC Server A performing the Participating PoC Function of the PoC Client A according to the SIP/IP Core A routing principles.

Request-URI sip:[Pre-establishedSessionIdentityA@PoC-ServerA.networkA.net](#)

SIP HEADERS

Refer-To: <sip:PoC-UserB@networkB.net >
Privacy: id
P-Alerting-Mode: MAO

4. SIP 202 "Accepted" response (from PoC Server A to SIP/IP Core A)

The PoC Server A indicates that it has received the SIP REFER request by sending a SIP 202 "Accepted" response. This means that the PoC Server A has accepted the SIP REFER request and has started to process the request. This does not mean, however, that the PoC Client B (the referred-to resource) has been contacted.

5. SIP 202 "Accepted" response (from SIP/IP Core A to PoC Client A)

The SIP/IP Core A forwards the response to the PoC Client A.

6. SIP INVITE request (from PoC Server A towards PoC Client B)

The PoC Server A invites the PoC User, who is indicated in the Refer-To header of the received SIP REFER request.

Request-URI sip:PoC-UserB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *,+g.poc.talkburst; require;explicit
User-Agent: PoC-serv/OMA1.0
Privacy: id
Referred-By: "PoC User A" <sip:PoC-UserA@networkA.net>
Contact: <sip:[PoC-](#)

ServerA@networkA.net;session=adhoc>;isfocus;+g.poc.talkburst

Supported: 100rel,timer
Session-Expires: 1800;refresher=uas
Allow: INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,MESSAGE,
 SUBSCRIBE, NOTIFY, PUBLISH
P-Alerting-Mode: MAO

SDP PARAMETERS

c= IN IP6 50555::ccc:ddd:aaa:bbb
m= audio 53456 RTP/AVP 97 98
a= rtpmap:97 AMR
a= rtpmap:98 EVRC/8000
a= rtcp:53080
m= Application 50000 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

7. SIP NOTIFY request (from PoC Server A to SIP/IP Core A)

The PoC Server A sends a SIP NOTIFY request via the SIP/IP Core A towards the PoC Client A to inform about the progress of the SIP REFER request processing. The body of the SIP NOTIFY request contains a fragment of the response as received by the notifying PoC Server A for the request that was initiated due to the SIP REFER request.

Request-URI sip:PoC-ClientA@networkA.net

SIP HEADERS

Event: refer
Subscription-State: active;expires=60
Content-Type: message/sipfrag

MIME BODY

SIP/2.0 100 TRYING

To: <sip:PoC-UserB@networkB.net>

P-Asserted-Identity "PoC User B" <sip:PoC-UserB@networkB.net>

8. SIP NOTIFY request (from SIP/IP Core to PoC Client A)

The SIP/IP Core A forwards the SIP NOTIFY request to the PoC Client A.

Request-URI sip:PoC-ClientA@networkA.net

SIP HEADERS

Event: refer
Subscription-State: active;expires=60
Content-Type: message/sipfrag

MIME BODY

SIP/2.0 100 OK

To: <sip:PoC-UserB@networkB.net>

9. SIP 200 "OK" response (from PoC Client A to SIP/IP Core A)

The PoC Client A acknowledges the SIP NOTIFY request with a SIP 200 "OK" response to the SIP/IP Core A.

10. SIP 200 "OK" response (from SIP/IP Core A to PoC Server A)

The SIP/IP Core A forwards the SIP 200 "OK" response to PoC Server A.

11. Referred PoC User accepts the invitation to the PoC Session

The invitation sent towards the referred PoC User has been accepted and the PoC Client B has joined the PoC Session.

12. SIP NOTIFY request (from PoC Server A to SIP/IP Core A)

The PoC Server A sends a SIP NOTIFY request that indicates that the PoC Client B is available and capable of receiving media.

Request-URI sip:PoC-ClientA@networkA.net

SIP HEADERS

Event: refer
Subscription-State: terminated
Content-Type: message/sipfrag

MIME BODY

SIP/2.0 200 OK

To: <sip:PoC-UserB@networkB.net>

P-Asserted-Identity "PoC User B" <sip:PoC-UserB@networkB.net>

P-Answer-State: Unconfirmed

13. SIP NOTIFY request (from SIP/IP Core A to PoC Client A)

The SIP/IP Core A forwards the SIP NOTIFY request to the PoC Client A.

Request-URI sip:PoC-ClientA@networkA.net

SIP HEADERS

Event: refer
 Subscription-State: terminated
 Content-Type: message/sipfrag

MIME BODY

SIP/2.0 200 OK
 To: <sip:PoC-UserB@networkB.net>
 P-Asserted-Identity "PoC User B" <sip:PoC-UserB@networkB.net>
 P-Answer-State: Unconfirmed

14. SIP 200 "OK" response (from PoC Client A to SIP/IP Core A)

The PoC Client A acknowledges the SIP NOTIFY request with a SIP 200 "OK" response to the SIP/IP Core A.

15. SIP 200 "OK" response (from SIP/IP Core A to PoC Server A)

The SIP/IP A Core forwards the SIP 200 "OK" response to the PoC Server A.

A. TBCP Talk Burst Granted message (from PoC Server A to PoC Client A)

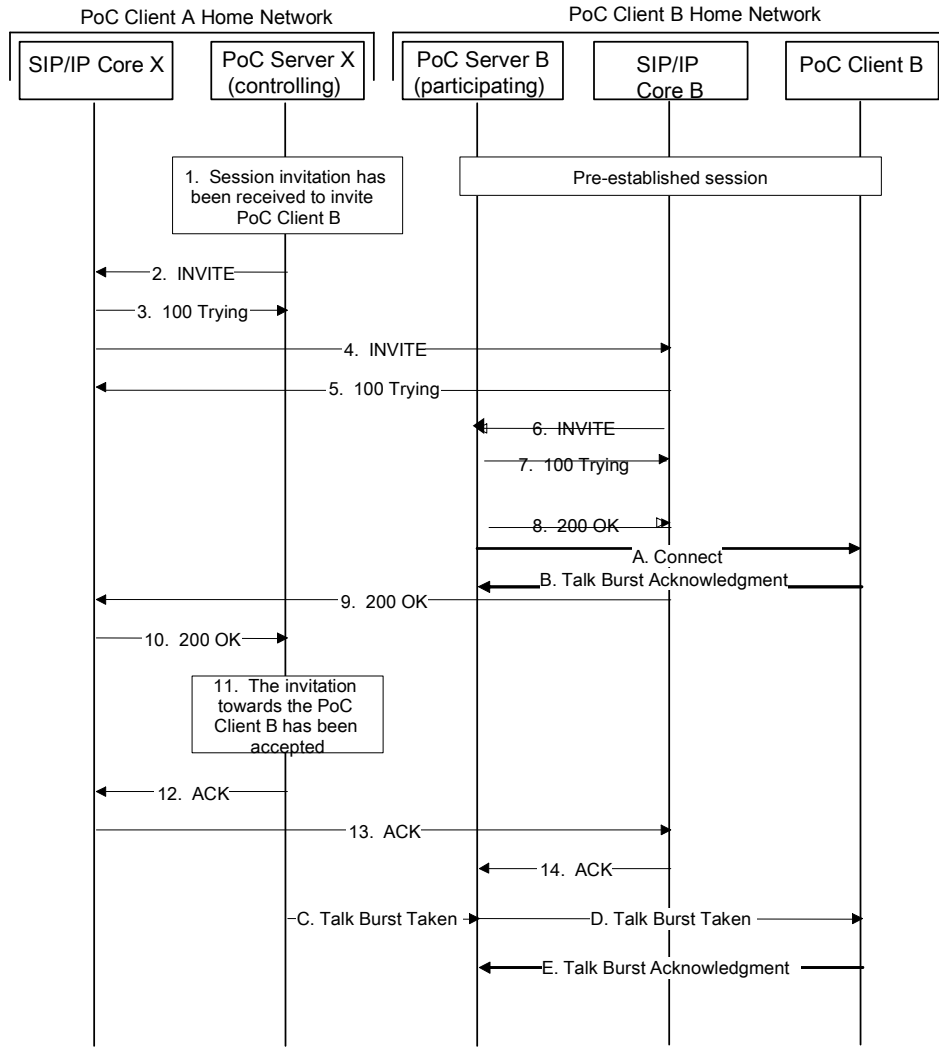
The PoC Server X sends a TBCP Talk Burst Granted message (other alternatives are TBCP Talk Burst Deny message or TBCP Talk Burst Idle message) to the PoC Server A.

B. RTP Media from PoC Client A to PoC Server A

The PoC Client A sends the RTP Media to the PoC Server A.

F.3.4 Terminating flow – Unconfirmed Indication

PoC Server X invites the PoC Client B to a PoC Session by sending a SIP INVITE request to the terminating SIP/IP Core. The PoC Client B has created a Pre-established Session as shown in Figure 3 "*PoC Client A initiates a Pre-established Session*".



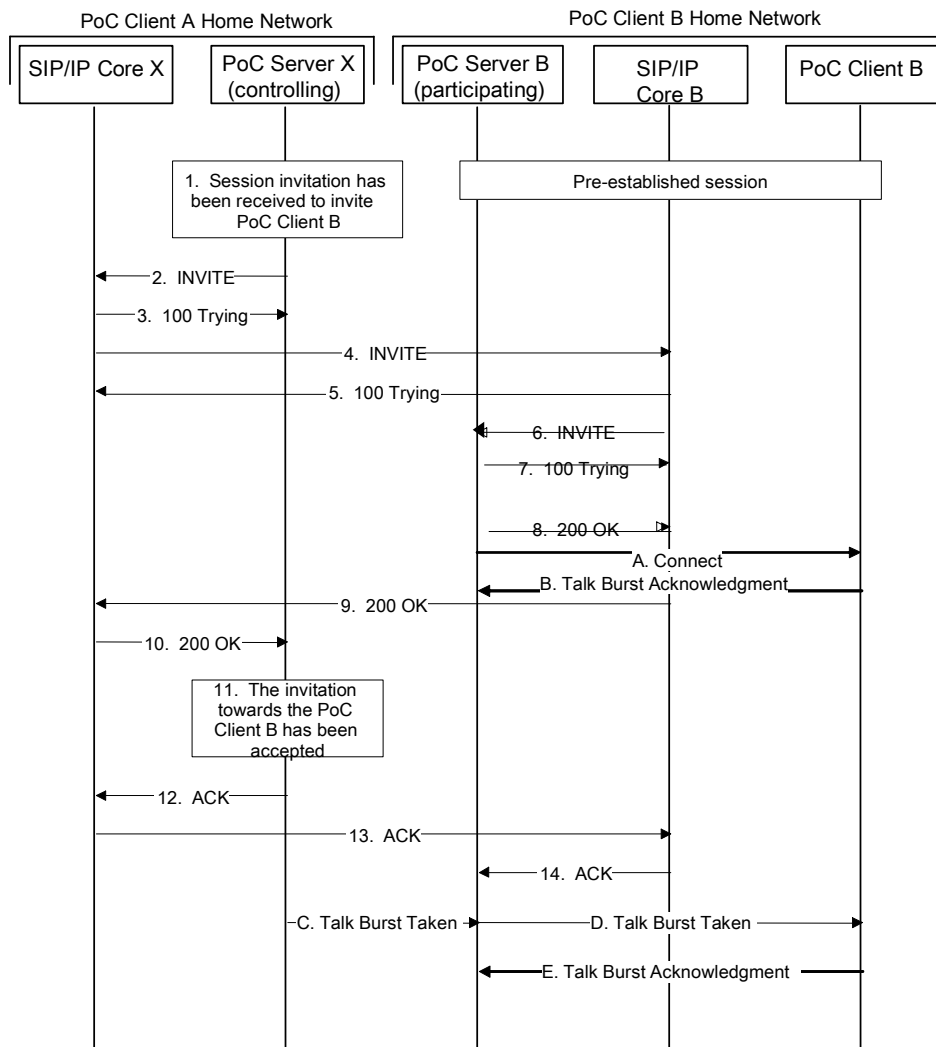


Figure 7: PoC Session invitation with automatic answer – Pre-established Session case.

This flow shows a PoC Server X inviting a PoC User to a PoC Session. The flow is as shown in Figure 7 "PoC Session invitation with automatic answer – Pre-established Session case". The invitation may be as a result of another PoC User sending a SIP REFER request to the PoC Server X as shown in Figure 6. "PoC Client A invites another user to a Pre-established Session by sending a SIP REFER request to PoC Server A". Note that the PoC Server A as shown in Figure 6. "PoC Client A invites another user to a Pre-established Session by sending a SIP REFER request to PoC Server A" has changed its role and acts as the PoC Server X in this flow.

The steps of the flows are as follows:

1. PoC Client A initiates a PoC Session

PoC Client A initiates a PoC Session as as shown in Figure 4. "PoC Session invitation with automatic answer – Pre-established Session case".

2. SIP INVITE request (PoC Server X to SIP/IP Core X)

The PoC Server X invites the PoC Client B to a PoC Session. This may happen as a result of another PoC User referring the PoC Client B to the PoC Server X. The PoC Server X sends a SIP INVITE request via the SIP/IP Core X to the PoC Client B home network. The SIP INVITE request contains an SDP offer with the media

information (e.g IP address and port number(s)) of the PoC Server X) and the Talk Burst Control Protocol. In this example PoC Server X supports and offers both the AMR and EVRC codecs.

Request-URI sip:PoC-UserB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *;+g.poc.talkburst; require;explicit

User-Agent: PoC-serv/OMA1.0

Privacy: id

Referred-By: "PoC User A" <sip:PoC-UserA@networkA.net>

Contact: <sip:[PoC-ServerX@networkX.net](#); sessiontype=1-1>;isfocus;+g.poc.talkburst

Supported: 100rel,timer

Session-Expires: 1800;refresher=uas

Allow: INVITE,ACK,CANCEL,BYE,PRACK,REFER,MESSAGE, SUBSCRIBE, NOTIFY, PUBLISH

P-Alerting-Mode: MAO

SDP PARAMETERS

c= IN IP6 50555::ccc:ddd:aaa:bbb

m= audio 53456 RTP/AVP 97 98

a= rtpmap:97 AMR

a= rtpmap:98 EVRC/8000

a= rtcp:53080

m= Application 50000 udp TBCP

a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

3. SIP 100 "Trying" response (SIP/IP Core X to PoC Server X)

The SIP/IP Core X responds to the SIP INVITE request with a SIP 100 "Trying" provisional response.

4. SIP INVITE request (SIP/IP Core X to SIP/IP Core B)

The SIP/IP Core X resolves the SIP/IP Core B address of the PoC Client B and forwards the SIP INVITE request to the SIP/IP Core B.

Request-URI sip:PoC-UserB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *;+g.poc.talkburst; require;explicit
User-Agent: PoC-serv/OMA1.0
Privacy: id
Referred-By: "PoC User A" <sip:PoC-UserA@networkA.net>
Contact: <sip:PoC-ServerX@networkX.net; sessiontype=1-1>;isfocus;+g.poc.talkburst
Supported: 100rel,timer
Session-Expires: 1800;refresher=uas
Allow: INVITE,ACK,CANCEL,BYE,PRACK,REFER,MESSAGE, SUBSCRIBE, NOTIFY, PUBLISH
P-Alerting-Mode: MAO

SDP PARAMETERS

c= IN IP6 50555::ccc:ddd:aaa:bbb
m= audio 53456 RTP/AVP 97 98
a= rtpmap:97 AMR
a= rtpmap:98 EVRC/8000
a= rtcp:53080
m= application 50000 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

5. SIP 100 "Trying" response (SIP/IP Core B to SIP/IP Core X)

The SIP/IP Core B responds to the SIP INVITE request with a SIP 100 "Trying" provisional response.

6. SIP INVITE request (SIP/IP Core B to PoC Server B)

The SIP/IP Core B forwards the SIP INVITE request to the PoC Server B.

Request-URI sip:PoC-UserB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *;+g.poc.talkburst; require;explicit
User-Agent: PoC-serv/OMA1.0

Privacy: id
Referred-By: "PoC User A" <sip:PoC-UserA@networkA.net>
Contact: <sip:PoC-ServerX@networkX.net; sessiontype=1-1>;
 isfocus;+g.poc.talkburst
Supported: 100rel,timer
Session-Expires: 1800;refresher=uas
Allow: INVITE,ACK,CANCEL,BYE,PRACK,REFER,MESSAGE,
 SUBSCRIBE, NOTIFY, PUBLISH
P-Alerting-Mode: MAO

SDP PARAMETERS

c= IN IP6 50555::ccc:ddd:aaa:bbb
m= audio 53456 RTP/AVP 97 98
a= rtpmap:97 AMR
a= rtpmap:98 EVRC/8000
a= rtcp:53080
m= application 50000 udp TBCP
a= fmp:TBCP queuing=1; tb_priority=2; timestamp=1

7. SIP 100 "Trying" response (PoC Server B to SIP/IP Core B)

The PoC Server B responds to the SIP INVITE request with a SIP 100 "Trying" provisional response.

8. SIP 200 "OK" response (PoC Server B to SIP/IP Core B)

The PoC Server B receives the SIP INVITE request, identifies that auto answer is defined for the PoC Client B and that the PoC Client B has already a Pre-established Session established. Therefore the PoC Server B sends a SIP 200 "OK" final response to the SIP INVITE request to the SIP/IP Core B. The SIP 200 "OK" response is sent along the signalling path. The SIP 200 "OK" response contains the SDP answer including the accepted media information (e.g. Codecs, IP address and port number(s) of the PoC Server B) and accepted Talk Burst Control Protocol. In this example PoC Server B knows that PoC Client B only supports the EVRC codec and so only returns EVRC in the SDP answer and PoC Server B uses the same port for RTCP and the Talk Burst Control Protocol.

SIP HEADERS

P-Asserted-Identity: "PoC User B" <sip:PoC-UserB@networkB.net>
Require: timer
Server: PoC-serv/OMA1.0
Contact: <sip:PoC-ServerB@networkB.net>;+g.poc.talkburst
Session-Expires: 1800;refresher=uas

P-Answer-State: Unconfirmed

Allow: INVITE,ACK,CANCEL,BYE,PRACK,REFER,MESSAGE,
SUBSCRIBE, NOTIFY, PUBLISH

SDP PARAMETERS

c= IN IP6 99055::fff:aaa:eee:bbb

m= audio 99006 RTP/AVP 98

a= rtpmap:98 EVRC/8000

a= rtcp:90000

m= application 90000 udp TBCP

a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

A. TBCP Connect message (PoC Server B to PoC Client B)

In order to inform about the invitation to a PoC Session the PoC Server B sends the TBCP Connect to the PoC Client B. The message includes the PoC Session Identity.

B TBCP Talk Burst Acknowledgement (PoC Client B to PoC Server)

The PoC Client B acknowledges the reception of the TBCP Connect message.

9. SIP 200 "OK" response (SIP/IP Core B to SIP/IP Core X)

The SIP/IP Core B forwards the SIP 200 "OK" final response to the SIP/IP Core X.

SIP HEADERS

P-Asserted-Identity: "PoC User B" <sip:PoC-UserB@networkB.net>

Require: timer

Server: PoC-serv/OMA1.0

Contact: <sip:PoC-ServerB@networkB.net>;+g.poc.talkburst

Session-Expires: 1800;refresher=uas

P-Answer-State: Unconfirmed

Allow: INVITE,ACK,CANCEL,BYE,PRACK,REFER,MESSAGE,
SUBSCRIBE, NOTIFY, PUBLISH

SDP PARAMETERS

c= IN IP6 99055::fff:aaa:eee:bbb

```

m=          audio 99006 RTP/AVP 98
a=          rtpmap:98 EVRC/8000
a=          rtcp:90000
m=          application 90000 udp TBCP
a=          fmp: TBCP queuing=1; tb_priority=2; timestamp=1

```

10. SIP 200 "OK" response (SIP/IP Core X to PoC Server X)

The SIP/IP Core X forwards the SIP 200 "OK" response to the PoC Server X.

SIP HEADERS

```

P-Asserted-Identity: "PoC User B"<sip:PoC-UserB@networkB.net>
Require:            timer
Server:             PoC-serv/OMA1.0
Contact:            <sip:PoC-ServerB@networkB.net>;+g.poc.talkburst
Session-Expires:   1800;refresher=uas
P-Answer-State:    Unconfirmed
Allow:              INVITE,ACK,CANCEL,BYE,PRACK,REFER,MESSAGE,
                   SUBSCRIBE, NOTIFY, PUBLISH

```

SDP PARAMETERS

```

c=          IN IP6 99055::fff:aaa:eee:bbb
m=          audio 99006 RTP/AVP 97
a=          rtpmap:97 AMR
a=          rtcp:90000
m=          application 90000 udp TBCP
a=          fmp: TBCP queuing=1; tb_priority=2; timestamp=1

```

11. The invitation towards the PoC Client B has been accepted

The PoC Server X sends a notification towards the PoC Client A that the Invited PoC User is available and capable of receiving the media.

12. SIP ACK request (PoC Server X to SIP/IP Core X)

The PoC Server X acknowledges the SIP 200 "OK" response with a SIP ACK request sent to the SIP/IP Core X.

13. SIP ACK request (SIP/IP Core X to SIP/IP Core B)

The SIP/IP Core X forwards the SIP ACK request to the SIP/IP Core B.

14. SIP ACK request (SIP/IP Core B to PoC Server B)

The SIP/IP Core B forwards the SIP ACK request to the PoC Server B.

C. TBCP Talk Burst Taken (PoC Server X to PoC Server B)

The PoC Server X sends the TBCP Talk Burst Taken to the PoC Server B. Unless privacy is required the TBCP Talk Burst Taken message includes the Talker Identity.

D. TBCP Talk Burst Taken (PoC Server B to PoC Client B)

The PoC Server B sends the TBCP Talk Burst Taken to the PoC Client B. Unless privacy is required the TBCP Talk Burst Taken message includes the Talker Identity. The PoC Server B includes a request to acknowledge the message.

E. TBCP Talk Burst Acknowledgement message (PoC Client B to PoC Server B)

The PoC Client acknowledges the reception of the TBCP Talk Burst Taken message.

F.4 Ad-hoc and 1-1 PoC Session establishment On-demand Session

F.4.1 Originating flow – Unconfirmed Indication

The signaling sequences in this subclause show the establishment of the Ad-hoc PoC Session using on-demand signaling in the originating side. As a prerequisite for the on-demand signaling, PoC Client needs to be registered.

This flow shows the signaling sequence for the unconfirmed case. In this case a SIP 183 “Session Progress” response is received from the terminating side before a SIP 200 “OK” response is sent, PoC Server performing the Controlling PoC Function, sends a SIP 200 "OK" response to the PoC Client. In this flow the media buffering is supported and the TBCP Talk Burst Granted is sent after the SIP 183 “Session Progress” is received. If buffering is not supported the TBCP Talk Burst Granted is sent after the SIP 200 “OK” is received. The flow is as shown in Figure 8 *"Ad-hoc PoC Session establishment on the originating side using on-demand signaling, unconfirmed case"*.

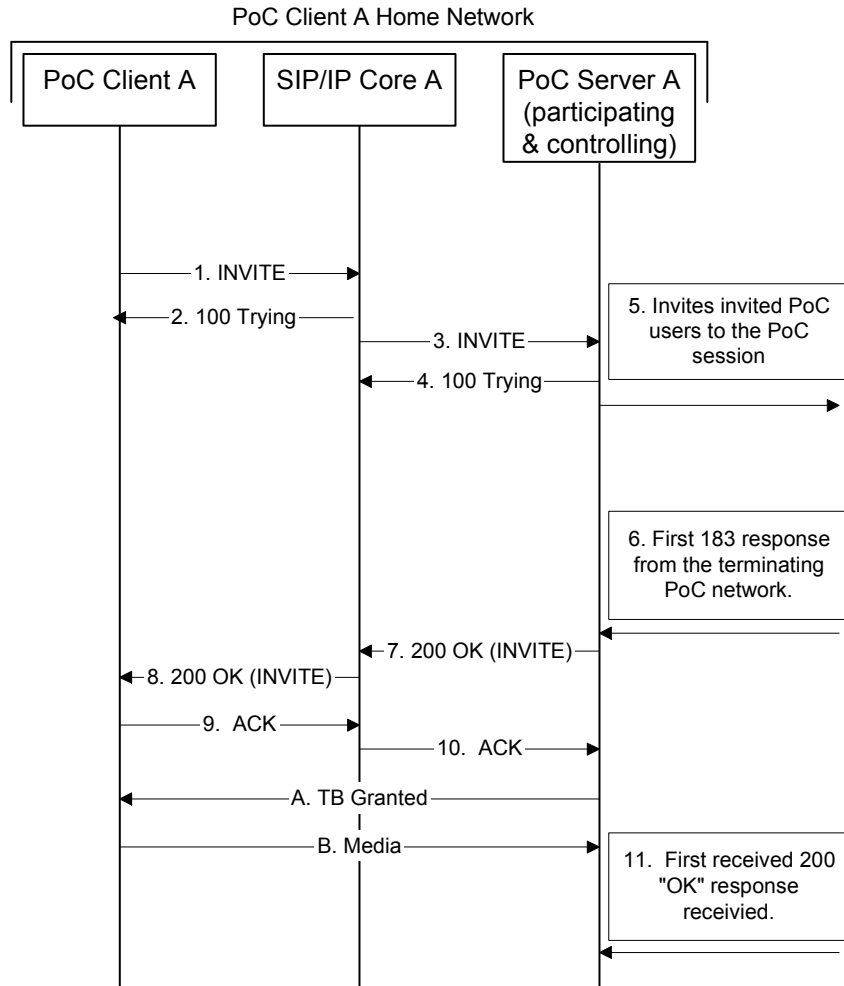


Figure 8: Ad-hoc PoC Session establishment on the originating side using on-demand signaling, unconfirmed case

The steps of the flow are as follows:

1. SIP INVITE request (from PoC Client A to SIP/IP Core A)

The PoC Client A sends a SIP INVITE request to the SIP/IP Core A.

Request-URI sip:PoCConferenceFactoryURI@networkA.net

SIP HEADERS

P-Preferred-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *,+g.poc.talkburst; require;explicit

User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01

Privacy: Id
Contact: <sip:PoC-ClientA@networkA.net>
Supported: Timer
Session-Expires: 1800;refresher=uac
Allow: INVITE,ACK,CANCEL,BYE,REFER,MESSAGE,SUBSCRIBE,NOTIFY,PUBLISH
Content-Type: multipart/mixed
P-Alerting-Mode: MAO

SDP PARAMETERS

Content-Type: application/sdp

c= IN IP6 5555::aaa:bbb:ccc:ddd
m= audio 3456 RTP/AVP 97
a= rtpmap:97 AMR
a= rtcp:5560
m= application 2000 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

XML MIME BODY

Content-Type: application/resource-lists+xml

Content-Disposition: recipient-list

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<resource-lists xmlns="urn:ietf:params:xml:ns:resource-lists"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
```

```
<list>
```

```
<entry uri="sip:PoC-ClientB@networkB.com" />
```

```
<entry uri="sip:PoC-ClientC@networkC.com" />
```

```

        <entry uri="sip:PoC-ClientD@networkD.com" />
    </list>
</resource-lists>

```

2. SIP 100 "Trying" response (from SIP/IP Core A to PoC Client A)

The SIP/IP Core A returns a SIP 100 "Trying" response.

3. SIP INVITE request (from SIP/IP Core A to PoC Server A)

The SIP/IP Core A forwards the SIP INVITE request to the PoC Server A.

Request-URI sip:PoC[ConferenceFactoryURI@networkA.net](#)

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *,+g.poc.talkburst; require;explicit
User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01
Privacy: Id
Contact: <sip:[PoC-ClientA@networkA.net](#)>
Supported: Timer
Session-Expires: 1800;refresher=uac
Allow: INVITE,ACK,CANCEL,BYE,REFER,MESSAGE,SUBSCRIBE,NOTIFY,PUBLISH
Content-Type: multipart/mixed
P-Alerting-Mode: MAO

SDP PARAMETERS

Content-Type: application/sdp

c= IN IP6 5555::aaa:bbb:ccc:ddd
m= audio 3456 RTP/AVP 97
a= rtpmap:97 AMR
a= rtcp:5560
m= application 2000 udp TBCP

a= ftmp:TBCP queuing=1; tb_priority=2; timestamp=1

XML MIME BODY

Content-Type: application/resource-lists+xml

Content-Disposition: recipient-list

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<resource-lists xmlns="urn:ietf:params:xml:ns:resource-lists"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
```

```
<list>
```

```
<entry uri="sip:PoC-ClientB@networkB.com" />
```

```
<entry uri="sip:PoC-ClientC@networkC.com" />
```

```
<entry uri="sip:PoC-ClientD@networkD.com" />
```

```
</list>
```

```
</resource-lists>
```

4. SIP 100 "Trying" response (from PoC Server A to SIP/IP Core A)

The PoC Server A sends a SIP 100 "Trying" response to the SIP/IP Core A.

5. PoC Server A sends SIP INVITE requests towards the Invited PoC Clients

The PoC Server A sends SIP INVITE requests to the Invited PoC Clients as shown in Figure 7 "PoC Session invitation with automatic answer".

Request-URI Sip:PoC-UserB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *,+g.poc.talkburst; require:explicit

User-Agent: PoC-serv/OMA1.0

Privacy: Id

Contact: <sip:PoC-ServerA@networkA.net;session=adhoc>;isfocus

Supported: 100rel,timer

Session-Expires: 1800;refresher=uas
Allow: INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,MESSAGE,
 SUBSCRIBE, NOTIFY, PUBLISH
P-Alerting-Mode: MAO

SDP PARAMETERS

c= IN IP6 50555::ccc:ddd:aaa:bbb
m= audio 53456 RTP/AVP 97 98
a= rtpmap:97 AMR
a= rtpmap:98 EVRC/8000
a= rtcp:53080
m= Application 50000 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

6. PoC Server A receives SIP 183 "Session Progress" response

The PoC Server A receives the first SIP 183 "Session Progress" response as shown in Figure 7 "PoC Session invitation with automatic answer".

SIP HEADERS

P-Asserted-Identity: "PoC User B" <sip:PoC-ClientB@networkB.net>
Server: PoC-serv/OMA1.0
Contact: <sip:PoC-ServerB@networkB.net>
P-Answer-State: Unconfirmed
Allow: INVITE,ACK,CANCEL,BYE, PRACK, UPDATE,
 REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

7. SIP 200 "OK" response (from PoC Server A to SIP/IP Core A)

The PoC Server A sends a SIP 200 "OK" to SIP/IP Core A. (Optionally PoC Server A inserts Talk Burst granted indication into the SIP 200 "OK" response).

SIP HEADERS

P-Asserted-Identity: "PoC User B" <sip:PoC-UserB@networkB.net>
Server: PoC-serv/OMA1.0
Contact <sip:PoC-ServerA@networkA.net;session=adhoc>;
 isfocus;+g.poc.talkburst
Require: timer

Session-Expires: 1800;refresher=uac
P-Answer-State: Unconfirmed
Allow: INVITE,ACK,CANCEL,BYE, PRACK, UPDATE,
 REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

SDP PARAMETERS

c= IN IP6 57777::eee:fff:aaa:bbb
m= audio 57787 RTP/AVP 97
a= rtpmap:97 AMR
a= rtcp:57000
m= application 57790 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

8. SIP 200 "OK" response (from SIP/IP Core A to PoC Client A)

The SIP/IP Core A forwards the 200 "OK" response to PoC Client A

SIP HEADERS

P-Asserted-Identity: "PoC User B" <sip:PoC-ClientB@networkB.net>
Server: PoC-serv/OMA1.0
Contact <sip:PoC-ServerA@networkA.net;session=adhoc>; isfocus
Require: timer
Session-Expires: 1800;refresher=uac
P-Answer-State: Unconfirmed
Allow: INVITE,ACK,CANCEL,BYE, PRACK, UPDATE,
 REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

SDP PARAMETERS

c= IN IP6 57777::eee:fff:aaa:bbb
m= audio 57787 RTP/AVP 97
a= rtpmap:97 AMR
a= rtcp:57000
m= application 57790 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

9. SIP ACK request (from PoC Client A to SIP/IP Core A)

The PoC Client A sends a SIP ACK request to SIP/IP Core A

10. SIP ACK request (from SIP/IP Core A to PoC Server A)

The SIP/IP Core A forwards the SIP ACK request to PoC Server A

A. TBCP Talk Burst Granted (PoC Server A to PoC Client A)

The PoC Server A sends TBCP Talk Burst Granted message to PoC Client A. This step do not wait SIP ACK request.

B. PoC Client sends RTP Media to PoC Server A

The PoC Client A sends RTP Media packets to PoC Server A

11. The first SIP 200 “OK” response received.

The PoC Server A receives the first SIP 200 “OK” response from an Invited PoC User. The PoC Server forwards the RTP Media. The SIP 200 “OK” response is not forwarded towards the PoC Client A.

F.4.2 Originating flow – Confirmed Indication with manual answer

The signaling sequences in this subclause show the establishment of the 1-1 PoC Session using on-demand signaling in the originating side. As a prerequisite for the on-demand signaling, PoC Client needs to be registered.

This flow shows the signaling sequence for the Confirmed indication case when the terminating side answers manually and SIP 200 “OK” is not sent before the SIP 200 “OK” from the terminating side is received. The flow is as shown in Figure 9 "*Ad-hoc PoC Session establishment on the originating side using on-demand signaling, confirmed case*".

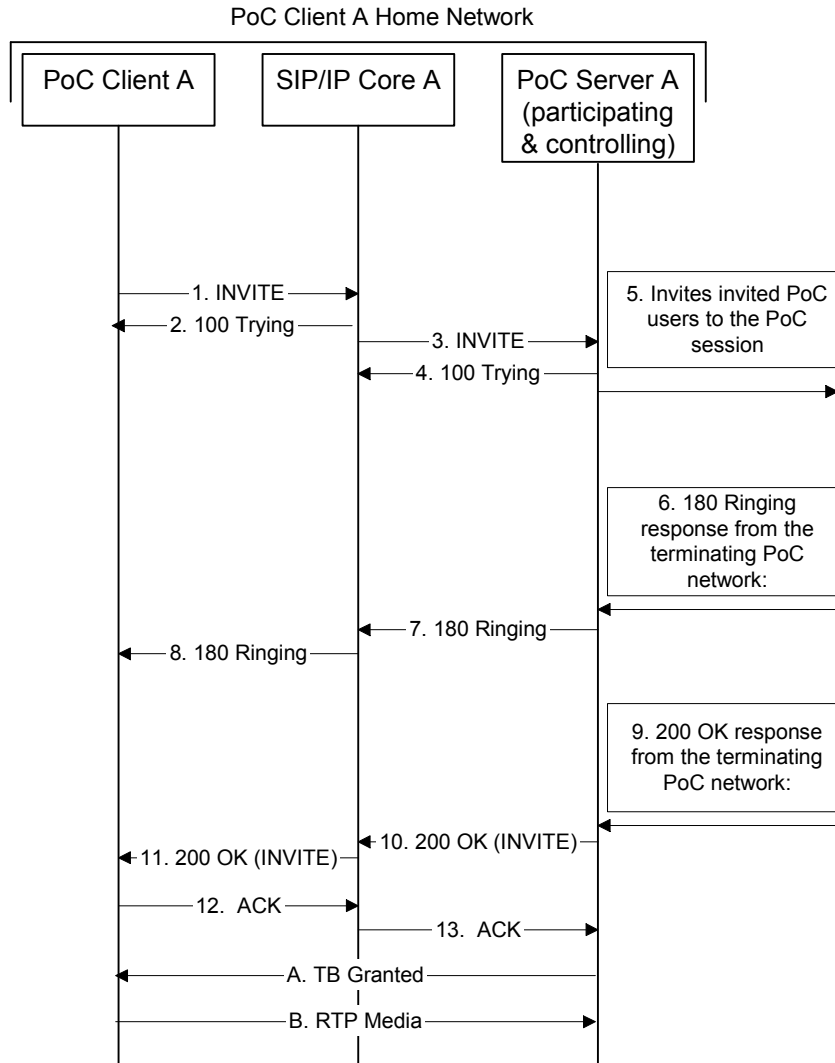


Figure 9: Ad-hoc PoC Session establishment on the originating side using on-demand signaling, confirmed case manual answer

The steps of the flow are as follows:

1. SIP INVITE request (from PoC Client A to SIP/IP Core A)

The PoC Client A sends a SIP INVITE request to SIP/IP Core A.

Request-URI sip:PoCConferenceFactoryURI@networkA.net

SIP HEADERS

P-Preferred-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *,+g.poc.talkburst; require;explicit

User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01

Privacy: Id
Contact: <sip:PoC-ClientA@networkA.net>
Supported: Timer
Session-Expires: 1800;refresher=uac
Allow: INVITE,ACK,CANCEL,BYE,REFER,MESSAGE,SUBSCRIBE,NOTIFY,PUBLISH
Content-Type: multipart/mixed

SDP PARAMETERS

Content-Type: application/sdp

c= IN IP6 5555::aaa:bbb:ccc:ddd
m= audio 3456 RTP/AVP 97
a= rtpmap:97 AMR
a= rtcp:5560
m= application 2000 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

XML MIME BODY

Content-Type: application/resource-lists+xml

Content-Disposition: recipient-list

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<resource-lists xmlns="urn:ietf:params:xml:ns:resource-lists"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
```

```
<list>
```

```
<entry uri="sip:PoC-ClientB@networkB.com" />
```

```
</list>
```

```
</resource-lists>
```


2. SIP 100 "Trying" response (from SIP/IP Core A to PoC Client A)

The SIP/IP Core A sends a SIP 100 "Trying" response to PoC Client A.

3. SIP INVITE request (from SIP/IP Core A to PoC Server A)

The SIP/IP Core A forwards the SIP INVITE request to the PoC Server A.

Request-URI sip:PoC[ConferenceFactoryURI@networkA.net](#)

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *,+g.poc.talkburst; require;explicit

User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01

Privacy: Id

Contact: <sip:[PoC-ClientA@networkA.net](#)>

Supported: Timer

Session-Expires: 1800;refresher=uac

Allow: INVITE,ACK,CANCEL,BYE,REFER,MESSAGE,SUBSCRIBE,NOTIFY,PUBLISH

Content-Type: multipart/mixed

SDP PARAMETERS

Content-Type: application/sdp

c= IN IP6 5555::aaa:bbb:ccc:ddd

m= audio 3456 RTP/AVP 97

a= rtpmap:97 AMR

a= rtcp:5560

m= application 2000 udp TBCP

a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

XML MIME BODY

Content-Type: application/resource-lists+xml

Content-Disposition: recipient-list

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<resource-lists xmlns="urn:ietf:params:xml:ns:resource-lists"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
```

```
<list>
```

```
<entry uri="sip:PoC-ClientB@networkB.com" />
```

```
</list>
```

```
</resource-lists>
```

4. SIP 100 "Trying" response (from PoC Server A to SIP/IP Core A)

The PoC Server A sends a SIP 100 "Trying" response to the SIP/IP Core A.

5. PoC Server A sends SIP INVITE requests towards the Invited PoC Clients

The PoC Server A sends SIP INVITE requests to the Invited PoC Clients as shown in Figure 10 “*PoC Session invitation with manual answer*”.

Request-URI Sip:PoC-UserB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *,+g.poc.talkburst; require;explicit

User-Agent: PoC-serv/OMA1.0

Privacy: Id

Contact: <sip:PoC-ServerA@networkA.net;session=1-1>;isfocus

Supported: 100rel,timer

Session-Expires: 1800;refresher=uas

Allow: INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,MESSAGE,
SUBSCRIBE, NOTIFY, PUBLISH

SDP PARAMETERS

c= IN IP6 50555::ccc:ddd:aaa:bbb

```

m=          audio 53456 RTP/AVP 97 98
a=          rtpmap:97 AMR
a=          rtpmap:98 EVRC/8000
a=          rtcp:53080
m=          Application 50000 udp TBCP
a=          fmp: TBCP queuing=1; tb_priority=2; timestamp=1

```

6. PoC Server A receives SIP 180 "Ringing" response

The PoC Server A receives the first SIP 180 "Ringing" response as shown in Figure 10 “*PoC Session invitation with manual answer*”.

SIP HEADERS

```

P-Asserted-Identity:  "PoC User B" <sip:PoC-UserB@networkB.net>
Privacy:              Id
Server:               PoC-serv/OMA1.0
Contact:              <sip:PoC-ServerB@networkB.net>
Allow:                INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,MESSAGE,SUBSCRIBE,
                     NOTIFY,PUBLISH

```

7. SIP 180 "Ringing" response (from PoC Server A to SIP/IP Core A)

The PoC Server A sends the SIP 180 "Ringing" response to the SIP/IP Core A.

SIP HEADERS

```

P-Asserted-Identity:  "PoC User B" <sip:PoC-UserB@networkB.net>
Privacy:              Id
Server:               PoC-serv/OMA1.0
Contact:              <sip:PoC-ServerA@networkA.net>
Allow:                INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,
                     REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

```

8. SIP 180 "Ringing" response (from SIP/IP Core A to PoC Client A)

The SIP/IP Core A forwards the SIP 180 "Ringing" response to PoC Client A.

SIP HEADERS

```

Server:               PoC-serv/OMA1.0
Contact:              <sip:PoC-ServerA@networkA.net>

```

Allow: INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,MESSAGE,SUBSCRIBE,
NOTIFY,PUBLISH

9. PoC Server A receives SIP 200 "OK" response

The first SIP 200 "OK" response is received from the terminating PoC network

SIP HEADERS

Require: Timer
Session-Expires: 1800;refresher=uac

SDP PARAMETERS

c= IN IP6 99055::fff:aaa:eee:bbb
m= audio 99006 RTP/AVP 97
a= rtpmap:97 AMR
a= Rtcp:90000
m= application 90000 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

10. SIP 200 "OK" response (from PoC Server A to SIP/IP Core A)

The PoC Server A sends a SIP 200 "OK" response to SIP/IP Core A. (Optionally PoC Server A inserts TBCP Granted indication into the SIP 200 "OK" response).

SIP HEADERS

Require: Timer
Session-Expires: 1800;refresher=uac

SDP PARAMETERS

c= IN IP6 57777::eee:fff:aaa:bbb
m= audio 57787 RTP/AVP 97
a= rtpmap:97 AMR
a= Rtcp:57000
m= application 57790 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

11. SIP 200 "OK" response (from SIP/IP Core A to PoC Client A)

The SIP/IP Core A forwards the SIP 200 "OK" response to PoC Client A.

SIP HEADERS

Require: timer
Session-Expires: 1800;refresher=uac

SDP PARAMETERS

c= IN IP6 57777::eee:fff:aaa:bbb
 m= audio 57787 RTP/AVP 97
 a= rtpmap:97 AMR
 a= Rtcp:57000
 m= application 57790 udp TBCP
 a= fmp:TBCP queuing=1; tb_priority=2; timestamp=1

12. SIP ACK request (from PoC Client A to SIP/IP Core A)

The PoC Client A sends a SIP ACK request to SIP/IP Core A.

13. SIP ACK request (from SIP/IP Core A to PoC Server A)

The SIP/IP Core A forwards the SIP ACK request to PoC Server A

A. TBCP Talk Burst Granted (PoC Server A to PoC Client A)

The PoC Server A sends TBCP Talk Burst Granted message to PoC Client A. This step do not wait SIP ACK request.

B. PoC Client sends RTP Media to PoC Server A

The PoC Client A sends RTP Media packets to PoC Server A

F.5 Ad-hoc and 1-1 PoC Session establishment On-demand Session

F.5.1 Terminating flow – Manual Answer

The signaling sequences in this subclause show the establishment of the Ad-hoc or 1-1 PoC Session using on-demand signaling in the originating side. As a prerequisite for the on-demand signaling, PoC Client needs to be registered.

This scenario applies for the On-demand Session case and for the Pre-established Session case.

This flow shows the signaling sequence for the manual answer case. The flow is as shown in Figure 10 "*PoC Session invitation with manual answer*".

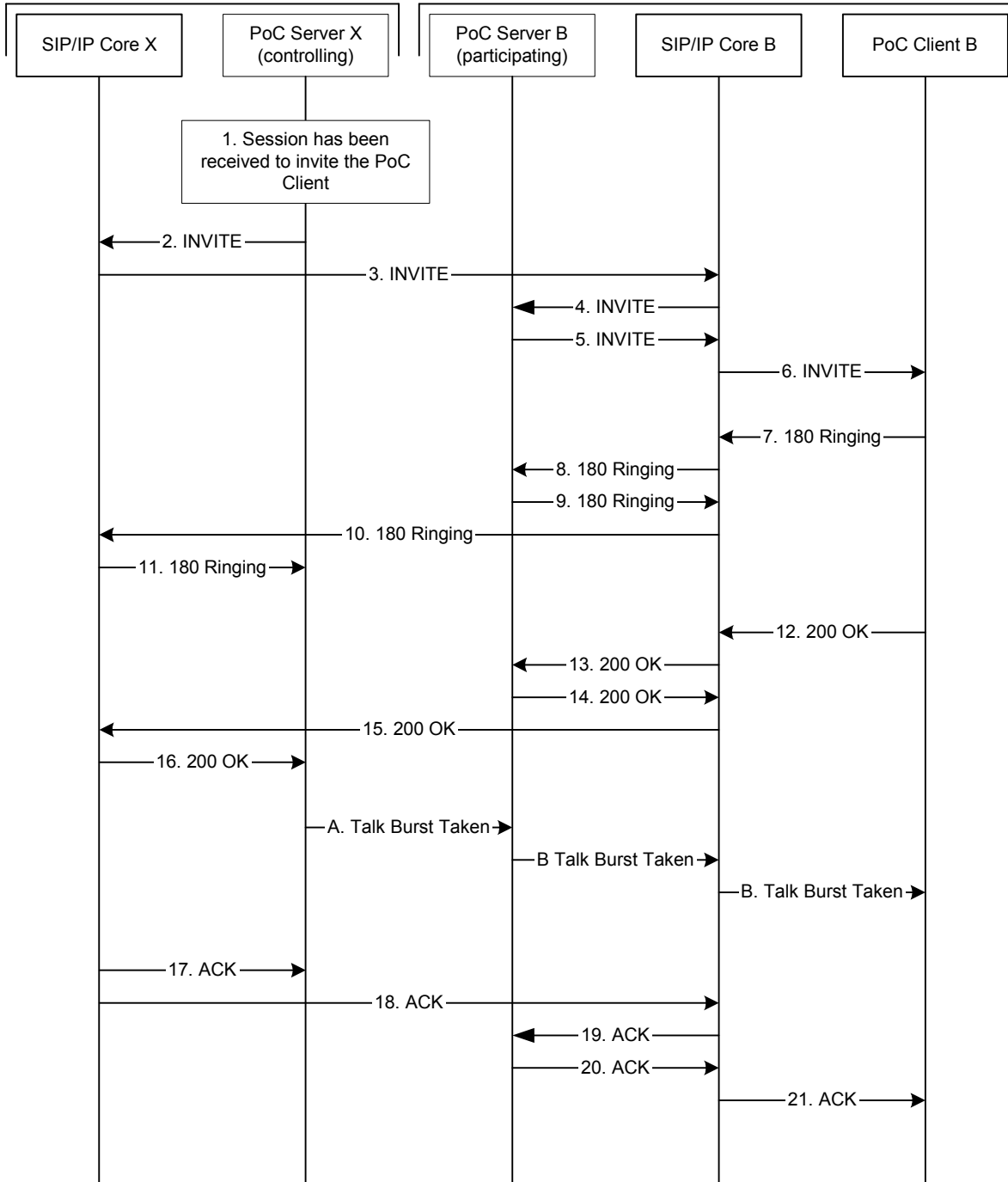


Figure 10: PoC Session invitation with manual answer

The steps of the flow are as follows:

- 1. PoC Server X receives is triggered to send SIP INVITE request to PoC Client B**
- 2. SIP INVITE request (from the PoC Server X to SIP/IP Core X)**

PoC Server X sends SIP INVITE request to SIP/IP X.

Request-URI sip:PoC-UserB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *;+g.poc.talkburst; require;explicit
User-Agent: PoC-serv/OMA1.0
Privacy: id
Contact: <sip:PoC-ServerX@networkX.net;session=1-1>; isfocus
Supported: 100rel,timer
Session-Expires: 1800;refresher=uas
Allow: INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,MESSAGE,
SUBSCRIBE, NOTIFY, PUBLISH

SDP PARAMETERS

c= IN IP6 50555::ccc:ddd:aaa:bbb
m= audio 53456 RTP/AVP 97 98
a= rtpmap:97 AMR
a= rtpmap:98 EVRC/8000
a= rtcp:53080
m= Application 50000 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

3. SIP INVITE request (from SIP/IP Core X to SIP/IP Core B)

SIP/IP Core X forwards the SIP INVITE request to SIP/IP Core B.

6
Request-URI sip:PoC-UserB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *;+g.poc.talkburst; require;explicit
User-Agent: PoC-serv/OMA1.0
Privacy: id
Contact: <sip:PoC-ServerX@networkX.net;session=1-1>;isfocus
Supported: 100rel,timer

Session-Expires: 1800;refresher=uas

Allow: INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,MESSAGE,
SUBSCRIBE, NOTIFY, PUBLISH

SDP PARAMETERS

c= IN IP6 50555::ccc:ddd:aaa:bbb

m= audio 53456 RTP/AVP 97 98

a= rtpmap:97 AMR

a= rtpmap:98 EVRC/8000

a= rtcp:53080

m= Application 50000 udp TBCP

a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

4. SIP INVITE request (from SIP/IP Core B to PoC Server B)

SIP/IP Core B forwards SIP INVITE request to PoC Server B.

8.
Request-URI sip:PoC-UserB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *,+g.poc.talkburst; require;explicit

User-Agent: PoC-serv/OMA1.0

Privacy: id

Contact: <sip:PoC-ServerX@networkX.net;session=1-1>;isfocus

Supported: 100rel,timer

Session-Expires: 1800;refresher=uas

Allow: INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,MESSAGE,
SUBSCRIBE, NOTIFY, PUBLISH

SDP PARAMETERS

c= IN IP6 50555::ccc:ddd:aaa:bbb

m= audio 53456 RTP/AVP 97 98

a= rtpmap:97 AMR

Request-URI**SIP HEADERS**

Accept-Contact: *;+g.poc.talkburst; require;explicit

User-Agent: PoC-serv/OMA1.0

Contact: <sip:PoC-ServerX@PoC_ServerB.networkB.net;session=1-1>;
+g.poc.talkburst

Supported: timer

Session-Expires: 1800;refresher=uas

P-Alerting-Mode: Manual

Allow: INVITE,ACK,CANCEL,BYE,PRACTACK,UPDATE,REFER,MESSAGE,
SUBSCRIBE, NOTIFY, PUBLISH

SDP PARAMETERS

c= IN IP6 60333::ddd: ccc:aaa:bbb

m= audio 63776 RTP/AVP 98

a= rtpmap:98 EVRC/8000

a= rtcp:63090

m= Application 60000 udp TBCP

a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

7. SIP 180 "Ringing" response (from PoC Client B to SIP/IP Core B)

PoC Client B sends a SIP 180 "Ringing" response to SIP/IP Core B.

SIP HEADERS

Privacy: id

Server: PoC-client/OMA1.0 Acme-Talk5000/v1.01

Contact: <sip:PoC-ClientB@networkB.net>

Allow: INVITE,ACK,CANCEL,BYE,REFER,MESSAGE,SUBSCRIBE,
NOTIFY,PUBLISH

8. SIP 180 "Ringing" response (from SIP/IP Core B to PoC Server B)

SIP/IP Core B forwards the SIP 180 "Ringing" response to PoC Server B.

SIP HEADERS

P-Asserted-Identity: "PoC User B" <sip:PoC-UserB@networkB.net>
Privacy: id
Server: PoC-client/OMA1.0 Acme-Talk5000/v1.01
Contact: <sip:PoC-ClientB@networkB.net>; +g.poc.talkburst
Allow: INVITE,ACK,CANCEL,BYE,REFER,MESSAGE,SUBSCRIBE,NOTIFY,PUBLISH

9. SIP 180 "Ringing" response (from PoC Server B to SIP/IP Core B)

PoC Server B sends a SIP 180 "Ringing" response to SIP/IP Core B.

SIP HEADERS

P-Asserted-Identity: "PoC User B" <sip:PoC-UserB@networkB.net>
Privacy: id
Server: PoC-serv/OMA1.0
Contact: <sip:PoC-ServerB@networkB.net>
Allow: INVITE,ACK,CANCEL,BYE,REFER,PRACK, UPDATE, MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

10. SIP 180 "Ringing" response (from SIP/IP Core B to SIP/IP Core X)

SIP/IP Core B forwards the SIP 180 "Ringing" response to SIP/IP Core X.

SIP HEADERS

P-Asserted-Identity: "PoC User B" <sip:PoC-UserB@networkB.net>
Privacy: id
Server: PoC-serv/OMA1.0
Contact: <sip:PoC-ServerB@networkB.net>
Allow: INVITE,ACK,CANCEL,BYE, PRACK, UPDATE, REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

11. SIP 180 "Ringing" response (from SIP/IP Core X to PoC Server X)

SIP/IP Core X forwards the SIP 180 "Ringing" response to PoC Server X.

SIP HEADERS

P-Asserted-Identity: "PoC User B" <sip:PoC-UserB@networkB.net>
Privacy: id
Server: PoC-serv/OMA1.0

Contact: <sip:PoC-ServerB@networkB.net>
Allow: INVITE,ACK,CANCEL,BYE, PRACK, UPDATE,
REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

12. SIP 200 "OK" response (from PoC Client B to SIP/IP Core B)

PoC Client B sends a SIP 200 "OK" response to SIP/IP Core B.

SIP HEADERS

Require: timer
Session-Expires: 1800;refresher=uas

SDP PARAMETERS

c= IN IP6 75555::eee:aaa:fff:bbb
m= audio 75575 RTP/AVP 98
a= rtpmap:98 EVRC/8000
a= rtcp:75000
m= application 75590 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2;timestamp=1

13. SIP 200 "OK" response (from SIP/IP Core B to PoC Server B)

SIP/IP Core B forwards the SIP 200 "OK" response to PoC Server B.

SIP HEADERS

Require: timer
Session-Expires: 1800;refresher=uas

SDP PARAMETERS

c= IN IP6 75555::eee:aaa:fff:bbb
m= audio 75575 RTP/AVP 98
a= rtpmap:98 EVRC/8000
a= rtcp:75000
m= application 75590 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2;timestamp=1

14. SIP 200 "OK" response (from PoC Server B to SIP/IP Core B)

PoC Server B sends a SIP 200 "OK" response to SIP/IP Core B.

SIP HEADERS

Require: timer
Session-Expires: 1800;refresher=uas

SDP PARAMETERS

c= IN IP6 99055::fff:aaa:eee:bbb
m= audio 99006 RTP/AVP 98
a= rtpmap:98 EVRC/8000
a= rtcp:90000
m= application 90000 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2;timestamp=1

15. SIP 200 "OK" response (from SIP/IP Core B to SIP/IP Core X)

SIP/IP Core B forwards the SIP 200 "OK" response to SIP/IP Core X.

SIP HEADERS

Require: timer
Session-Expires: 1800;refresher=uas

SDP PARAMETERS

c= IN IP6 99055::fff:aaa:eee:bbb
m= audio 99006 RTP/AVP 98
a= rtpmap:98 EVRC/8000
a= rtcp:90000
m= application 90000 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2;timestamp=1

16. SIP 200 "OK" response (from SIP/IP Core X to PoC Server X)

SIP/IP Core X forwards the SIP 200 "OK" response to PoC Server X.

SIP HEADERS

Require: timer
Session-Expires: 1800;refresher=uas

SDP PARAMETERS

```

c=                IN IP6 99055::fff:aaa:eee:bbb
m=                audio 99006 RTP/AVP 98
a=                rtpmap:98 EVRC/8000
a=                rtcp:90000
m=                application 90000 udp TBCP
a=                fmp: TBCP queuing=1; tb_priority=2;timestamp=1

```

A. TBCP Talk Burst Taken message (from PoC Server X to PoC Server B).

The TBCP Talk Burst Taken message is sent to inform the PoC Client B that another PoC Client has been granted to send a Talk Burst. The message contains the identity of the PoC User that has been granted to send a Talk Burst.

B. TBCP Talk Burst Taken message (from PoC Server B to PoC Client B).

The TBCP Talk Burst Taken message is sent to inform the PoC Client B that another PoC Client has been granted to send a Talk Burst. The message contains the identity of the PoC User that has been granted to send a Talk Burst.

17. SIP ACK request (from PoC Server X to SIP/IP Core X)

PoC Server X sends a SIP ACK request to SIP/IP Core X.

18. SIP ACK request (from SIP/IP Core X to SIP/IP Core B)

SIP/IP Core X forwards the SIP ACK request to SIP/IP Core B.

19. SIP ACK request (from SIP/IP Core B to PoC Server B)

SIP/IP Core B forwards the SIP ACK request to PoC Server B.

20. SIP ACK request (from PoC Server B to SIP/IP Core B)

PoC Server B sends a SIP ACK request to SIP/IP Core B.

21. SIP ACK request (from SIP/IP Core B to PoC Client B)

SIP/IP Core B forwards the SIP ACK request to PoC Client B.

F.5.2 Terminating flow – Automatic Answer**F.5.2.1 On-demand Session case**

This flow shows the automatic answer case for the On-demand Session case. The flows in Figure 11 "*PoC Session invitation with automatic answer*" shows the message flow for the scenario.

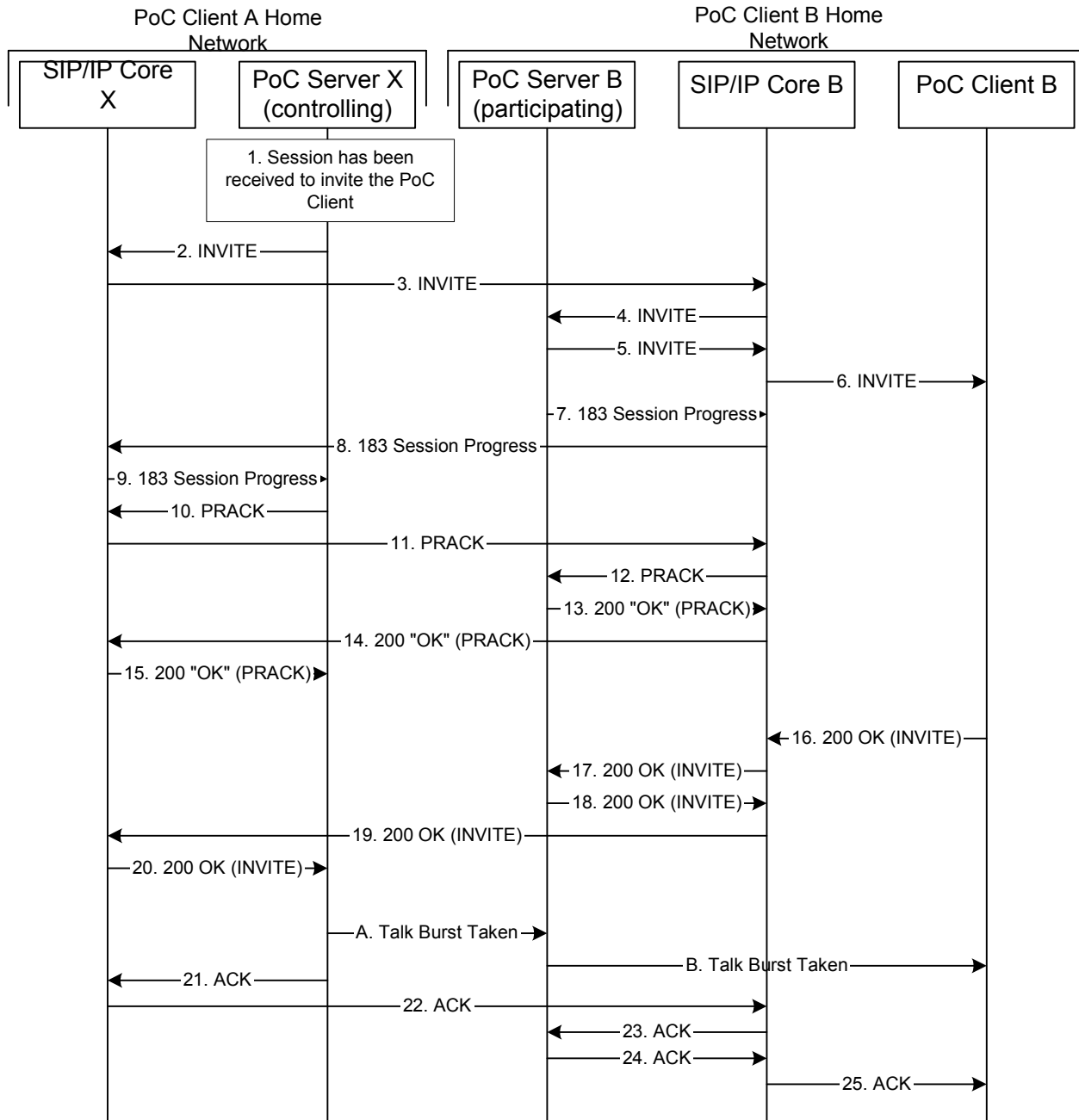


Figure 11: PoC Session invitation with automatic answer

The steps of the flow are as follows:

1. PoC Server X is receives invitation to invite PoC Client B

PoC Server X receives Session Invitation to send SIP INVITE request to PoC Client B.

2. SIP INVITE request (from PoC Server X to SIP/IP core X)

PoC Server X sends SIP INVITE request to SIP/IP Core X

Request-URI sip:PoC-UserB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *,+g.poc.talkburst; require;explicit
User-Agent: PoC-serv/OMA1.0
Privacy: id
Contact: <sip:PoC-ServerX@networkX.net;session=1-1>;
 +g.poc.talkburst;isfocus
Supported: 100rel,timer
Session-Expires: 1800;refresher=uas
Allow: INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,MESSAGE,
 SUBSCRIBE, NOTIFY, PUBLISH

SDP PARAMETERS

c= IN IP6 50555::ccc:ddd:aaa:bbb
m= audio 53456 RTP/AVP 97 98
a= rtpmap:97 AMR
a= rtpmap:98 EVRC/8000
a= rtcp:53080
m= Application 50000 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

3. SIP INVITE request (from SIP/IP core X to SIP/IP core B)

SIP/IP Core X forwards SIP INVITE request to SIP/IP core B

Request-URI sip:PoC-UserB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *,+g.poc.talkburst; require;explicit
User-Agent: PoC-serv/OMA1.0
Privacy: id
Contact: <sip:PoC-ServerX@networkX.net;session=1-1>;
 +g.poc.talkburst;isfocus

Supported: 100rel,timer

Session-Expires: 1800;refresher=uas

Allow: INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,MESSAGE,
SUBSCRIBE, NOTIFY, PUBLISH

SDP PARAMETERS

c= IN IP6 50555::ccc:ddd:aaa:bbb

m= audio 53456 RTP/AVP 97 98

a= rtpmap:97 AMR

a= rtpmap:98 EVRC/8000

a= rtcp:53080

m= Application 50000 udp TBCP

a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

4. SIP INVITE request (from SIP/IP core B to PoC Server B)

SIP/IP Core B forwards SIP INVITE request to PoC Server B.

Request-URI sip:PoC-UserB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *,+g.poc.talkburst; require;explicit

User-Agent: PoC-serv/OMA1.0

Privacy: id

Contact: <sip:PoC-ServerX@networkX.net;session=1-1>;
+g.poc.talkburst;isfocus

Supported: 100rel,timer

Session-Expires: 1800;refresher=uas

Allow: INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,MESSAGE,
SUBSCRIBE, NOTIFY, PUBLISH

SDP PARAMETERS

c= IN IP6 50555::ccc:ddd:aaa:bbb

m= audio 53456 RTP/AVP 97 98

a= rtpmap:97 AMR

a= rtpmap:98 EVRC/8000

a= rtcp:53080
m= Application 50000 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

5. SIP INVITE request (from PoC Server B to SIP/IP core B)

PoC Server B sends a SIP INVITE request to SIP/IP core B.

Request-URI sip:PoC-UserB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *,+g.poc.talkburst; require;explicit
User-Agent: PoC-serv/OMA1.0
Privacy: id
Contact: <sip:PoC-ServerX@PoC_ServerB.networkB.net;session=1-1>;
 +g.poc.talkburst
Supported: timer
Session-Expires: 1800;refresher=uas
P-Alerting-Mode: Auto
Allow: INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,MESSAGE,
 SUBSCRIBE, NOTIFY, PUBLISH

SDP PARAMETERS

c= IN IP6 60333::ddd:ccc:aaa:bbb
m= audio 63776 RTP/AVP 98
a= rtpmap:98 EVRC/8000
a= rtcp:63090
m= Application 60000 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

6. SIP INVITE request (from SIP/IP core B to PoC Client B)

SIP/IP Core B forwards the SIP INVITE request to PoC Client B.

Request-URI sip:PoC-UserB@networkB.net

SIP HEADERS

Accept-Contact: *;+g.poc.talkburst; require;explicit

User-Agent: PoC-serv/OMA1.0

Privacy: id

Contact: <sip:PoC-ServerX@PoC_ServerB.networkB.net;session=1-1>;
+g.poc.talkburst

Supported: timer

Session-Expires: 1800;refresher=uas

P-Alerting-Mode: Auto

Allow: INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,MESSAGE,
SUBSCRIBE, NOTIFY, PUBLISH

SDP PARAMETERS

c= IN IP6 60333::ddd:ccc:aaa:bbb

m= audio 63776 RTP/AVP 98

a= rtpmap:98 EVRC/8000

a= rtcp:63090

m= Application 60000 udp TBCP

a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

7. SIP 183 "Session Progress" response (from PoC Server B to SIP/IP core B)

PoC Server B sends a SIP 183 "Session Progress" response to SIP/IP core B.

SIP HEADERS

P-Asserted-Identity: "PoC User B" <sip:PoC-UserB@networkB.net>

Privacy: id

Require: 100rel

Server: PoC-Serv/OMA1.0

Contact: <sip:PoC-ServerB@networkB.net>; +g.poc.talkburst

P-Answer-State: Unconfirmed

Allow: INVITE,ACK,CANCEL,BYE, PRACK, UPDATE,
REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

8. SIP 183 "Session Progress" response (from SIP/IP core B to SIP/IP core X)

SIP/IP core B forwards the SIP 180 "Session Progress" response to SIP/IP core X.

SIP HEADERS

P-Asserted-Identity: "PoC User B" <sip:PoC-tUserB@networkB.net>
Privacy: id
Require: 100rel
Server: PoC-Serv/OMA1.0
Contact: <sip:PoC-ServerB@networkB.net>; +g.poc.talkburst
P-Answer-State: Unconfirmed
Allow: INVITE,ACK,CANCEL,BYE, PRACK, UPDATE, REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

9. SIP 183 "Session Progress" response (from SIP/IP core X to PoC Server X)

SIP/IP core X forwards the SIP 183 "Session Progress" response to PoC Server X.

SIP HEADERS

P-Asserted-Identity: "PoC User B" <sip:PoC-UserB@networkB.net>
Privacy: id
Require: 100rel
Server: PoC-Serv/OMA1.0
Contact: <sip:PoC-ServerB@networkB.net>; +g.poc.talkburst
P-Answer-State: Unconfirmed
Allow: INVITE,ACK,CANCEL,BYE, PRACK, UPDATE, REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

10. SIP PRACK request (from PoC Server X to SIP/IP core X)

If PoC Server B requested SIP 183 "Session progress" response to be sent reliably, PoC Server X sends a SIP PRACK request to the SIP/IP core X.

Request-URI sip:PoC-ServerB@networkB.net

11. SIP PRACK request (from SIP/IP core X to SIP/IP core B)

SIP/IP core X forwards the SIP PRACK request to SIP/IP core B.

Request-URI sip:PoC-ServerB@networkB.net

12. SIP PRACK request (from SIP/IP core B to PoC Server B)

SIP/IP core B forwards SIP PRACK request to PoC Server B.

Request-URI sip:PoC-ServerB@networkB.net

13. SIP 200 "OK" response to the SIP PRACK request (from PoC Server B to SIP/IP core B)

PoC Server B sends a SIP 200 "OK" response to SIP/IP Core B.

14. SIP 200 "OK" response to the SIP PRACK request (from SIP/IP core B to SIP/IP core X)

SIP/IP core B forwards the SIP 200 "OK" response to SIP/IP core X.

15. SIP 200 "OK" response to the SIP PRACK request (from SIP/IP core X to PoC Server X)

SIP/IP core X forwards the SIP 200 "OK" response to PoC Server X.

16. SIP 200 "OK" response to the SIP INVITE request (from PoC Client B to SIP/IP core B)

PoC Client B sends a SIP 200 "OK" response to SIP/IP core B.

SIP HEADERS

Privacy: id
Server: PoC-client/OMA1.0 Acme-Talk5000/v1.01
Contact <sip:PoC-ClientB@networkB.net >
Require: timer
Session-Expires: 1800;refresher=uas
Allow: INVITE,ACK,CANCEL,BYE,REFER,MESSAGE,
 SUBSCRIBE, NOTIFY, PUBLISH

SDP PARAMETERS

c= IN IP6 75555::eee:aaa:fff:bbb

m= audio 75575 RTP/AVP 98
 a= rtpmap:98 EVRC/8000
 a= rtcp:75000
 m= application 75590 udp TBCP
 a= fmp: TBCP queuing=1; tb_priority=2;timestamp=1

17. SIP 200 "OK" response to the SIP INVITE request (from SIP/IP core B to PoC Server B)

SIP/IP core B forwards the SIP 200 "OK" response to PoC Server B.

SIP HEADERS

P-Asserted-Identity: "PoC User B" <sip:PoC-UserB@networkB.net>
Privacy: id
Server: PoC-client/OMA1.0 Acme-Talk5000/v1.01
Contact <sip:PoC-ClientB@networkB.net >
Require: timer
Session-Expires: 1800;refresher=uas
Allow: INVITE,ACK,CANCEL,BYE,REFER,MESSAGE, SUBSCRIBE, NOTIFY, PUBLISH

SDP PARAMETERS

c= IN IP6 75555::eee:aaa:fff:bbb
 m= audio 75575 RTP/AVP 98
 a= rtpmap:98 EVRC/8000
 a= rtcp:75000
 m= application 75590 udp TBCP
 a= fmp: TBCP queuing=1; tb_priority=2;timestamp=1

18. SIP 200 "OK" response to the SIP INVITE request (from PoC Server B to SIP/IP core B)

PoC Server B sends a SIP 200 "OK" response to SIP/IP core B.

SIP HEADERS

Require: timer
Session-Expires: 1800;refresher=uas
P-Answer-State: Confirmed

SDP PARAMETERS

c= IN IP6 99055::fff:aaa:eee:bbb
m= audio 99006 RTP/AVP 98
a= rtpmap:98 EVRC/8000
a= rtcp:90000
m= application 90000 udp TBCP
a= ftmp:TBCP queuing=1; tb_priority=2;timestamp=1

19. SIP 200 "OK" response to the SIP INVITE request (from SIP/IP core B to SIP/IP core X)

SIP/IP core B forwards the SIP 200 "OK" response to SIP/IP core X.

SIP HEADERS

Require: timer
Session-Expires: 1800;refresher=uas
P-Answer-State: Confirmed

SDP PARAMETERS

c= IN IP6 99055::fff:aaa:eee:bbb
m= audio 99006 RTP/AVP 98
a= rtpmap:98 EVRC/8000
a= rtcp:90000
m= application 90000 udp TBCP
a= ftmp:TBCP queuing=1; tb_priority=2;timestamp=1

20. SIP 200 "OK" response to the SIP INVITE request (from SIP/IP core X to PoC Server X)

SIP/IP core X forwards the SIP 200 "OK" response to PoC Server X.

SIP HEADERS

Require: timer
Session-Expires: 1800;refresher=uas
P-Answer-State: Confirmed

SDP PARAMETERS

c= IN IP6 99055::fff:aaa:eee:bbb
m= audio 99006 RTP/AVP 98
a= rtpmap:98 EVRC/8000
a= rtcp:90000
m= application 90000 udp TBCP
a= fmp:TBCP queuing=1; tb_priority=2;timestamp=1

- A. **TBCP Talk Burst Taken message (from the PoC Server X to the PoC Server B).**
The TBCP Talk Burst Taken message is sent to inform the PoC Client B that another PoC Client has been granted to send a Talk Burst. The message contains the identity of PoC User at the granted PoC Client.
- B. **TBCP Talk Burst Taken message (from the PoC Server B to the PoC Client B).**
The TBCP Talk Burst Taken message is sent to inform the PoC Client B that another PoC Client has been granted to send a Talk Burst. The message contains the identity of PoC User at the granted PoC Client.

21. SIP ACK request (from PoC Server X to SIP/IP core X)

PoC Server X sends a SIP ACK request to SIP/IP core X.

22. SIP ACK request (from SIP/IP core X to SIP/IP core B)

SIP/IP core X forwards the SIP ACK request to SIP/IP core B.

23. SIP ACK request (from SIP/IP core B to PoC Server B)

SIP/IP core B forwards the SIP ACK request to PoC Server B.

24. SIP ACK request (from PoC Server B to SIP/IP core B)

PoC Server B sends a SIP ACK request to SIP/IP core B.

25. SIP ACK request (from SIP/IP core B to PoC Client B)

SIP/IP core B forwards the SIP ACK request to PoC Client B.

F.6 Rejoin a PoC Group Session

F.6.1 Using on-demand signaling

The signaling flow is valid for rejoining an Ad-hoc Group PoC Session and a Pre-arranged PoC Group Session.

Prerequisites for the signaling flow are that the PoC Client has previously been a Participant in the PoC Group Session and that the PoC Group Session is still ongoing.

Figure 12 "Rejoin a Group PoC Session" shows the signaling flow for the scenario

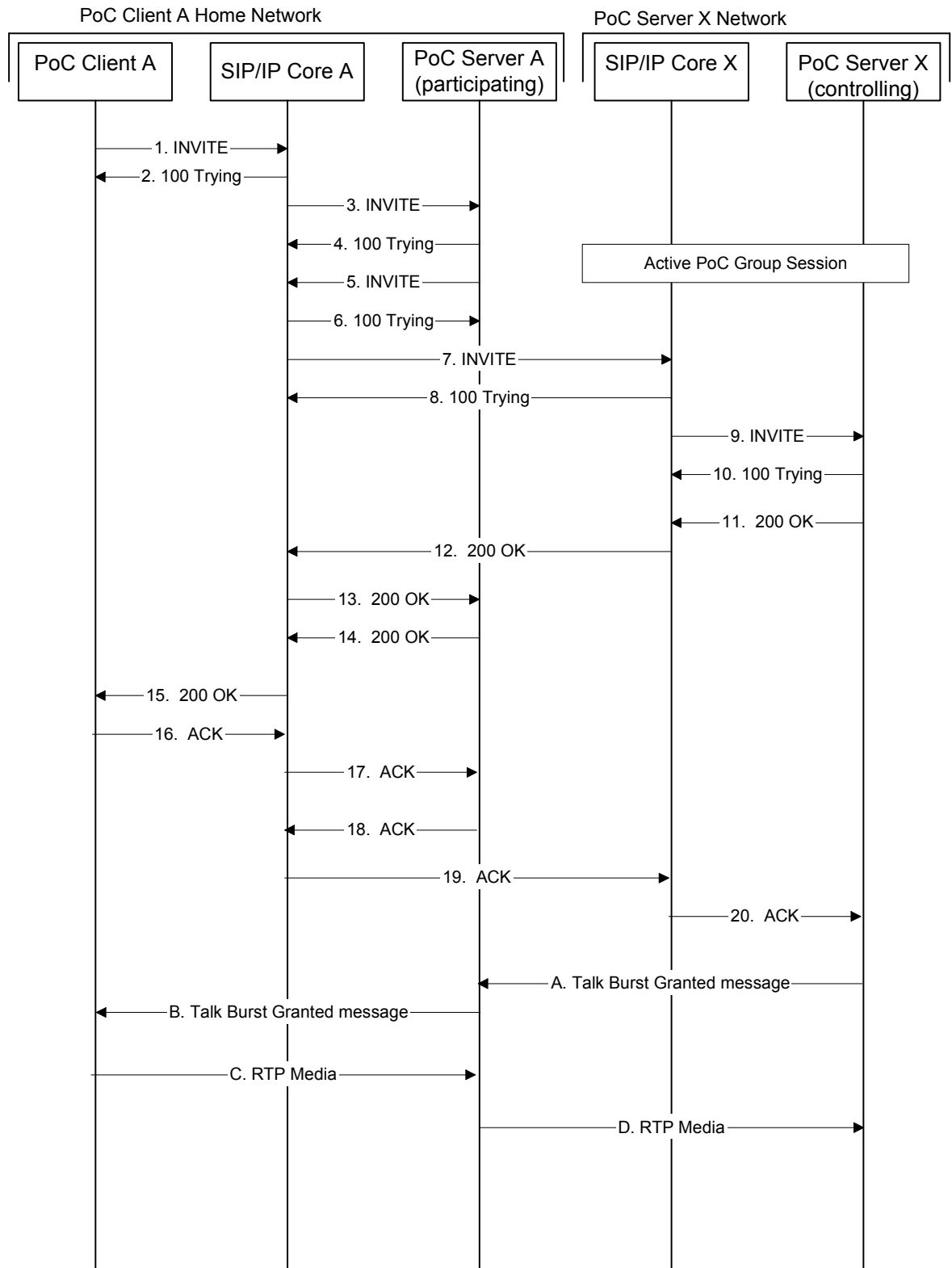


Figure 12: Rejoin a Group PoC Session

The steps of the flows are as follows:

1. **SIP INVITE request (from PoC Client A to SIP/IP Core A)**

The PoC Client receives a request from a PoC User to rejoin a Group PoC Session and sends a SIP INVITE request to the SIP/IP Core A. The SIP INVITE request includes the PoC Session Identity in the Request-URI.

Request-URI sip:PoC-ServerA@networkA.net

SIP HEADERS

P-Preferred-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *,+g.poc.talkburst; require;explicit
User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01
Privacy: Id
Contact: <sip:PoC-ClientA@networkA.net>
Supported: Timer
Session-Expires: 1800;refresher=uac
Allow: INVITE,ACK,CANCEL,BYE,REFER,MESSAGE,SUBSCRIBE,NOTIFY,PUBLISH

SDP PARAMETERS

c= IN IP6 5555::aaa:bbb:ccc:ddd
m= audio 3456 RTP/AVP 97
a= Rtpmap:97 AMR
a= rtcp:5560
m= application 2000 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

2. **SIP 100 "Trying" response (from SIP/IP Core A to PoC Client A)**

The SIP/IP Core A sends a SIP 100 "Trying" response to the PoC Client A.

3. **SIP INVITE request (from SIP/IP Core A to PoC Server A)**

The SIP/IP Core A sends the SIP INVITE request to the PoC Server A.

Request-URI sip:PoC-ServerA@networkA.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *,+g.poc.talkburst; require;explicit
User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01
Privacy: Id
Contact: <sip:PoC-ClientA@networkA.net>
Supported: Timer
Session-Expires: 1800;refresher=uac
Allow: INVITE,ACK,CANCEL,BYE,REFER,MESSAGE,SUBSCRIBE,NOTIFY,PUBLISH

SDP PARAMETERS

c= IN IP6 5555::aaa:bbb:ccc:ddd
m= audio 3456 RTP/AVP 97
a= Rtpmap:97 AMR
a= rtcp:5560
m= application 2000 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

4. **SIP 100 "Trying" response (from PoC Server A to SIP/IP Core A)**
The PoC Server A sends a SIP 100 "Trying" response to the SIP/IP Core A.
5. **SIP INVITE request (from PoC Server A to SIP/IP Core A)**
Using the PoC Session Identity the PoC Server A determines that the Group PoC Session is owned by another PoC Server and sends the SIP INVITE request to the SIP/IP Core A. The SIP INVITE request includes the PoC Session Identity in the Request-URI.

Request-URI sip:PoC-ServerA@networkA.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *,+g.poc.talkburst; require;explicit
User-Agent: PoC-serv/OMA1.0
Privacy: Id
Contact: <sip:PoC-ClientA@networkA.net>
Supported: Timer

Session-Expires: 1800;refresher=uac

Allow: INVITE,ACK,CANCEL,BYE,REFER,MESSAGE,SUBSCRIBE,NOTIFY,PUBLISH

SDP PARAMETERS

c= IN IP6 50555::ccc:ddd:aaa:bbb

m= audio 53456 RTP/AVP 97 98

a= Rtpmap:97 AMR

a= Rtpmap:98 EVRC/8000

a= rtcp:53080

m= Application 50000 udp TBCP

a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

6. **SIP 100 "Trying" response (from SIP/IP Core A to PoC Server A)**
The SIP/IP Core A sends a SIP 100 "Trying" response to the PoC Server A.
7. **SIP INVITE request (from SIP/IP Core A to SIP/IP Core X)**
Based on the PoC Session Identity in the Request-URI the SIP/IP Core A sends the SIP INVITE request to the SIP/IP Core X.

Request-URI sip:PoC-ServerA@networkA.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *,+g.poc.talkburst; require;explicit

User-Agent: PoC-serv/OMA1.0

Privacy: Id

Contact: <sip:PoC-ClientA@networkA.net>

Supported: Timer

Session-Expires: 1800;refresher=uac

Allow: INVITE,ACK,CANCEL,BYE,REFER,MESSAGE,SUBSCRIBE,NOTIFY,PUBLISH

SDP PARAMETERS

c= IN IP6 50555::ccc:ddd:aaa:bbb

m= audio 53456 RTP/AVP 97 98
a= Rtpmap:97 AMR
a= Rtpmap:98 EVRC/8000
a= rtcp:53080
m= Application 50000 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

8. **SIP 100 "Trying" response (from SIP/IP Core X to SIP/IP Core A)**
The SIP/IP Core X sends a SIP 100 "Trying" response to the SIP/IP Core A.
9. **SIP INVITE request (from SIP/IP Core X to PoC Server X)**
The SIP/IP Core X sends the SIP INVITE request to the PoC Server X.

Request-URI sip:PoC-ServerA@networkA.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *,+g.poc.talkburst; require;explicit
User-Agent: PoC-serv/OMA1.0
Privacy: Id
Contact: <sip:PoC-ClientA@networkA.net>
Supported: Timer
Session-Expires: 1800;refresher=uac
Allow: INVITE,ACK,CANCEL,BYE,REFER,MESSAGE,SUBSCRIBE,NOTIFY,PUBLISH

SDP PARAMETERS

c= IN IP6 50555::ccc:ddd:aaa:bbb
m= audio 53456 RTP/AVP 97 98
a= Rtpmap:97 AMR
a= Rtpmap:98 EVRC/8000
a= rtcp:53080
m= Application 50000 udp TBCP

a= ftmp:TBCP queuing=1; tb_priority=2; timestamp=1

10. SIP 100 "Trying" response (from PoC Server X to SIP/IP Core X)

The PoC Server X sends the SIP 100 "Trying" response to the SIP/IP Core X.

11. SIP 200 "OK" response (from PoC Server X to SIP/IP Core X)

The PoC Server X authorizes the PoC Client A to rejoin to the PoC Group Session and sends the SIP 200 "OK" response to the SIP/IP Core.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerX@networkX.net>
Contact: <sip:PoC-ServerX@networkX.net>
Server: PoC-serv/OMA1.0
Require: Timer
Session-Expires: 1800;refresher=uas
Allow: INVITE,ACK,CANCEL,BYE,PRACK, UPDATE, REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

SDP PARAMETERS

c= IN IP6 96666::eee: aaa:bbb:fff
m= audio 96525 RTP/AVP 98
a= Rtpmap:98 EVRC/8000
a= rtcp:96000
m= application 96000 udp TBCP
a= ftmp:TBCP queuing=1; tb_priority=2; timestamp=1

12. SIP 200 "OK" response (from SIP/IP Core X to SIP/IP Core A)

The SIP/IP Core X sends the SIP 200 "OK" response to the SIP/IP Core A.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerX@networkX.net>
Contact <sip:PoC-ServerX@networkX.net>
Server: PoC-serv/OMA1.0
Require: Timer
Session-Expires: 1800;refresher=uas
Allow: INVITE,ACK,CANCEL,BYE,PRACK, UPDATE,

REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

SDP PARAMETERS

c= IN IP6 96666::eee: aaa:bbb:fff
 m= audio 96525 RTP/AVP 98
 a= Rtpmap:98 EVRC/8000
 a= rtcp:96000
 m= application 96000 udp TBCP
 a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

13. SIP 200 "OK" response (from SIP/IP Core A to PoC Server A)

The SIP/IP Core A sends the SIP 200 "OK" response to the SIP/IP Core A.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerX@networkX.net>
Contact <sip:PoC-ServerX@networkX.net >
Server: PoC-serv/OMA1.0
Require: Timer
Session-Expires: 1800;refresher=uas
Allow: INVITE,ACK,CANCEL,BYE,PRACK, UPDATE,
 REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

SDP PARAMETERS

c= IN IP6 96666::eee: aaa:bbb:fff
 m= audio 96525 RTP/AVP 98
 a= Rtpmap:98 EVRC/8000
 a= rtcp:96000
 m= application 96000 udp TBCP
 a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

14. SIP 200 "OK" response (from PoC Server A to SIP/IP Core A)

The PoC Server A sends the SIP 200 "OK" response to SIP/IP Core A.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerX@networkX.net>
Contact <sip:PoC-ServerA@networkA.net >

Server: PoC-serv/OMA1.0
Require: Timer
Session-Expires: 1800;refresher=uas
Allow: INVITE,ACK,CANCEL,BYE,PRACK, UPDATE,
 REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

SDP PARAMETERS

c= IN IP6 57777::eee:fff:aaa:bbb
 m= audio 57787 RTP/AVP 98
 a= Rtpmap:98 EVRC/8000
 a= rtcp:57000
 m= application 57790 udp TBCP
 a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

15. SIP 200 "OK" response (from SIP/IP Core A to PoC Client A)

The SIP/IP Core A sends the SIP 200 "OK" response to the PoC Client A.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerX@networkX.net>
Contact <sip:PoC-ServerA@networkA.net >
Server: PoC-serv/OMA1.0
Require: Timer
Session-Expires: 1800;refresher=uas
Allow: INVITE,ACK,CANCEL,BYE,PRACK, UPDATE,
 REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

SDP PARAMETERS

c= IN IP6 57777::eee:fff:aaa:bbb
 m= audio 57787 RTP/AVP 98
 a= Rtpmap:98 EVRC/8000
 a= rtcp:57000
 m= application 57790 udp TBCP
 a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

16. SIP ACK request (PoC Client A to SIP/IP Core A)

The PoC Client A acknowledges the SIP 200 "OK" response with a SIP ACK request sent to the SIP/IP Core A.

17. SIP ACK request (SIP/IP Core A to PoC Server A)

The SIP/IP Core A forwards the SIP ACK request to the PoC Server A.

18. SIP ACK request (SIP/IP Core A to SIP/IP Core X)

The SIP/IP Core A forwards the SIP ACK request to the SIP/IP Core X.

19. SIP ACK request (SIP/IP Core A to SIP/IP Core X)

The SIP/IP Core A forwards the SIP ACK request to the SIP/IP Core X.

20. SIP ACK request (SIP/IP Core X to PoC Server X)

The SIP/IP Core X forwards the SIP ACK request to the PoC Server X.

A. TBCP Talk Burst Granted message (from PoC Server X to PoC Server A)

The PoC Server X sends a TBCP Talk Burst Granted message (other alternatives are TBCP Talk Burst Deny message or TBCP Talk Burst Idle message) to the PoC Server A.

B. TBCP Talk Burst Granted message (from PoC Server A to PoC Client A)

The PoC Server A sends the TBCP Talk Burst Granted message to the PoC Client A.

C. RTP Media from PoC Client A to PoC Server A

The PoC Client A sends the RTP Media to the PoC Server A.

D. RTP Media from PoC Server A to PoC Server X

The PoC Server A sends the RTP Media to the PoC Server X.

F.7 Joining a Chat PoC Group Session

F.7.1 Using on-demand signaling

This subclause describes the successful joining to an ongoing Chat Group PoC Session using On-demand signaling.

NOTE: The signaling flow is valid for joining an ongoing Pre-arranged PoC Group Session or a Chat Group Session. Joining a Pre-arranged Group Session case is a special case and happens when a PoC User makes an attempt to initiate a Pre-arranged PoC Group Session but a PoC Session is already ongoing for that Pre-arranged Group.

Figure 13 "*Joining a Chat PoC Group Session*" shows the signaling flow for the scenario:

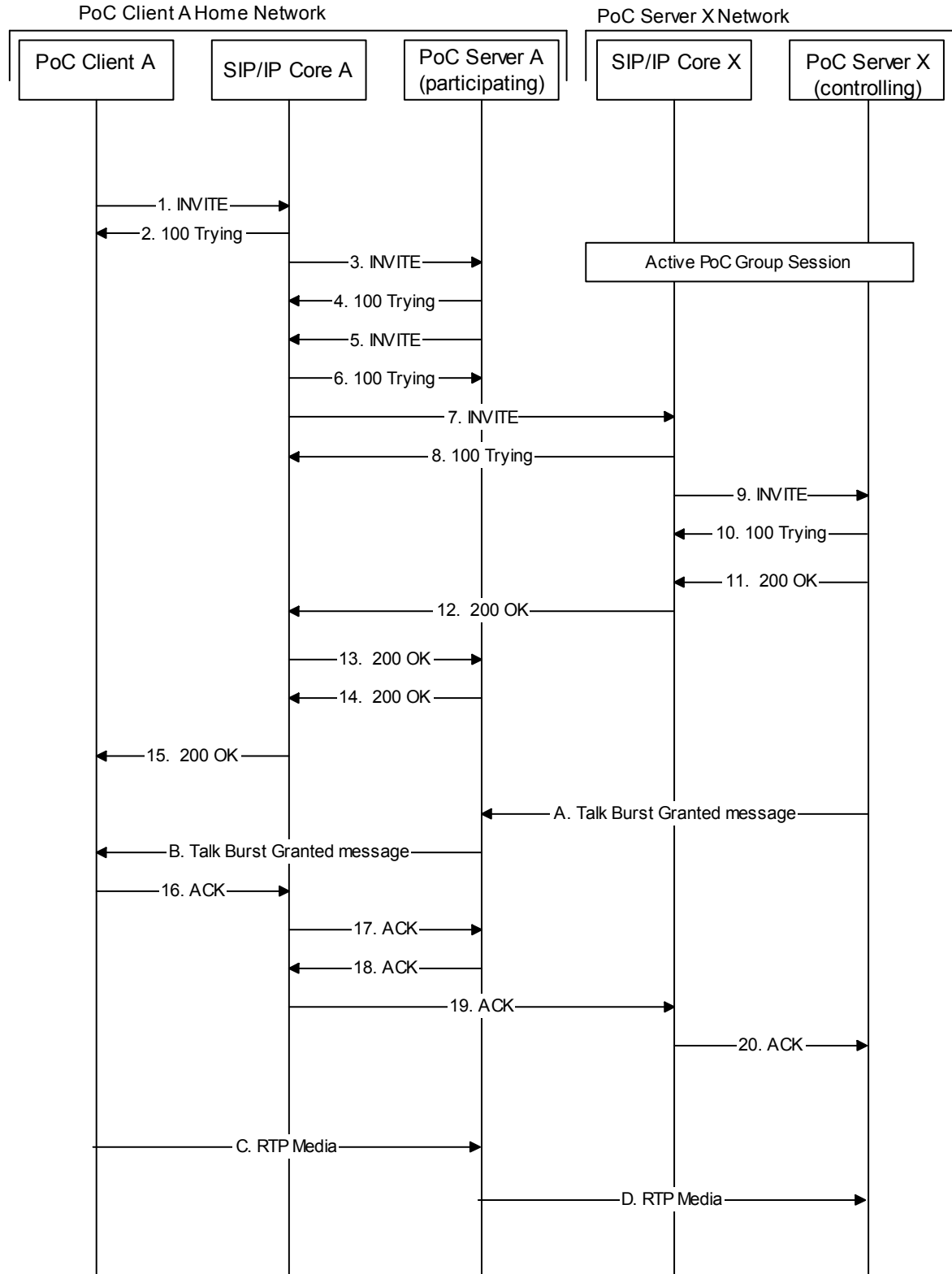


Figure 13: Joining a Chat PoC Group Session.

The steps of the flows are as follows:

1. SIP INVITE request (from PoC Client A to SIP/IP Core A)

The PoC Client receives a request from the PoC User to join a Group PoC Session and sends a SIP INVITE request to the SIP/IP Core A. The SIP INVITE request includes the PoC Group Identity in the Request-URI.

Request-URI Sip:OMA-Golf-buddies@networkX.net

SIP HEADERS

P-Preferred-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *,+g.poc.talkburst; require;explicit
User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01
Privacy: id
Contact: <sip:PoC-ClientA@networkA.net>
Supported: timer
Session-Expires: 1800;refresher=uac
Allow: INVITE,ACK,CANCEL,BYE,REFER,MESSAGE,SUBSCRIBE,
 NOTIFY,PUBLISH

SDP PARAMETERS

c= IN IP6 5555::aaa:bbb:ccc:ddd
m= audio 3456 RTP/AVP 97
a= rtpmap:97 AMR
a= rtcp:5560
m= application 2000 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

2. SIP 100 "Trying" response (from SIP/IP Core A to PoC Client A)

The SIP/IP Core A sends a SIP 100 "Trying" response to the PoC Client A.

3. SIP INVITE request (from SIP/IP Core A to PoC Server A)

The SIP/IP Core A sends the SIP INVITE request to the PoC Server A.

Request-URI sip:OMA-Golf-buddies@networkX.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *,+g.poc.talkburst; require;explicit
User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01
Privacy: id
Contact: <sip:PoC-ClientA@networkA.net>
Supported: timer
Session-Expires: 1800;refresher=uac
Allow: INVITE,ACK,CANCEL,BYE,REFER,MESSAGE,SUBSCRIBE,NOTIFY,PUBLISH

SDP PARAMETERS

c= IN IP6 5555::aaa:bbb:ccc:ddd
m= audio 3456 RTP/AVP 97
a= rtpmap:97 AMR
a= rtcp:5560
m= application 2000 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

4. SIP 100 "Trying" response (from PoC Server A to SIP/IP Core A)

The PoC Server A sends a SIP 100 "Trying" response to the SIP/IP Core A.

5. SIP INVITE request (from PoC Server A to SIP/IP Core A)

Using the PoC Group Identity the PoC Server A determines that the Chat PoC Group is owned by another PoC Server and sends the SIP INVITE request to the SIP/IP Core A. The SIP INVITE request includes the PoC Group Identity in the Request-URI.

Request-URI sip:OMA-Golf-buddies@networkX.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *,+g.poc.talkburst; require;explicit
User-Agent: PoC-serv/OMA1.0
Privacy: id
Contact: <sip:PoC-ClientA@networkA.net>

Supported: timer

Session-Expires: 1800;refresher=uac

Allow: INVITE,ACK,CANCEL,BYE,REFER,MESSAGE,SUBSCRIBE,NOTIFY,PUBLISH

SDP PARAMETERS

c= IN IP6 50555::ccc:ddd:aaa:bbb

m= audio 53456 RTP/AVP 97 98

a= rtpmap:97 AMR

a= rtpmap:98 EVRC/8000

a= rtcp:53080

m= Application 50000 udp TBCP

a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

6. SIP 100 "Trying" response (from SIP/IP Core A to PoC Server A)

The SIP/IP Core A sends a SIP 100 "Trying" response to the PoC Server A.

7. SIP INVITE request (from SIP/IP Core A to SIP/IP Core X)

Based on the PoC Group Identity in the Request-URI the SIP/IP Core A sends the SIP INVITE request to the SIP/IP Core X.

Request-URI sip:OMA-Golf-buddies@networkX.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *,+g.poc.talkburst; require;explicit

User-Agent: PoC-serv/OMA1.0

Privacy: id

Contact: <sip:PoC-ServerA@networkA.net>

Supported: timer

Session-Expires: 1800;refresher=uac

Allow: INVITE,ACK,CANCEL,BYE,REFER,MESSAGE,SUBSCRIBE,NOTIFY,PUBLISH

SDP PARAMETERS

c= IN IP6 50555::ccc:ddd:aaa:bbb
m= audio 53456 RTP/AVP 97 98
a= rtpmap:97 AMR
a= rtpmap:98 EVRC/8000
a= rtcp:53080
m= Application 50000 udp TBCP
a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

8. SIP 100 "Trying" response (from SIP/IP Core X to SIP/IP Core A)

The SIP/IP Core X sends a SIP 100 "Trying" response to the SIP/IP Core A.

9. SIP INVITE request (from SIP/IP Core X to PoC Server X)

The SIP/IP Core X sends the SIP INVITE request to the PoC Server X.

Request-URI sip:OMA-Golf-buddies@networkX.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *,+g.poc.talkburst; require;explicit
User-Agent: PoC-serv/OMA1.0
Privacy: id
Contact: <sip:PoC-ServerA@networkA.net>
Supported: timer
Session-Expires: 1800;refresher=uac
Allow: INVITE,ACK,CANCEL,BYE,REFER,MESSAGE,SUBSCRIBE,NOTIFY,PUBLISH

SDP PARAMETERS

c= IN IP6 50555::ccc:ddd:aaa:bbb
m= audio 53456 RTP/AVP 97 98
a= rtpmap:97 AMR
a= rtpmap:98 EVRC/8000
a= rtcp:53080
m= Application 50000 udp TBCP

a= ftmp:TBCP queuing=1; tb_priority=2; timestamp=1

10. SIP 100 "Trying" response (from PoC Server X to SIP/IP Core X)

The PoC Server X sends the SIP 100 "Trying" response to the SIP/IP Core X.

11. SIP 200 "OK" response (from PoC Server X to SIP/IP Core X)

The PoC Server X authorizes the PoC Client A to rejoin to the PoC Group Session and sends the SIP 200 "OK" response to the SIP/IP Core.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerX@networkX.net>
Contact <sip:PoC-ServerX@networkX.net >
Server: PoC-serv/OMA1.0
Require: timer
Session-Expires: 1800;refresher=uas
Allow: INVITE,ACK,CANCEL,BYE,PRACK, UPDATE, REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

SDP PARAMETERS

c= IN IP6 96666::eee: aaa:bbb:fff
m= audio 96525 RTP/AVP 98
a= rtpmap:98 EVRC/8000
a= rtcp:96000
m= application 96000 udp TBCP
a= ftmp:TBCP queuing=1; tb_priority=2; timestamp=1

12. SIP 200 "OK" response (from SIP/IP Core X to SIP/IP Core A)

The SIP/IP Core X sends the SIP 200 "OK" response to the SIP/IP Core A.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerX@networkX.net>
Contact <sip:PoC-ServerX@networkX.net >
Server: PoC-serv/OMA1.0

Require: timer

Session-Expires: 1800;refresher=uas

Allow: INVITE,ACK,CANCEL,BYE,PRACK, UPDATE, REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

SDP PARAMETERS

c= IN IP6 96666::eee: aaa:bbb:fff

m= audio 96525 RTP/AVP 98

a= rtpmap:98 EVRC/8000

a= rtcp:96000

m= application 96000 udp TBCP

a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

13. SIP 200 "OK" response (from SIP/IP Core A to PoC Server A)

The SIP/IP Core A sends the SIP 200 "OK" response to the PoC Server A.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerX@networkX.net>

Contact <sip:PoC-ServerX@networkX.net >

Server: PoC-serv/OMA1.0

Require: timer

Session-Expires: 1800;refresher=uas

Allow: INVITE,ACK,CANCEL,BYE,PRACK, UPDATE, REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

SDP PARAMETERS

c= IN IP6 96666::eee: aaa:bbb:fff

m= audio 96525 RTP/AVP 98

a= rtpmap:98 EVRC/8000

a= rtcp:96000

m= application 96000 udp TBCP

a= fmp: TBCP queuing=1; tb_priority=2; timestamp=1

14. SIP 200 "OK" response (from PoC Server A to SIP/IP Core A)

The PoC Server A sends the SIP 200 "OK" response to SIP/IP Core A.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerX@networkX.net>
Contact <sip:PoC-ServerA@networkA.net >
Server: PoC-serv/OMA1.0
Require: timer
Session-Expires: 1800;refresher=uas
Allow: INVITE,ACK,CANCEL,BYE,PRACK, UPDATE, REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

SDP PARAMETERS

c= IN IP6 57777::eee:fff:aaa:bbb
m= audio 57787 RTP/AVP 98
a= rtpmap:98 EVRC/8000
a= rtcp:57000
m= application 57790 udp TBCP
a= fmp:TBCP queuing=1; tb_priority=2; timestamp=1

15. SIP 200 "OK" response (from SIP/IP Core A to PoC Client A)

The SIP/IP Core A sends the SIP 200 "OK" response to the PoC Client A.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerX@networkX.net>
Contact <sip:PoC-ServerA@networkA.net >
Server: PoC-serv/OMA1.0
Require: timer
Session-Expires: 1800;refresher=uas
Allow: INVITE,ACK,CANCEL,BYE,PRACK, UPDATE, REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

SDP PARAMETERS

```

c=          IN IP6 57777::eee:fff:aaa:bbb
m=          audio 57787 RTP/AVP 98
a=          rtpmap:98 EVRC/8000
a=          rtcp:57000
m=          application 57790 udp TBCP
a=          fmp: TBCP queuing=1; tb_priority=2; timestamp=1

```

A. TBCP Talk Granted message (from PoC Server X to PoC Server A)

The PoC Server X sends a TBCP Talk Burst Granted message (other alternatives are TBCP Talk Burst Deny message or TBCP Talk Burst Idle message) to the PoC Server A.

B. TBCP Talk Burst Granted (from PoC Server A to PoC Client A)

The PoC Server A sends the TBCP Talk Burst Granted message to the PoC Client A.

16. SIP ACK request (PoC Client A to SIP/IP Core A)

The PoC Client A acknowledges the SIP 200 "OK" response with a SIP ACK request sent to the SIP/IP Core A.

17. SIP ACK request (SIP/IP Core A to PoC Server A)

The SIP/IP Core A forwards the SIP ACK request to the PoC Server A.

18. SIP ACK request (PoC Server A to SIP/IP Core A)

PoC Server A forwards the SIP ACK request to SIP/IP core A.

19. SIP ACK request (SIP/IP Core A to SIP/IP Core X)

The SIP/IP Core A forwards the SIP ACK request to the SIP/IP Core X.

20. SIP ACK request (SIP/IP Core X to PoC Server X)

The SIP/IP Core X forwards the SIP ACK request to the PoC Server X.

C. RTP Media from PoC Client A to PoC Server A

The PoC Client A sends the RTP Media to the PoC Server A.

D. RTP Media from PoC Server A to PoC Server X

The PoC Server A sends the RTP Media to the PoC Server X.

F.8 Canceling a PoC Session initialization

This subclause describes the message flow when a PoC Client A initiates a PoC Session and before the PoC Session is established the PoC Client cancels the PoC Session establishment.

F.8.1 Originating flow

This subclause shows the procedures for cancelling the PoC Session establishment on the originating side for the On-demand case when the PoC Server performing the Participating PoC Function acts as a B2BUA.

Figure 14 “Cancelling a PoC Session establishment, originating flow” shows the message flow for the scenario.

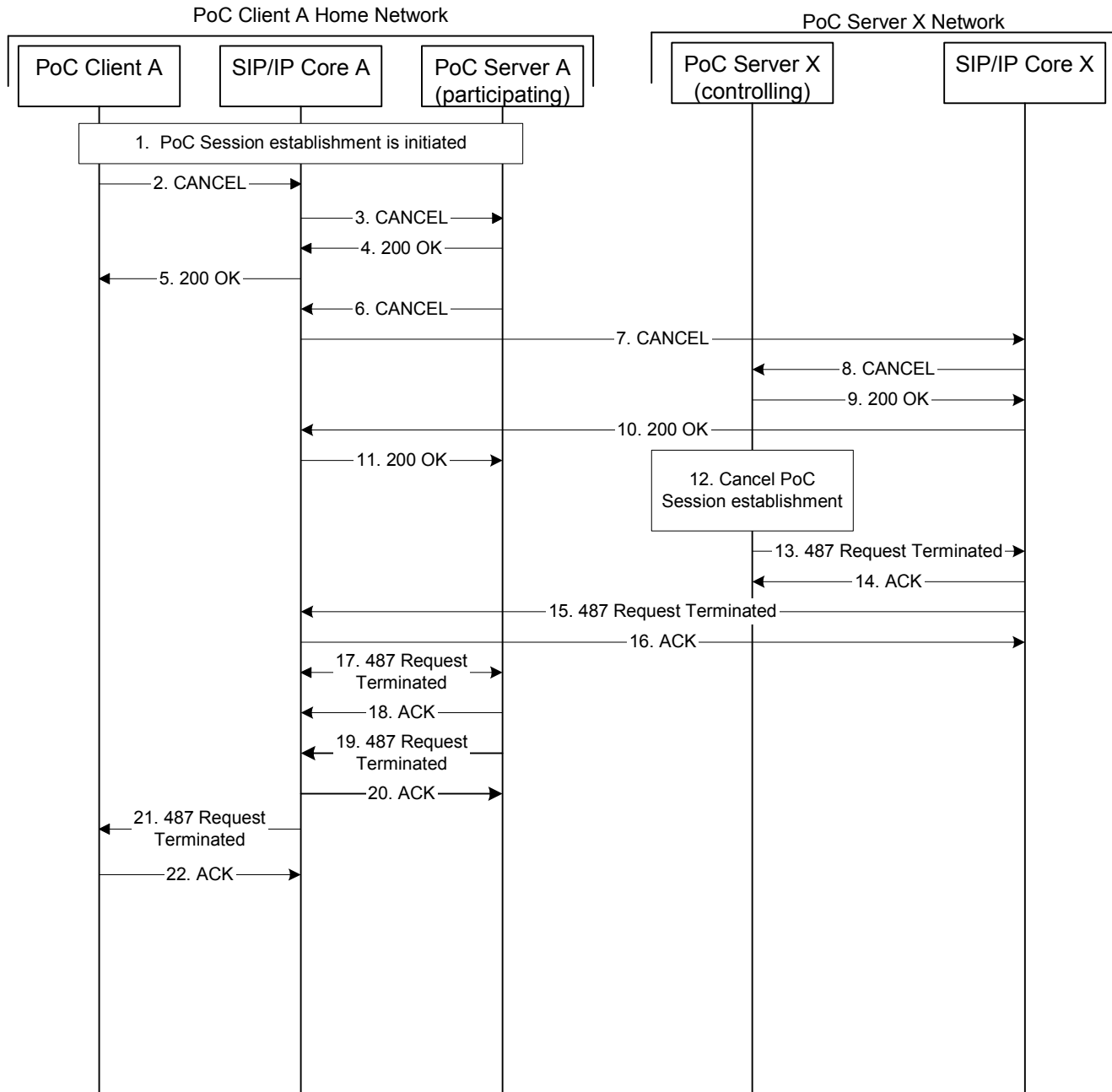


Figure 14: Cancelling a PoC Session establishment, originating flow.

The steps of the flows are as follows:

1. PoC Session establishment is initiated

The PoC Client A initiates the establishment of a PoC Session, e.g. a Pre-arranged PoC Group Session On-demand case..

2. SIP CANCEL request (from the PoC Client A to SIP/IP Core A)

3. SIP CANCEL request (from SIP/IP Core A to the PoC Server A)
4. SIP 200 “OK” response (from the PoC Server A to SIP/IP Core A)
5. SIP 200 “OK” response (from SIP/IP Core A to the PoC Client A)
6. SIP CANCEL request (from the PoC Server A to SIP/IP Core A)
7. SIP CANCEL request (from SIP/IP Core A to SIP/IP Core X)
8. SIP CANCEL request (from SIP/IP Core X to the PoC Server X)
9. SIP 200 “OK” response (from the PoC Server X to SIP/IP Core X)
10. SIP 200 “OK” response (from SIP/IP Core X to SIP/IP Core A)
11. SIP 200 “OK” response (from SIP/IP Core A to the PoC Server A)
12. Cancel PoC Session initialization

The PoC Server X cancels the invitation to the PoC Session for each Invited PoC Users as shown in subclause F.8.2 “*Terminating flow*”.

13. SIP 487 “Request Terminated” response (from the PoC Server X to SIP/IP Core X)
14. SIP ACK request (from SIP/IP Core X to the PoC Server X)
15. SIP 487 “Request Terminated” response (from SIP/IP Core X to the SIP/IP Core A)
16. SIP ACK request (from SIP/IP Core A to the SIP/IP Core X)
17. SIP 487 “Request Terminated” response (from SIP/IP Core A to the PoC Server A)
18. SIP ACK request (from the PoC Sever A to SIP/IP Core A)
19. SIP 487 “Request Terminated” response (from PoC Server A to the SIP/IP Core A)
20. SIP ACK request (from SIP / IP Core A to PoC Server A)
21. SIP 487 “Request Terminated” response (from SIP/IP Core A to the PoC Client A)
22. SIP ACK request (from the PoC Client A to SIP/IP Core A)

F.8.2 Terminating flow

This subclause shows the procedure for cancelling an invitation to a PoC Session for the On-demand Session case and when the PoC Server performing the Participating PoC Function acts as a B2BUA.

In the case more than one PoC User was invited the procedure is repeated for each Invited PoC User.

Figure 15 “*Cancelling a PoC Session establishment, terminating flow*” shows the signalling flow for the scenario.

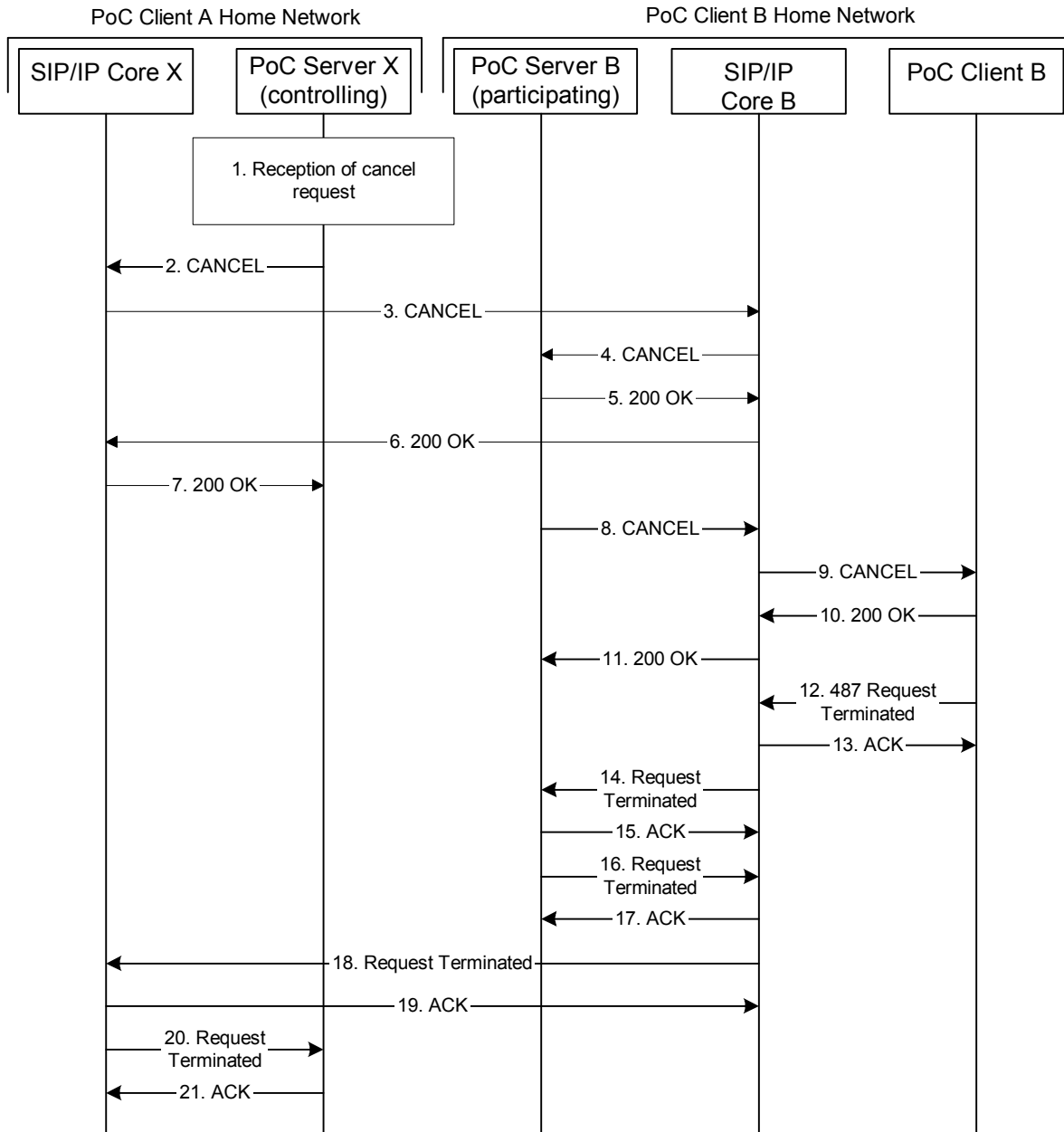


Figure 15: Cancelling a PoC Session establishment, terminating flow.

The steps of the flows are as follows:

1. Reception of a cancel request

The PoC Server X (controlling) receives a request to cancel all invitations to the PoC Session. Figure 14 “*Cancelling a PoC Session establishment, originating flow*” shows the signalling flow for the originating procedure.

2. SIP CANCEL request (from the PoC Server X to SIP/IP Core X)

3. SIP CANCEL request (from SIP/IP Core X to SIP/IP Core B)

4. SIP CANCEL request (from SIP/IP Core B to the PoC Server B)

5. SIP 200 “OK” response (from the PoC Server B to SIP/IP Core B)
6. SIP 200 “OK” response (from SIP/IP Core B to SIP/IP Core X)
7. SIP 200 “OK” response (from SIP/IP Core X to the PoC Server X)
8. SIP CANCEL request (from the PoC Server B to SIP/IP Core B)
9. SIP CANCEL request (from SIP/IP Core B to the PoC Client B)
10. SIP 200 “OK” response (from PoC Client B to SIP/IP Core B)
11. SIP 200 “OK” response (from SIP/IP Core B to the PoC Server B)
12. SIP 487 “Request Terminated” response (from the PoC Client B to SIP/IP Core B)
13. SIP ACK request (from SIP/IP Core B to the PoC Client B)
14. SIP 487 “Request Terminated” response (from SIP/IP Core B to the PoC Server B)
15. SIP ACK request (from the PoC Server B to SIP/IP Core B)
16. SIP 487 “Request Terminated” response (from PoC Server B to SIP/IP Core B)
17. SIP ACK request (from the SIP/IP Core B to the PoC Server B)
18. SIP 487 “Request Terminated” response (from SIP/IP Core B to SIP/IP Core X)
19. SIP ACK request (from SIP/IP Core X to SIP/IP Core X)
20. SIP 487 “Request Terminated” response (from SIP/IP Core X to the PoC Server X)

21. SIP ACK request (from the PoC Server X to SIP/IP Core X)

F.9 Leaving/Disconnecting from a PoC Session

This subclause describes the scenario when a PoC Client leaves a PoC Session.

F.9.1 Originating flow – On-demand Session case

This subclause shows the procedures for leaving PoC Session establishment on the originating side for the On-demand case when the PoC Server performing the Participating PoC Function acts as a B2BUA.

Figure 16 “Leaving a PoC Session, originating flow – On-demand Session case” shows the message flow for the scenario.

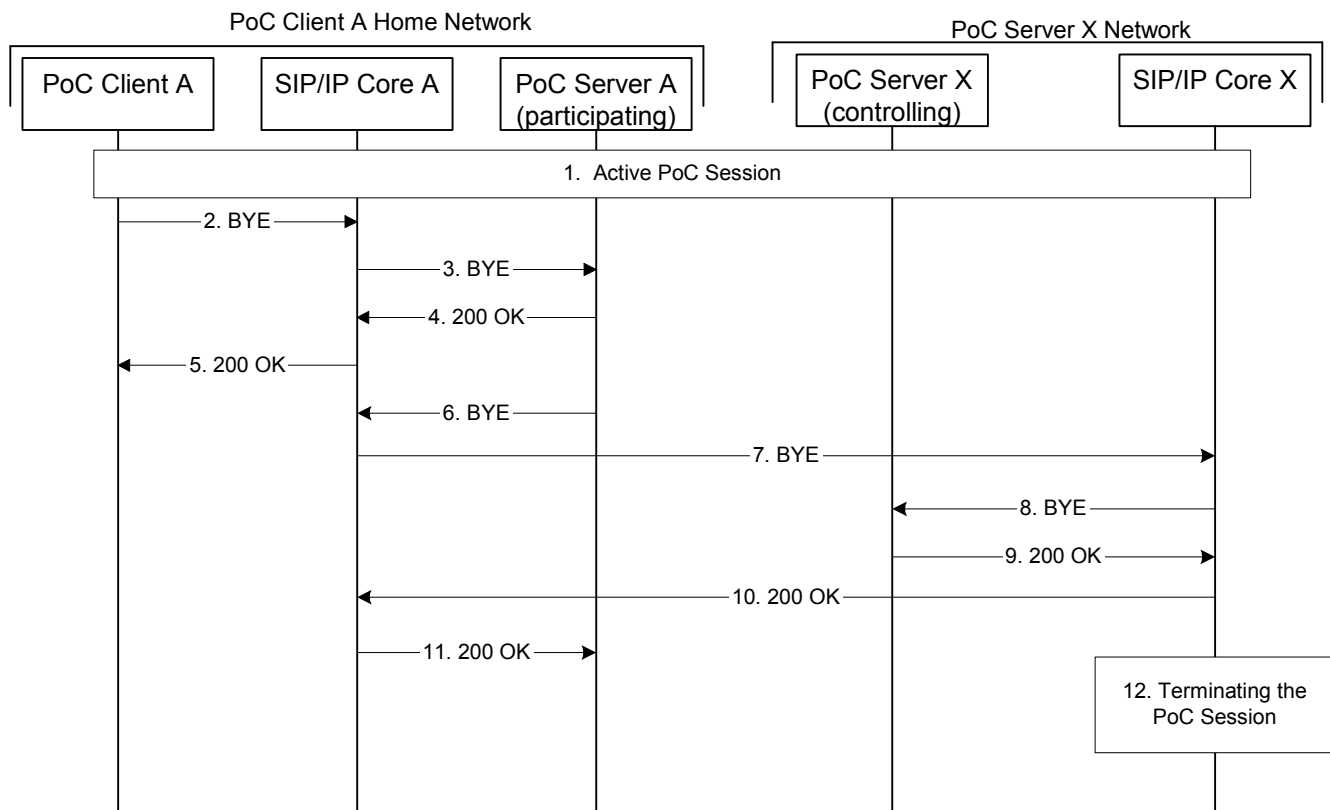


Figure 16: Leaving a PoC Session establishment, originating flow – On-demand Session case.

The steps of the flows are as follows:

1. Active PoC Session

An Active PoC Session exists and two or more PoC Participants is connected.

2. SIP BYE request (from the PoC Client A to SIP/IP Core A)

3. SIP BYE request (from SIP/IP Core A to the PoC Server A)

4. SIP 200 “OK” response (from the PoC Server A to SIP/IP Core A)

5. SIP 200 “OK” response (from SIP/IP Core A to the PoC Client A)
6. SIP BYE request (from the PoC Server A to SIP/IP Core A)
7. SIP BYE request (from SIP/IP Core A to SIP/IP Core X)
8. SIP BYE request (from SIP/IP Core X to the PoC Server X)
9. SIP 200 “OK” response (from the PoC Server X to SIP/IP Core X)
10. SIP 200 “OK” response (from SIP/IP Core X to SIP/IP Core A)
11. SIP 200 “OK” response (from SIP/IP Core A to the PoC Server A)

Terminating the PoC Session

Depending on the PoC Session termination policy the PoC Server X disconnects all PoC Participants from the PoC Session as shown in Figure 18 “*Disconnecting a PoC Participant from a PoC Session, terminating flow – On-demand Session case*” or Figure 19 “*Disconnecting a PoC Participant from a PoC Session, terminating flow – Pre-established Session case*”.

F.9.2 Originating flow – Pre-established Session case

This subclause shows the procedures for leaving PoC Session establishment on the originating side for the Pre-established case.

Figure 17 “*Leaving a PoC Session, originating flow – Pre-established Session case*” shows the message flow for the scenario.

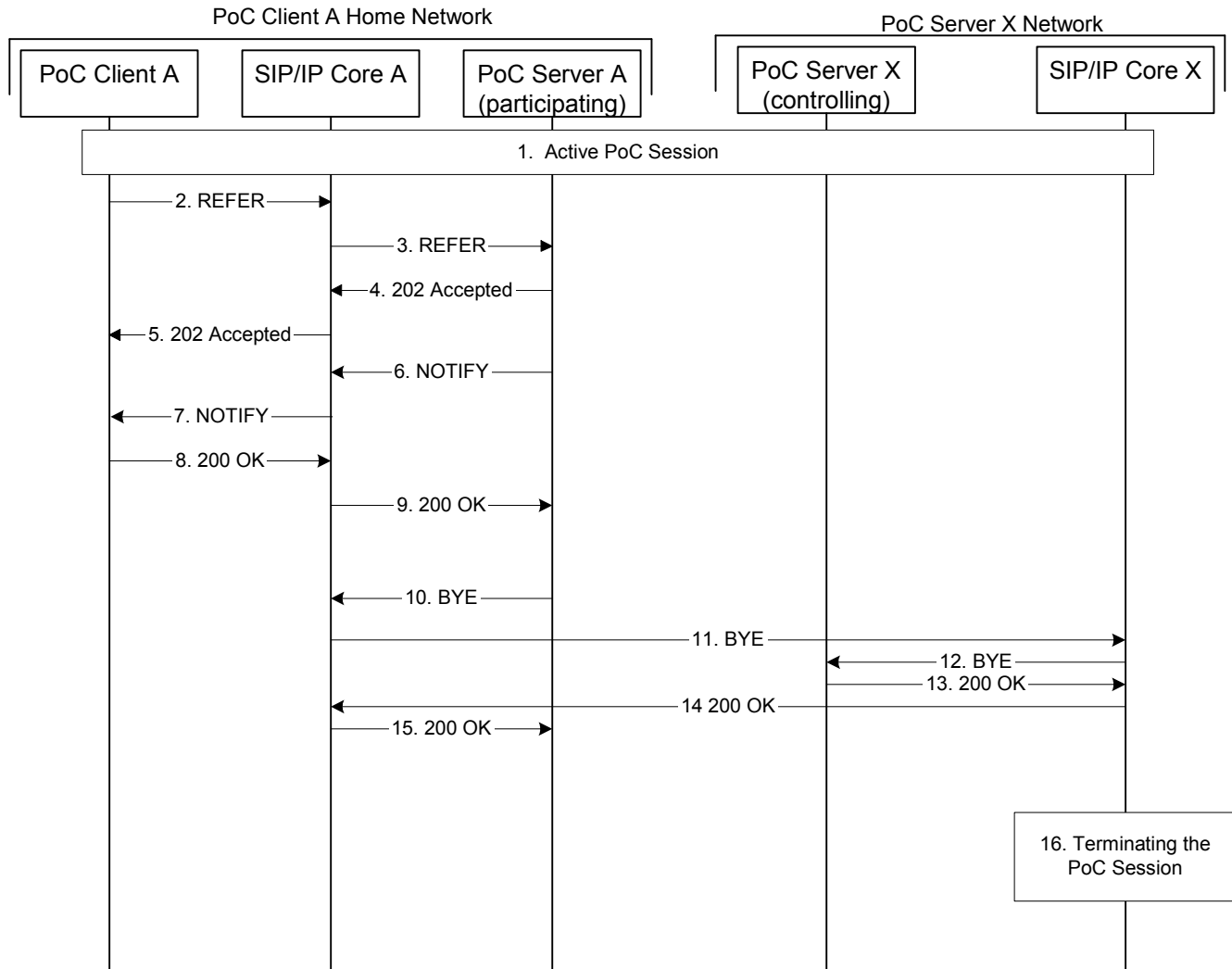


Figure 17: Leaving a PoC Session establishment, originating flow – Pre-established Session case.

The steps of the flows are as follows:

1. Active PoC Session

An Active PoC Session exists and two or more PoC Participants is connected.

2. SIP REFER/BYE request (from the PoC Client A to SIP/IP Core A)
3. SIP REFER/BYE request (from SIP/IP Core A to the PoC Server A)
4. SIP 202 “Accepted” response (from the PoC Server A to SIP/IP Core A)
5. SIP 202 “Accepted” response (from SIP/IP Core A to the PoC Client A)
6. SIP NOTIFY request (from the PoC Server A to SIP/IP Core A)

The PoC Server sends the SIP NOTIFY request towards the PoC Client A and at the same time the SIP BYE request (see step 10) towards the PoC Server performing the Controlling PoC Function.

7. SIP NOTIFY request (from SIP/IP Core A to the PoC Client A)

8. SIP 200 “OK” response (from the PoC Client A to SIP/IP Core A)
9. SIP 200 “OK” response (from SIP/IP Core A to the PoC Server A)
10. SIP BYE request (from the PoC Server A to SIP/IP Core A)
11. SIP BYE request (from SIP/IP Core A to SIP/IP Core X)
12. SIP BYE request (from SIP/IP Core X to the PoC Server X)
13. SIP 200 “OK” response (from the PoC Server X to SIP/IP Core X)
14. SIP 200 “OK” response (from SIP/IP Core X to SIP/IP Core A)
15. SIP 200 “OK” response (from SIP/IP Core A to the PoC Server A)

Terminating the PoC Session

Depending on the PoC Session termination policy the PoC Server X disconnects all PoC Participants from the PoC Session as shown in subclause F.9.3 “*Terminating flow – On-demand Session case*” or F.9.4 “*Terminating flow – Pre-established Session case*”.

F.9.3 Terminating flow – On-demand Session Case

This subclause shows the procedure for disconnecting a PoC Participant in an Active PoC Session for the On-demand Session case and when the PoC Server performing the Participating PoC Function acts as a B2BUA.

NOTE: In the case more than one PoC Participant is connected the procedure is repeated for each PoC Participant.

Figure 18 “*Disconnecting a PoC Participant from a PoC Session, terminating flow – On-demand Session case*” shows the signalling flow for the scenario.

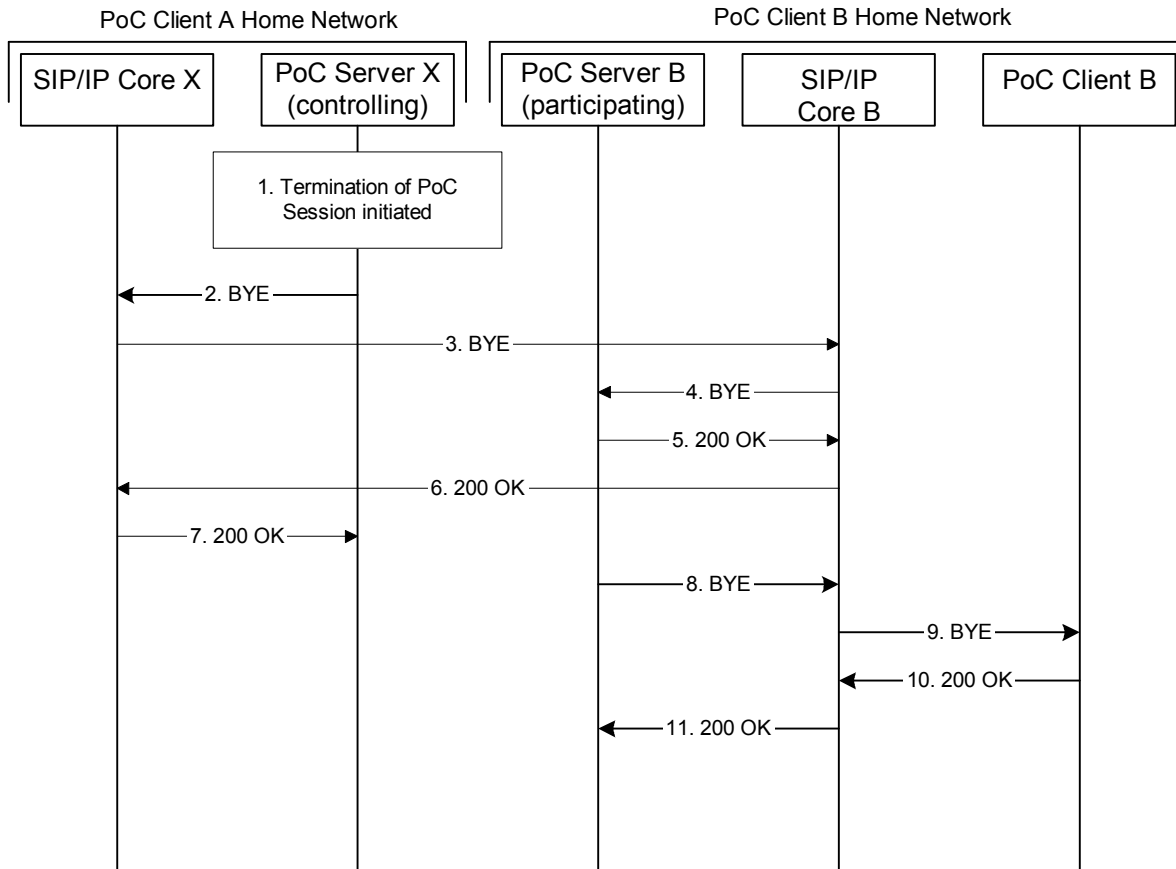


Figure 18: Disconnecting a PoC Participant from a PoC Session, terminating flow – On-demand Session case.

The steps of the flows are as follows:

1. Termination of PoC Session initiated

The PoC Server X (controlling) initiates the termination of the PoC Session, e.g. when a PoC Participant leaves the PoC Session. Figure 16 “*Leaving a PoC Session establishment, originating flow*” Figure 17 “*Leaving a PoC Session establishment, originating flow – Pre-established Session case*” shows the signalling flow for the originating procedure.

2. SIP BYE request (from the PoC Server X to SIP/IP Core X)

3. SIP BYE request (from SIP/IP Core X to SIP/IP Core B)

4. SIP BYE request (from SIP/IP Core B to the PoC Server B)

5. SIP 200 “OK” response (from the PoC Server B to SIP/IP Core B)

6. SIP 200 “OK” response (from SIP/IP Core B to SIP/IP Core X)

7. SIP 200 “OK” response (from SIP/IP Core X to the PoC Server X)

8. SIP BYE request (from the PoC Server B to SIP/IP Core B)

9. SIP BYE request (from SIP/IP Core B to the PoC Client B)

11. SIP 200 “OK” response (from PoC Client B to SIP/IP Core B)

12. SIP 200 “OK” response (from SIP/IP Core B to the PoC Server B)

F.9.4 Terminating flow – Pre-established Session Case

This subclause shows the procedure for disconnecting a PoC Participant in an Active PoC Session for the Pre-established Session case.

NOTE: In the case more than one PoC Participant is connected the procedure is repeated for each PoC Participant.

Figure 19 “Disconnecting a PoC Participant from a PoC Session, terminating flow – Pre-established Session case” shows the signalling flow for the scenario.

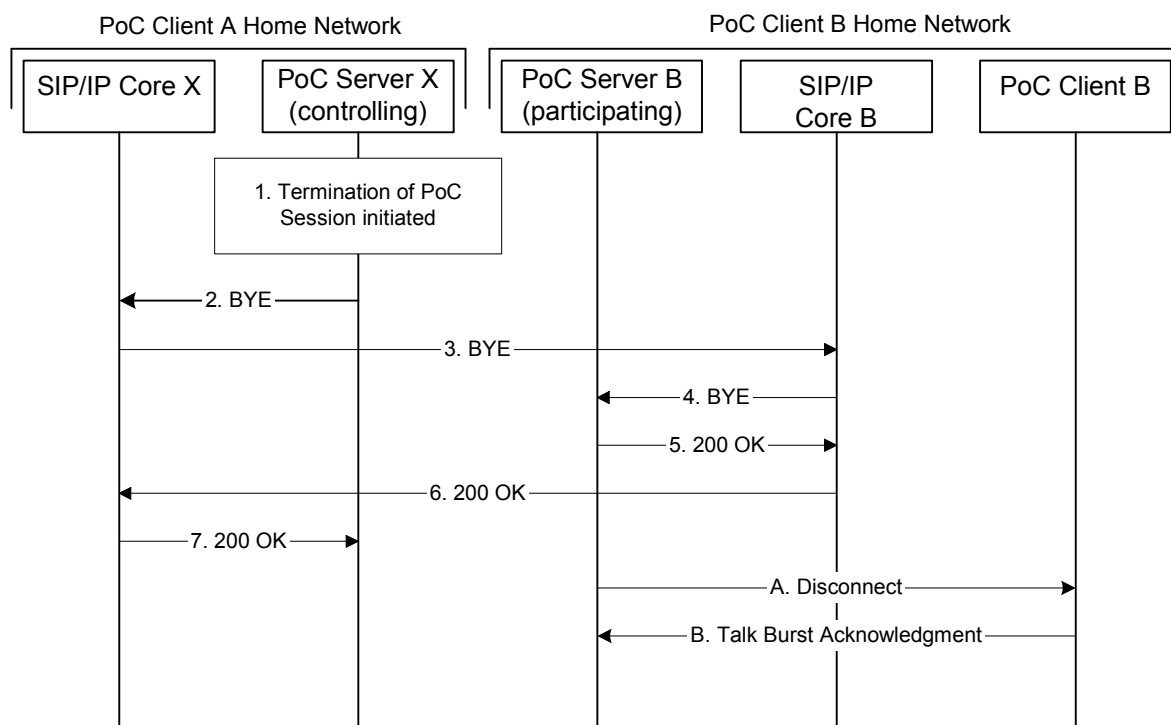


Figure 19: Disconnecting a PoC Participant from a PoC Session, terminating flow – Pre-established Session case.

The steps of the flows are as follows:

1. Termination of PoC Session initiated

The PoC Server X (controlling) initiates the termination of the PoC Session, e.g. when a PoC Participant leaves the PoC Session. Figure 16 “Leaving a PoC Session establishment, originating flow – On-demand Session case” or Figure 17 “Leaving a PoC Session establishment, originating flow – Pre-established Session case” shows the signalling flow for the originating procedure.

2. SIP BYE request (from the PoC Server X to SIP/IP Core X)

3. SIP BYE request (from SIP/IP Core X to SIP/IP Core B)

4. SIP BYE request (from SIP/IP Core B to the PoC Server B)

5. SIP 200 “OK” response (from the PoC Server B to SIP/IP Core B)

6. SIP 200 “OK” response (from SIP/IP Core B to SIP/IP Core X)

7. SIP 200 “OK” response (from SIP/IP Core X to the PoC Server X)

A. TBCP Disconnect message (from the PoC Server B to The PoC Client B)

B. TBCP Talk Burst Acknowledgment message (from PoC Client B to the PoC Server B)

F.10 Simultaneous PoC Sessions locking and priority setting

PoC Client A changes the locking and/or session priority parameters by sending a SIP UPDATE request or SIP re-INVITE request to the PoC Server.

The flow chart is valid for On-demand Session as well as for Pre-established Session case as specified in subclause 6.1.12 " *Simultaneous Session control procedures*".

Figure 20 "PoC Client A modifies the Simultaneous PoC Session parameters" shows how the PoC Client A is using the SIP re-INVITE request change the setting of the locking and/or the priority setting.

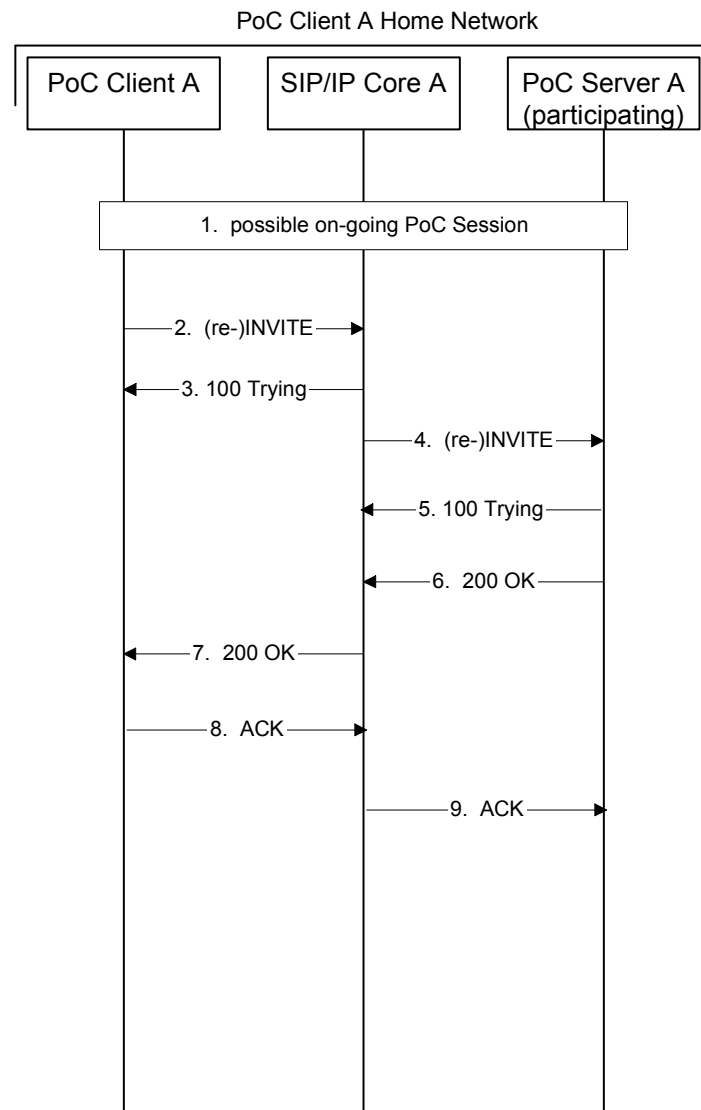


Figure 20: PoC Client A modifies the Simultaneous PoC Session parameters

The steps of the flows are as follows:

1. PoC Client A possible has a on-going PoC Session

PoC Client A possible has an on-going PoC Session established either on On-demand or Pre-established case.

2. SIP re-INVITE request (from PoC Client A to SIP/IP Core)

The SIP Client sends the SIP re-INVITE request to the SIP/IP Core A.

3. SIP re-INVITE request (from SIP/IP A Core to PoC Server A)

The SIP/IP Core forwards the SIP re-INVITE request to the PoC Server A (participating) according to the SIP/IP Core A routing principles.

4. SIP 200 "OK" response (from PoC Server A to SIP/IP Core A)

The PoC Server A analyses the Simultaneous PoC Sessions parameters and returns the agreed parameters as specified in subclause 7.3.1.12 "*Simultaneous PoC Session control procedures*".

5. SIP 200 "OK" response (from SIP/IP Core A to PoC Client A)

The SIP/IP Core A forwards the response to the PoC Client A. PoC Client A takes the parameter in the use as specified in subclause 6.1.12 "*Simultaneous Session control procedures*".

6. SIP ACK request (from PoC Client A to SIP/IP Core A)**7. SIP ACK request (from SIP/IP Core A to PoC Server A)**

F.11 Placing media on or off hold

The signaling flow is valid for placing media on or off hold as specified in the subclauses 6.1.4.2 “*PoC Client placing media on hold*” and 6.1.4.3 “*PoC Client placing media off hold*” and 7.2.1.7 “*PoC Session modification*”.

Prerequisite for the signaling flow is that the PoC Client has already an on-going PoC Session.

This flow is valid for On-demand as well as for Pre-established Session case.

Figure 21 “*Placing media on or off hold*” shows the signalling flow for the scenario.

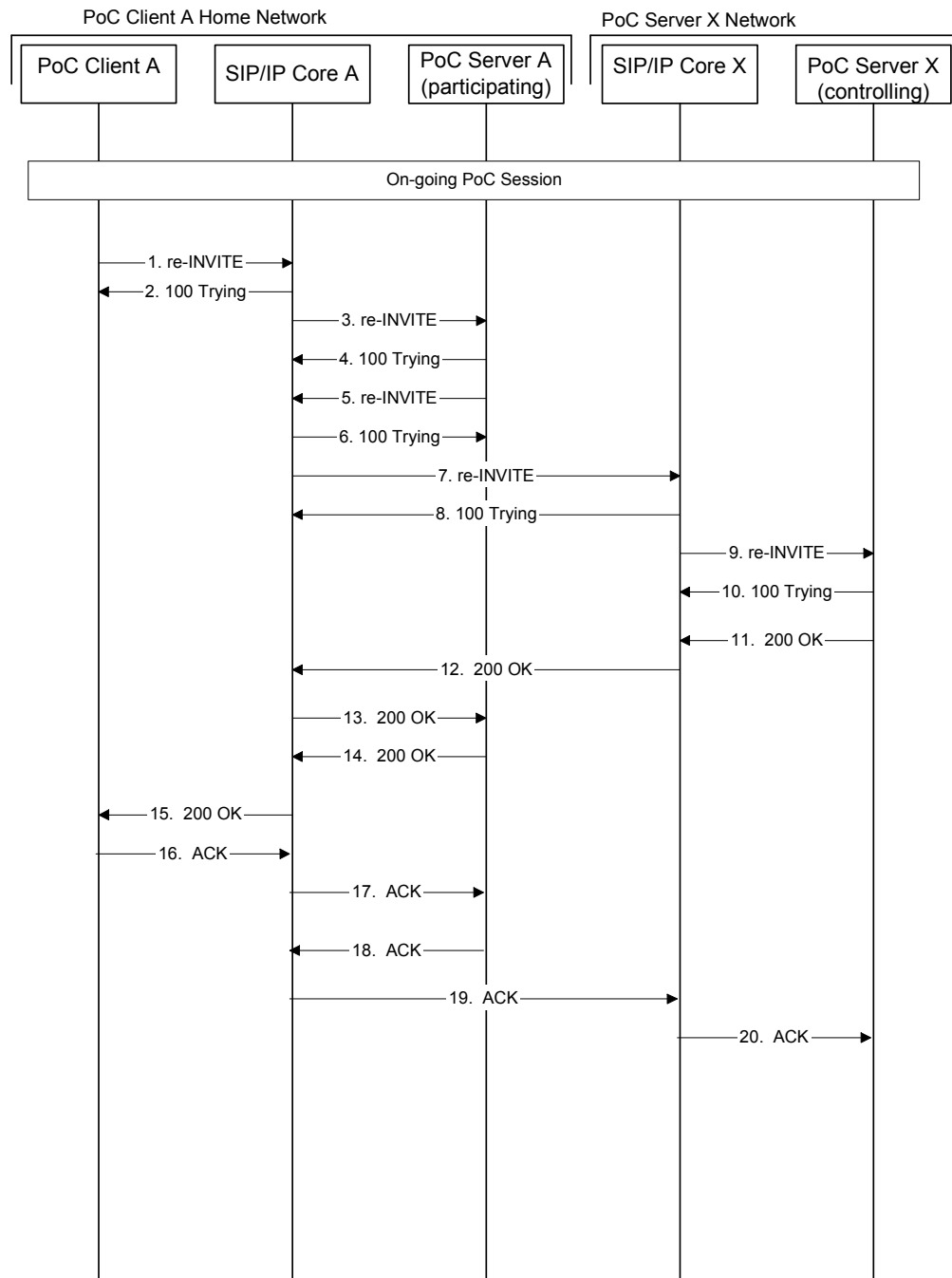


Figure 21: Placing media on or off hold.

The steps of the flows are as follows:

1. SIP re-INVITE request (from PoC Client A to SIP/IP Core A)

The PoC Client receives a request from a PoC User to place media on or off hold. The PoC Client sends a SIP re-INVITE request to the SIP/IP Core A.

2. SIP re-INVITE request (from SIP/IP Core A to PoC Server A)

The SIP/IP Core A sends the SIP re-INVITE request to the PoC Server A.

3. SIP UPDATE request (from PoC Server A to SIP/IP Core A)

Using the PoC Session Identity the PoC Server A determines that the Group PoC Session is owned by another PoC Server and sends the SIP UPDATE request to the SIP/IP Core A.

4. SIP UPDATE request (from SIP/IP Core A to SIP/IP Core X)

Based on the PoC Session Identity in the Request-URI the SIP/IP Core A sends the SIP UPDATE request to the SIP/IP Core X.

5. SIP UPDATE request (from SIP/IP Core X to PoC Server X)

The SIP/IP Core X sends the SIP UPDATE request to the PoC Server X.

6. SIP 200 "OK" response (from PoC Server X to SIP/IP Core X)

The PoC Server X authorizes the PoC Client A to place media on or off hold and sends the SIP 200 "OK" response to the SIP/IP Core.

7. SIP 200 "OK" response (from SIP/IP Core X to SIP/IP Core A)

The SIP/IP Core X sends the SIP 200 "OK" response to the SIP/IP Core A.

8. SIP 200 "OK" response (from SIP/IP Core A to PoC Server A)

The SIP/IP Core A sends the SIP 200 "OK" response to the SIP/IP Core A.

9. SIP 200 "OK" response (from PoC Server A to SIP/IP Core A)

The PoC Server A sends the SIP 200 "OK" response to SIP/IP Core A.

10. SIP 200 "OK" response (from SIP/IP Core A to PoC Client A)

The SIP/IP Core A sends the SIP 200 "OK" response to the PoC Client A.

11. SIP ACK request (from PoC Client A to SIP/IP Core A)

12. SIP ACK request (from SIP/IP Core A to PoC Client A)

F.12 Session modifications

PoC Server X modifies the Media Parameters of the PoC Session by sending a SIP re-INVITE or a SIP UPDATE request towards the terminating PoC Client B as specified in subclause 7.2.1.7 "*PoC Session modification*" and 6.2.2 "*PoC Client receiving a PoC Session modification request*".

Figure 22 "*PoC Session modifications*" shows the message flow for the scenario.

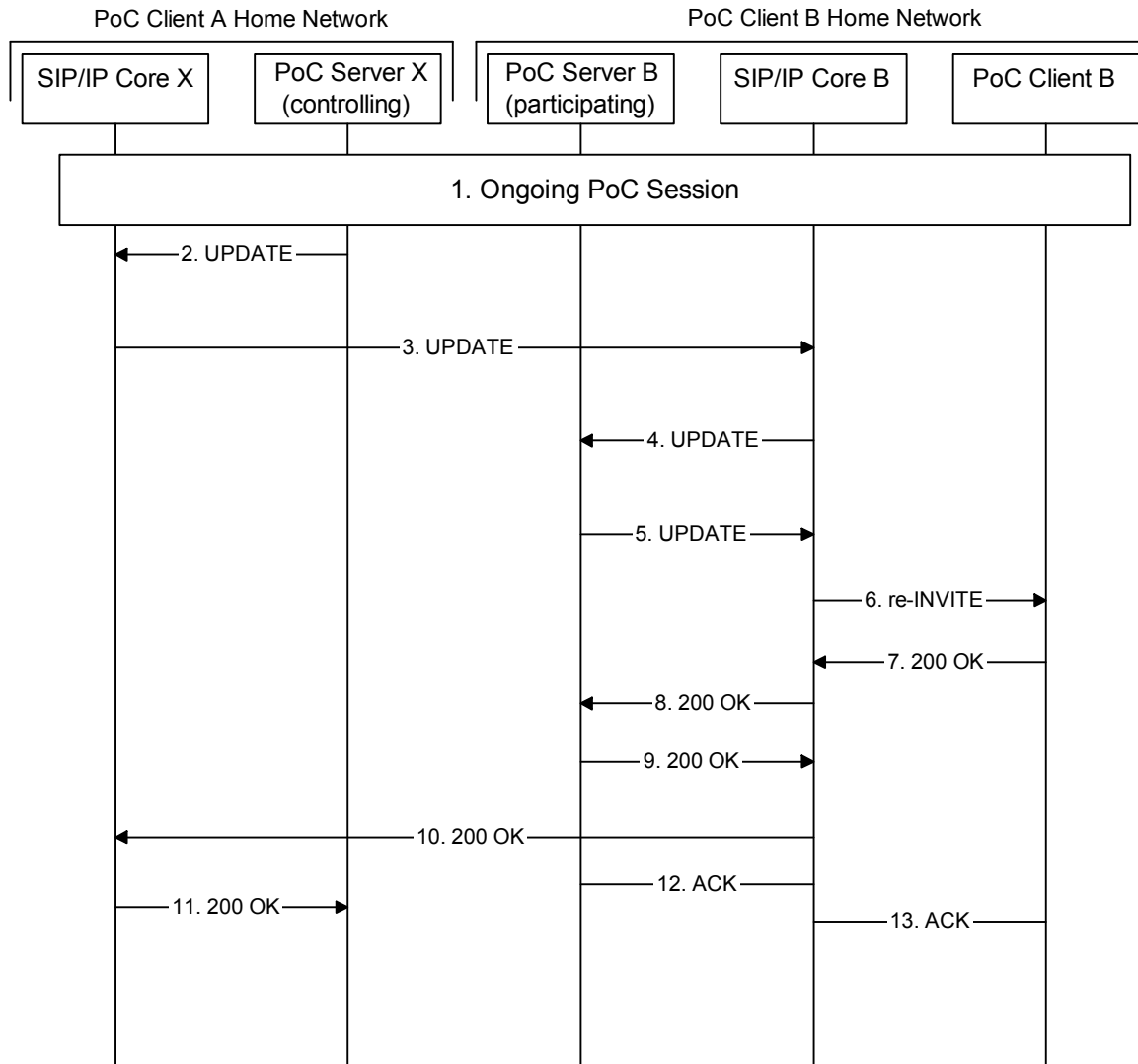


Figure 22: PoC Session modifications

The steps of the flow are as follows:

- 1. PoC Session is ongoing and PoC Server X decides to modify the Session**
- 2. SIP UPDATE request (from PoC Server X to SIP/IP Core X)**

PoC Server X is decided to modify the PoC Session by changing the Media Parameters. The PoC Server has learned during the establishment of the PoC Session that the PoC Server B supports the “UPDATE” method and sends a SIP UPDATE request towards PoC Client B.

- 3. SIP UPDATE request (from SIP/IP Core X to SIP/IP Core B)**
- 4. SIP UPDATE request (from SIP/IP Core B to PoC Server B)**
- 5. SIP re-INVITE request (from PoC Server B to SIP/IP Core B)**
- 6. SIP re-INVITE request (from SIP/IP Core B to PoC Client B)**

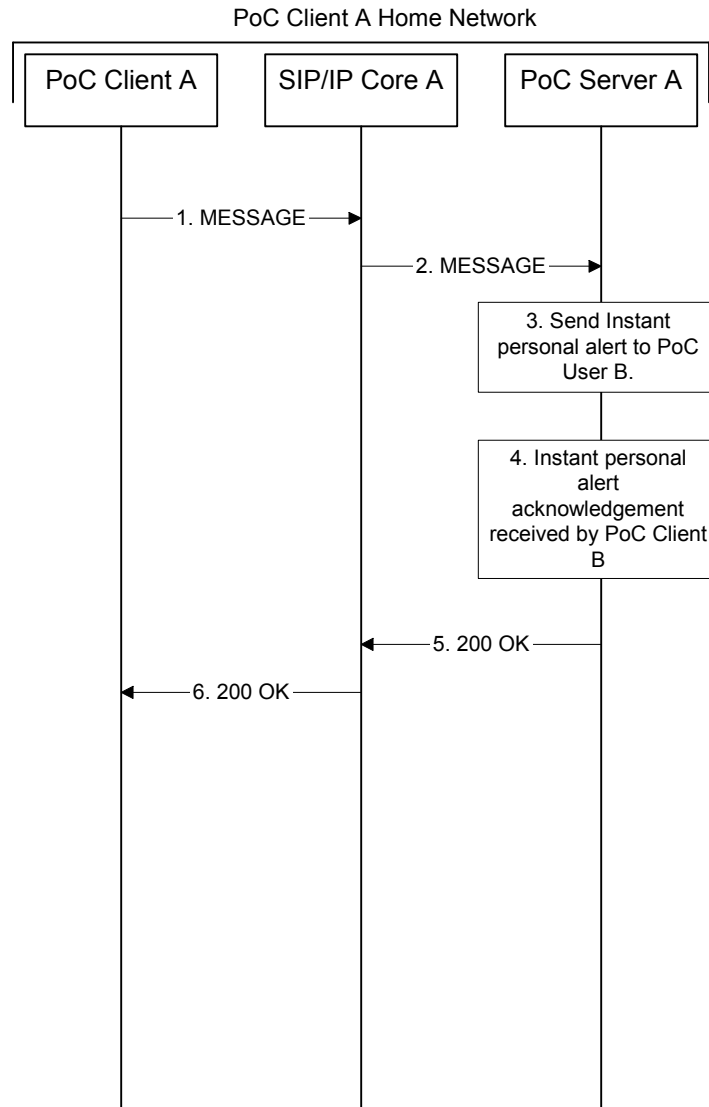
7. SIP 200 “OK” response (from PoC Client B to SIP/IP Core B)
8. SIP 200 “OK” response (from PoC Client B to PoC Server B)
9. SIP 200 “OK” response (from PoC Server B to SIP/IP Core B)
10. SIP 200 “OK” response (from SIP/IP Core B to SIP/IP Core X)
11. SIP 200 “OK” response (from SIP/IP Core X to PoC Server X)
12. SIP ACK request (from PoC Server B to SIP/IP Core B)
13. SIP ACK request (from SIP/IP Core to PoC Client B)

F.13 Instant Personal Alert

This subclause shows an example of how one PoC User can send an Instant Personal Alert to another PoC User. The example includes authorization and Access Control.

F.13.1 Originating flow

This subclause describes the message flow between the sender of the Instant Personal Alert, i.e. the PoC Client A and the PoC Server A in the PoC Client A Home Network. The flow is as shown in Figure 23 *"PoC Client A sends an Instant Personal Alert to PoC Client B"*.



NOTE: Authorization of the Instant Personal Alert in the PoC Server A is optional and included in the Figure for completeness.

Figure 23: PoC Client A sends an Instant Personal Alert to PoC Client B

The steps of the flows are as follows:

1. The PoC Client A sends a SIP MESSAGE request to SIP/IP Core. The Request-URI includes the PoC Address of the PoC User B at a PoC Client B. The Accept-Contact header includes the feature-tag '+g.poc.talkburst'.

Request-URI sip:PoC-UserB@networkB.net

SIP HEADERS

P-Preferred-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *,+g.poc.talkburst; require;explicit

User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01

2. The SIP/IP Core A sends the SIP MESSAGE request to the PoC Server A based on the feature-tag '+g.poc.talkburst' in the Accept-Contact header.

Request-URI sip:PoC-[UserB@networkB.net](#)

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *,+g.poc.talkburst; require;explicit

User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01

3. The PoC Server A authorizes the PoC User A at the PoC Client A to send an Instant Personal Alert and initiates the sending of the Instant Personal Alert to the PoC Client B as described in subclause F.13.2 "*Terminating flow*".

4. The PoC Server A receives an acknowledgment from the PoC Client B Network that the PoC Client B has received the Instant Personal Alert.

5. A SIP 200 "OK" response is sent by the PoC Server A to SIP/IP Core A.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ClientB@networkB.net>

Server: PoC-serv/OMA1.0

6. SIP/IP Core A forwards the SIP 200 "OK" response to PoC Client A.

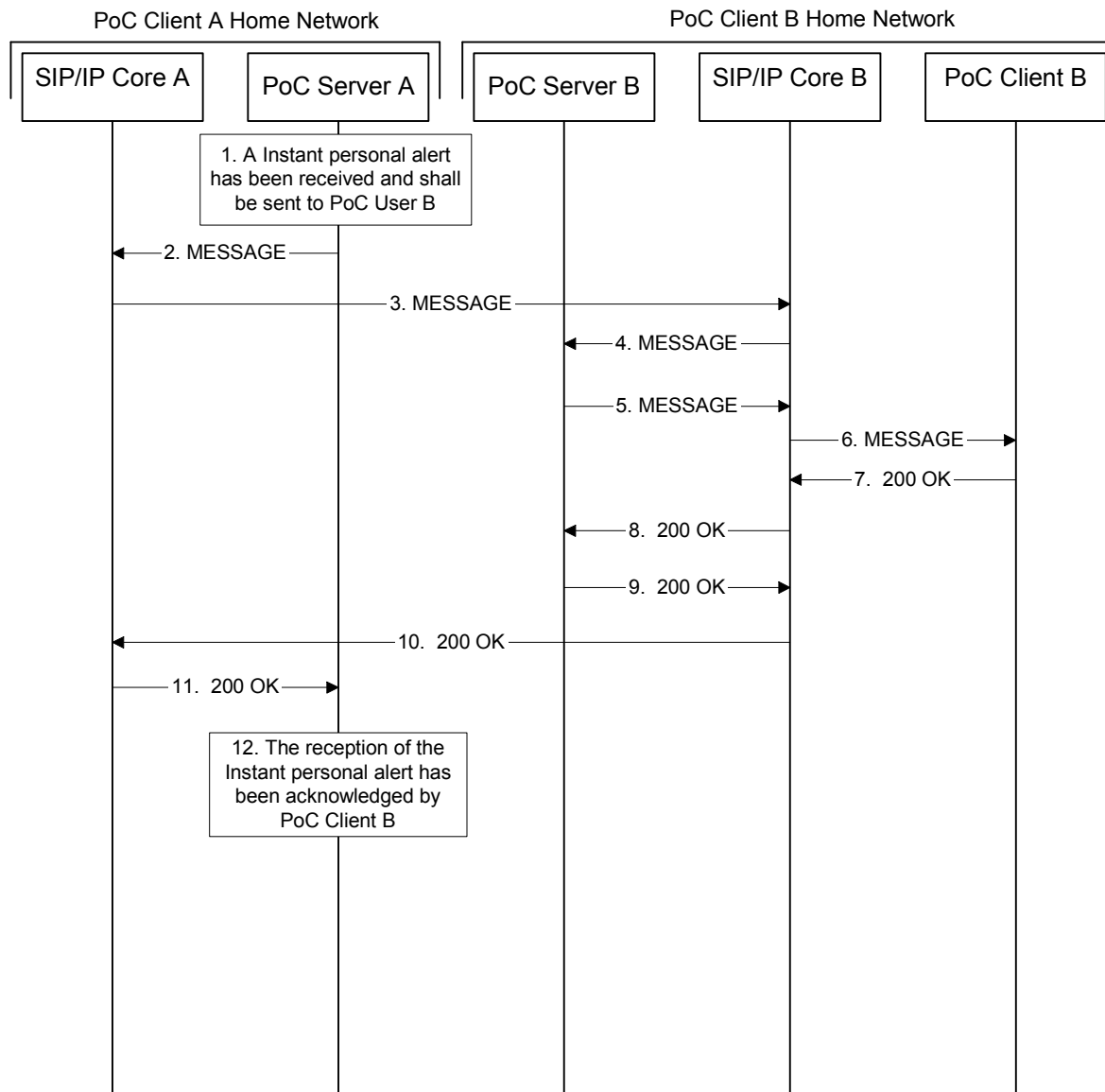
SIP HEADERS

P-Asserted-Identity: <sip:PoC-ClientB@networkB.net>

Server: PoC-serv/OMA1.0

F.13.2 Terminating flow

This subclause describes the message flow between the receiver of the Instant Personal Alert, i.e. the PoC Client B and the PoC Server B in the PoC Client B Home Network. The flow is as shown in Figure 24 "*PoC Client B receives an Instant Personal Alert from PoC Client A*".



NOTE: Access Control of the Instant personal alert in the PoC Server B is optional and included in the figure for completeness.

Figure 24: PoC Client B receives an Instant Personal Alert from PoC Client A

The steps of the flows are as follows:

1. The PoC Server A receives an authorized request from a PoC User A to send an Instant Personal Alert to the PoC User B.
2. The PoC Server A sends a SIP MESSAGE request to the SIP/IP Core A. The Request-URI includes the PoC Address of the PoC User B and an Accept-Contact header with the feature tag '+g.poc.talkburst'.

Request-URI sip:PoC-[UserB@networkB.net](#)

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *,+g.poc.talkburst; require;explicit
User-Agent: PoC-serv/OMA1.0

3. The SIP/IP Core sends the SIP MESSAGE request to the SIP/IP Core B based on the PoC Address of the PoC User B.

Request-URI sip:PoC-UserB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *,+g.poc.talkburst; require;explicit
User-Agent: PoC-serv/OMA1.0

4. The SIP/IP Core B sends the SIP MESSAGE request to the PoC Server B based on the feature tag '+g.poc.talkburst' in the Accept Contact.

Request-URI sip:PoC-UserB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *,+g.poc.talkburst; require;explicit
User-Agent: PoC-serv/OMA1.0

5. The PoC Server B performs Access Control and determines that the PoC User A at the PoC Client A is authorized to send an Instant Personal Alert to the PoC User B. The PoC Server B sends the SIP MESSAGE request to the SIP/IP Core.

Request-URI sip:PoC-UserB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *,+g.poc.talkburst; require;explicit
User-Agent: PoC-serv/OMA1.0

6. The SIP IP/Core B sends the SIP MESSAGE to the PoC Client B based on information stored during registration.

Request-URI sip:PoC-[UserB@networkB.net](#)

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *,+g.poc.talkburst; require;explicit

User-Agent: PoC-serv/OMA1.0

7. The PoC Client B sends a SIP 200 "OK" response to the SIP/IP Core B in order to acknowledge that the Instant Personal Alert was received.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ClientB@networkA.net>

Server: PoC-client/OMA1.0 Acme-Talk5000/v1.01

8. SIP/IP Core B forwards the SIP 200 "OK" response to PoC Server B.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ClientB@networkB.net>

Server: PoC-client/OMA1.0 Acme-Talk5000/v1.01

9. PoC Server B forwards the SIP 200 "OK" response to SIP/IP Core B.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ClientB@networkB.net>

Server: PoC-serv/OMA1.0

10. SIP/IP Core B forwards the SIP 200 "OK" response SIP/IP Core A.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ClientB@networkB.net>

Server: PoC-serv/OMA1.0

11. SIP/IP Core A forwards the SIP 200 "OK" response to PoC Server A.

SIP HEADERS**P-Asserted-Identity:** <sip:PoC-ClientB@networkB.net>**Server:** PoC-serv/OMA1.0

12. The PoC Server A sends the acknowledgment to the PoC Client A as shown in Figure 23 *"PoC Client A sends an Instant Personal Alert to PoC Client B"*.

F.14 Event Subscriptions

This subclause shows an example on how one PoC User subscribes to Group event information during an ongoing PoC Group Session. The flow is as shown in Figure 25 *"A Participant at the PoC Client A subscribes to event information"*.

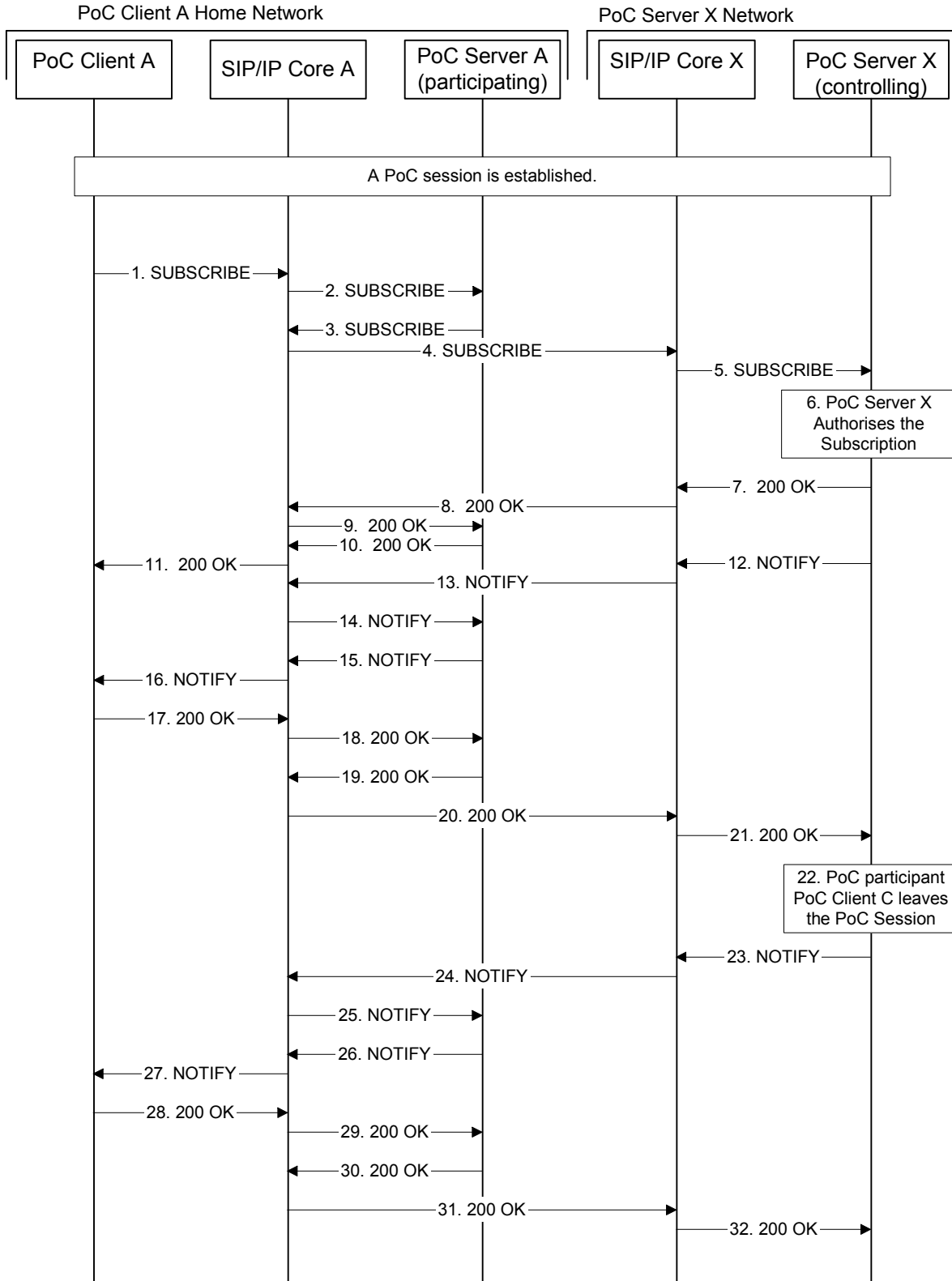


Figure 25: A Participant at the PoC Client A subscribes to event information

The steps of the flows are as follows:

1. The PoC Client A sends the SIP SUBSCRIBE request to the SIP/IP Core. The SIP request includes the PoC Group Identity of the PoC Group or the ad-hoc PoC Session Identity in the Request-URI and an Accept-Contact header with the feature-tag '+g.poc.talkburst'.

Request-URI sip:OMA-Golf-buddies@networkX.net

SIP HEADERS

P-Preferred-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01

Accept-Contact: *,+g.poc.talkburst; require;explicit

Contact: <sip:PoC-ClientA@networkA.net>

Event: conference

Subscription-State: active;expires=3600

2. The SIP/IP Core sends the SIP SUBSCRIBE request to the PoC Server A performing the Participating PoC Function based on the feature-tag '+g.poc.talkburst' in the Accept-Contact header.

Request-URI sip:OMA-Golf-buddies@networkX.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01

Accept-Contact: *,+g.poc.talkburst; require;explicit

Contact: <sip:PoC-ClientA@networkA.net>

Event: conference

Subscription-State: active;expires=3600

3. The PoC Server A performing the Participating PoC Function does not recognise the PoC Group Identity as its own and sends the SIP SUBSCRIBE request to the SIP/IP Core.

Request-URI sip:OMA-Golf-buddies@networkX.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

User-Agent: PoC-serv/OMA1.0
Accept-Contact: *,+g.poc.talkburst; require;explicit
Contact: <sip:PoC-ServerA@networkA.net>
Event: conference
Subscription-State: active;expires=3600

4. The SIP/IP Core sends the SIP SUBSCRIBE request to the SIP/IP Core X based on the Request-URI.

Request-URI sip:OMA-Golf-buddies@networkX.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
User-Agent: PoC-serv/OMA1.0
Accept-Contact: *,+g.poc.talkburst; require;explicit
Contact: <sip:PoC-ServerA@networkA.net>
Event: conference
Subscription-State: active;expires=3600

5. The SIP/IP Core X sends the SIP SUBSCRIBE request to the PoC Server X performing the Controlling PoC Function based on the PoC Group Identity in the Request-URI and the feature-tag 'g.poc.talkburst' in the Accept-Contact header. The PoC Server X authorizes the PoC User at the PoC Client A to receive event information. The authorization may, for example, be based on membership in the PoC Group, number of PoC Users already subscribing to the event information or if the PoC User is a Participant in the ongoing PoC Session.

Request-URI sip:OMA-Golf-buddies@networkX.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
User-Agent: PoC-serv/OMA1.0
Accept-Contact: *,+g.poc.talkburst; require;explicit
Contact: <sip:PoC-ServerA@networkA.net>
Event: conference
Subscription-State: active;expires=3600

6. The PoC Server X authorizes the PoC User at the PoC Client A to receive event information. The authorization may, for example, be based on membership in the PoC Group, number of PoC Users already subscribing to the event information or if the PoC User is a Participant in the ongoing PoC Session.
7. The authorization is successful and the PoC Server X (performing the Controlling PoC Function) sends the SIP 200 "OK" response to the SIP SUBSCRIBE request to SIP/IP Core X.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerX@networkX.net>
Server: PoC-serv/OMA1.0

8. SIP/IP Core X forwards the SIP 200 "OK" response to SIP/IP Core A

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerX@networkX.net>
Server: PoC-serv/OMA1.0

9. SIP/IP Core A forwards the SIP 200 "OK" response to PoC Server A

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerX@networkX.net>
Server: PoC-serv/OMA1.0

10. PoC Server A forwards the SIP 200 "OK" response to SIP/IP Core A

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerX@networkX.net>
Server: PoC-serv/OMA1.0

11. SIP/IP Core A forwards the SIP 200 "OK" response to PoC Client A

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerX@networkX.net>
Server: PoC-serv/OMA1.0

12. The PoC Server X performing the Controlling PoC Function collects information about all Participants in the PoC Session and sends a complete list of all Participants (referred to as a "full" output in the conference event package) in a SIP NOTIFY request to SIP/IP Core X.

Request-URI sip:PoC-ServerA@networkA.net

SIP HEADERS

Contact <sip:PoC-ServerX@networkX.net>

Event: conference

Content-Type: application/conference-info+xml

Subscription-State: active;expires=3600

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>
```

```

  <conference xmlns="urn:ietf:params:xml:ns:conference-info"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="urn:ietf:params:xml:ns:conference-info">
```

```
  <conference-info entity=
```

```
    "sip: OMA-Golf-buddies@networkX.net " state="full"
    version="1">
```

```
  <users>
```

```
    <user entity="sip:PoC-UserB@networkB.net" state="full">
```

```
      <display-text>PoC User B</display-text>
```

```
      <endpoint entity="sip: PoC-ClientB@networkB.net">
```

```
        <status>connected</status>
```

```
    <user entity="sip:PoC-UserC@networkC.net" state="full">
```

```
      <display-text>PoC User C</display-text>
```

```

<endpoint entity="sip: PoC-ClientC@networkC.net">
<status>connected</status>

<user entity="sip:anonymous@networkD.net" state="full">
<display-text>Anonymous User</display-text>
<endpoint entity="sip:anonymous@networkD.net">
<status>connected</status>

</user>

```

13. SIP/IP Core X forwards the SIP NOTIFY request to SIP/IP Core A

Request-URI sip:PoC-ServerA@networkA.net

SIP HEADERS

Contact <sip:PoC-ServerX@networkX.net >

Event: conference

Content-Type: application/conference-info+xml

Subscription-State: active;expires=3600

XML MIME BODY

```

<?xml version="1.0" encoding="UTF-8"?>

<conference xmlns="urn:ietf:params:xml:ns:conference-info"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"
xsi:schemaLocation="urn:ietf:params:xml:ns:conference-
info">

<conference-info entity=
"sip: OMA-Golf-buddies@networkX.net " state="full"

```

```

version="1">

<users>
<user entity="sip:PoC-UserB@networkB.net" state="full">
<display-text>PoC User B</display-text>
<endpoint entity="sip: PoC-ClientB@networkB.net">
<status>connected</status>

<user entity="sip:PoC-UserC@networkC.net" state="full">
<display-text>PoC User C</display-text>
<endpoint entity="sip: PoC-ClientC@networkC.net">
<status>connected</status>

<user entity="sip:anonymous@networkD.net" state="full">
<display-text>Anonymous User</display-text>
<endpoint entity="sip:anonymous@networkD.net">
<status>connected</status>

</user>

```

14. SIP/IP Core A forwards the SIP NOTIFY request to PoC Server A

Request-URI	sip:PoC-ServerA@networkA.net
SIP HEADERS	
Contact	<sip: PoC-ServerX@networkX.net >
Event:	conference
Content-Type:	application/conference-info+xml
Subscription-State:	active;expires=3600

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>

  <conference xmlns="urn:ietf:params:xml:ns:conference-info"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"
    xsi:schemaLocation="urn:ietf:params:xml:ns:conference-
info">

    <conference-info entity=
"sip: OMA-Golf-buddies@networkX.net " state="full"
version="1">

      <users>

        <user entity="sip:PoC-UserB@networkB.net" state="full">
          <display-text>PoC User B</display-text>
          <endpoint entity="sip: PoC-ClientB@networkB.net">
            <status>connected</status>

          <user entity="sip:PoC-UserC@networkC.net" state="full">
            <display-text>PoC User C</display-text>
            <endpoint entity="sip: PoC-ClientC@networkC.net">
              <status>connected</status>

            <user entity="sip:anonymous@networkD.net" state="full">
              <display-text>Anonymous User</display-text>
              <endpoint entity="sip:anonymous@networkD.net">
                <status>connected</status>

            </user>
```

15. PoC Server A forwards the SIP NOTIFY request to SIP/IP Core A

Request-URI sip:PoC-ClientA@networkA.net

SIP HEADERS

Contact <sip:PoC-ServerA@networkA.net >

Event: conference

Content-Type: application/conference-info+xml

Subscription-State: active;expires=3600

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>
```

```

  <conference xmlns="urn:ietf:params:xml:ns:conference-info"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"
    xsi:schemaLocation="urn:ietf:params:xml:ns:conference-
info">
```

```

  <conference-info entity=
"sip : OMA-Golf-buddies@networkX.net " state="full"
version="1">
```

```

  <users>
  <user entity="sip:PoC-UserB@networkB.net" state="full">
  <display-text>PoC User B</display-text>
  <endpoint entity="sip: PoC-ClientB@networkB.net">
  <status>connected</status>
```

```

  <user entity="sip:PoC-UserC@networkC.net" state="full">
  <display-text>PoC User C</display-text>
  <endpoint entity="sip: PoC-ClientC@networkC.net">
  <status>connected</status>
```

```

<user entity="sip:anonymous@networkD.net" state="full">
  <display-text>Anonymous User</display-text>
  <endpoint entity="sip:anonymous@networkD.net">
    <status>connected</status>

  </user>

```

16. SIP/IP Core A forwards the SIP NOTIFY request to PoC Client A

Request-URI sip:PoC-ClientA@networkA.net

SIP HEADERS

Contact <sip:PoC-ServerA@networkA.net >

Event: conference

Content-Type: application/conference-info+xml

Subscription-State: active;expires=3600

XML MIME BODY

```

<?xml version="1.0" encoding="UTF-8"?>

  <conference xmlns="urn:ietf:params:xml:ns:conference-info"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"
    xsi:schemaLocation="urn:ietf:params:xml:ns:conference-
info">

    <conference-info entity=
      "sip: OMA-Golf-buddies@networkX.net " state="full"
      version="1">

```

```

<users>
  <user entity="sip:PoC-UserB@networkB.net" state="full">
    <display-text>PoC User B</display-text>
    <endpoint entity="sip: PoC-ClientB@networkB.net">
      <status>connected</status>

    <user entity="sip:PoC-UserC@networkC.net" state="full">
      <display-text>PoC User C</display-text>
      <endpoint entity="sip: PoC-ClientC@networkC.net">
        <status>connected</status>

    <user entity="sip:anonymous@networkD.net" state="full">
      <display-text>Anonymous User</display-text>
      <endpoint entity="sip:anonymous@networkD.net">
        <status>connected</status>

  </user>

```

17. The PoC Client A sends the SIP 200 "OK" response to the SIP NOTIFY request to SIP/IP Core A.
18. SIP/IP Core A forwards the SIP 200 "OK" response to PoC Server A
19. PoC Server A forwards the SIP 200 "OK" response to SIP/IP Core A
20. SIP/IP Core A forwards the SIP 200 "OK" response to SIP/IP Core X
21. SIP/IP Core X forwards the SIP 200 "OK" response to PoC Server X

NOTE: The steps 22-32 only happen if the subscription is active.

22. Participant PoC Client C leaves the PoC Session.

23. The PoC Server X performing the Controlling PoC Function sends a SIP NOTIFY request to SIP/IP Core X. This time only information about the Participant leaving the PoC Session is sent (referred to by the conference event package as a "partial" output).

Request-URI sip:PoC-ServerA@networkA.net

SIP HEADERS

Contact <sip:PoC-ServerX@networkX.net >

Event: conference

Content-Type: application/conference-info+xml

Subscription-State: active;expires=3600

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>
```

```

  <conference xmlns="urn:ietf:params:xml:ns:conference-info"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"
    xsi:schemaLocation="urn:ietf:params:xml:ns:conference-
info">
```

```
<conference-info entity=
```

```
"sip: OMA-Golf-buddies@networkX.net " state="partial"
version="1">
```

```
<user entity="sip:PoC-UserC@networkC.net" state="full">
```

```
<display-text>PoC User C</display-text>
```

```
<endpoint entity="sip: PoC-ClientC@networkC.net">
```

```
<status>disconnected</status>
```

```
</user>
```

24. SIP/IP Core X forwards the SIP NOTIFY request to SIP/IP Core A

Request-URI sip:PoC-ServerA@networkA.net

SIP HEADERS

Contact <sip:PoC-ServerX@networkX.net >

Event: conference

Content-Type: application/conference-info+xml

Subscription-State: active;expires=3600

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>
```

```

  <conference xmlns="urn:ietf:params:xml:ns:conference-info"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"
    xsi:schemaLocation="urn:ietf:params:xml:ns:conference-
info">
```

```

  <conference-info entity=
"sip: OMA-Golf-buddies@networkX.net " state="partial"
version="1">
```

```

  <user entity="sip:PoC-UserC@networkC.net" state="full">
```

```

  <display-text>PoC User C</display-text>
```

```

  <endpoint entity="sip: PoC-ClientC@networkC.net">
```

```

  <status>disconnected</status>
```

```

</user>
```

25. SIP/IP Core A forwards the SIP NOTIFY request to PoC Server A

Request-URI sip:PoC-ServerA@networkA.net

SIP HEADERS

Contact <sip:PoC-ServerX@networkX.net >
Event: conference
Content-Type: application/conference-info+xml
Subscription-State: active;expires=3600

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>

  <conference xmlns="urn:ietf:params:xml:ns:conference-info"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"
    xsi:schemaLocation="urn:ietf:params:xml:ns:conference-
info">

    <conference-info entity=
"sip: OMA-Golf-buddies@networkX.net " state="partial"
version="1">

      <user entity="sip:PoC-UserC@networkC.net" state="full">
        <display-text>PoC User C</display-text>
        <endpoint entity="sip: PoC-ClientC@networkC.net">
          <status>disconnected</status>

        </user>
```

26. PoC Server A forwards the SIP NOTIFY request to SIP/IP Core A

Request-URI sip:PoC-ClientA@networkA.net

SIP HEADERS

Contact <sip:PoC-ServerA@networkA.net >
Event: conference
Content-Type: application/conference-info+xml
Subscription-State: active;expires=3600

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>

  <conference xmlns="urn:ietf:params:xml:ns:conference-info"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"
    xsi:schemaLocation="urn:ietf:params:xml:ns:conference-
info">

    <conference-info entity=
"sip: OMA-Golf-buddies@networkX.net " state="partial"
version="1">

      <user entity="sip:PoC-UserC@networkC.net" state="full">
        <display-text>PoC User C</display-text>
        <endpoint entity="sip: PoC-ClientC@networkC.net">
          <status>disconnected</status>

        </user>
```

27. SIP/IP Core A forwards the SIP NOTIFY request to PoC Client A

Request-URI sip:PoC-ClientA@networkA.net

SIP HEADERS

Contact <sip:PoC-ServerA@networkA.net >
Event: conference
Content-Type: application/conference-info+xml
Subscription-State: active;expires=3600

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>

  <conference xmlns="urn:ietf:params:xml:ns:conference-info"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"
    xsi:schemaLocation="urn:ietf:params:xml:ns:conference-
info">

    <conference-info entity=
"sip: OMA-Golf-buddies@networkX.net " state="partial"
version="1">

      <user entity="sip:PoC-UserC@networkC.net" state="full">
        <display-text>PoC User C</display-text>
        <endpoint entity="sip: PoC-ClientC@networkC.net">
          <status>disconnected</status>

        </user>
```

28. The PoC Client A sends the SIP 200 "OK" response to the SIP NOTIFY request to SIP/IP Core A.
29. SIP/IP Core A forwards the SIP 200 "OK" response to PoC Server A
30. PoC Server A forwards the SIP 200 "OK" response to SIP/IP Core A

31. SIP/IP Core A forwards the SIP 200 "OK" response to SIP/IP Core X

32. SIP/IP Core X forwards the SIP 200 "OK" response to PoC Server X

F.15 Group Advertisement

This subclause shows an example of how one PoC User can send a Group Advertisement to PoC Group. The example includes authorization and Access Control.

F.15.1 Originating flow

This subclause describes the message flow between the sender of the Group Advertisement, i.e. the PoC Client A and the PoC Server A in the PoC Client A Home Network. The flow is as shown in Figure 26 *"PoC Client A sends Group Advertisement to a PoC Group"*.

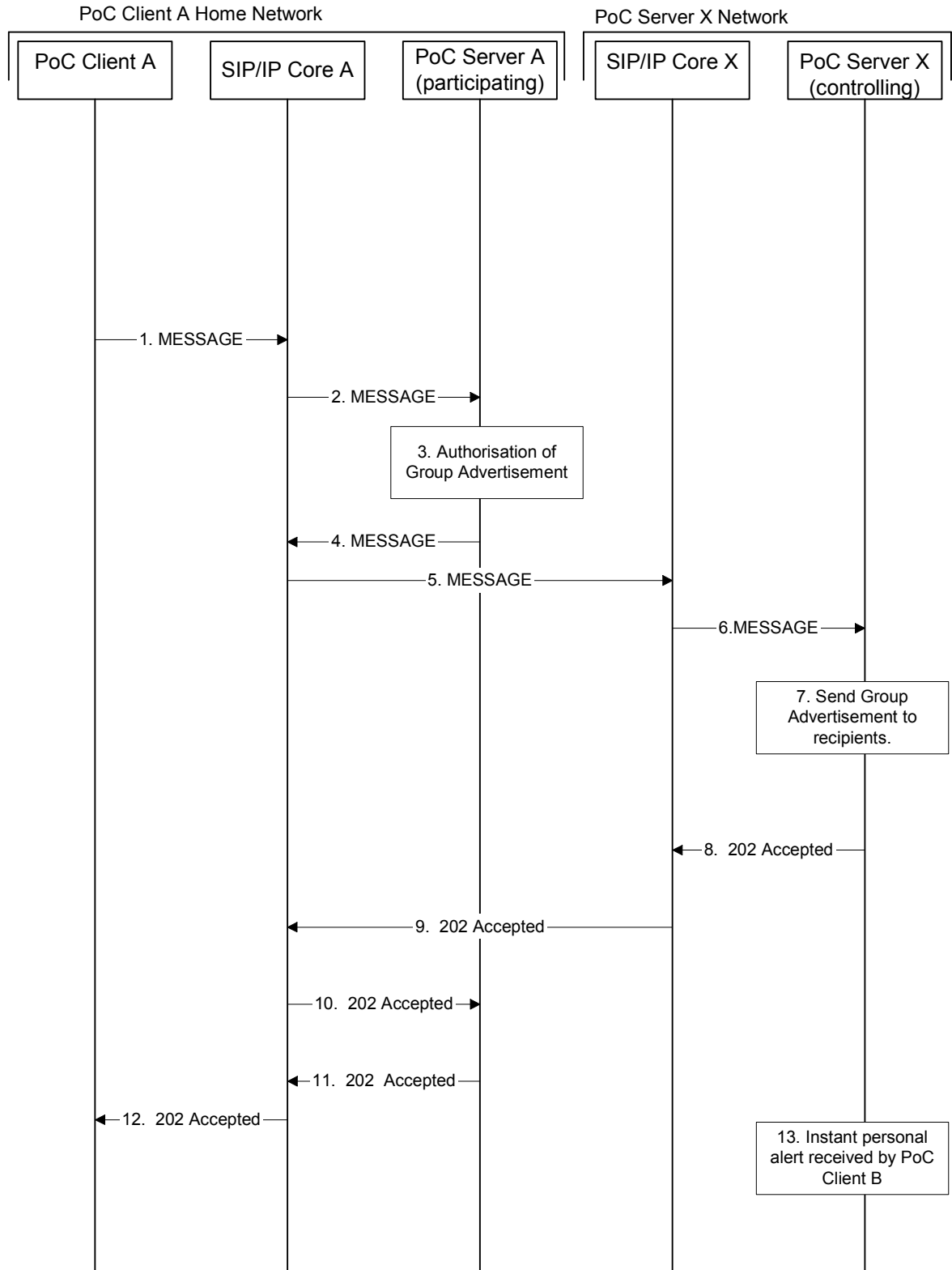


Figure 26: PoC Client A sends a Group Advertisement to a PoC Group

The steps of the flows are as follows:

1. The PoC Client A sends a SIP MESSAGE request to SIP/IP Core A. The Request-URI includes the PoC Group Address. The Accept-Contact header includes the feature-tag '+g.poc.groupad'.

Request-URI sip:OMA-Golf-buddies@networkX.net

SIP HEADERS

P-Preferred-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *,+g.poc.groupad; require;explicit

User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01

Content-Type: application/vnd.poc.advertisement+xml

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<group-advertisement
```

```
  xmlns="urn:oma:params:xml:ns:poc:group-advertisement"
```

```
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
```

```
  xsi:schemaLocation="urn:oma:params:xml:ns:poc:group-
advertisement">
```

```
  <note>I set this group up for us golfers</note>
```

```
  <group type="dialed-in">
```

```
    <display-name>Golf Buddies</display-name>
```

```
    <uri>sip:OMA-Golf-buddies@networkX.net </uri>
```

```
  </group>
```

```
</group-advertisement>
```

2. The SIP/IP Core A forwards the SIP MESSAGE request to the PoC Server A based on the feature-tag '+g.poc.groupad' in the Accept-Contact header.

Request-URI sip:OMA-Golf-buddies@networkX.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *,+g.poc.groupad; require;explicit
User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01
Content-Type: application/vnd.poc.advertisement+xml

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>

<group-advertisement
  xmlns="urn:oma:params:xml:ns:poc:group-advertisement"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="urn:oma:params:xml:ns:poc:group-
advertisement">

  <note>I set this group up for us golfers</note>

  <group type="dialed-in">
    <display-name>Golf Buddies</display-name>
    <uri>sip:OMA-Golf-buddies@networkX.net </uri>
  </group>
</group-advertisement>
```

3. The PoC Server A authorizes the PoC User A at the PoC Client A to send a Group Advertisement.
4. The PoC Server A forwards the SIP MESSAGE request to SIP/IP Core A.

Request-URI sip:OMA-Golf-buddies@networkX.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *,+g.poc.groupad; require;explicit
User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01
Content-Type: application/vnd.poc.advertisement+xml

XML MIME BODY

```

<?xml version="1.0" encoding="UTF-8"?>

<group-advertisement
  xmlns="urn:oma:params:xml:ns:poc:group-advertisement"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="urn:oma:params:xml:ns:poc:group-
advertisement">

  <note>I set this group up for us golfers</note>

  <group type="dialed-in">
    <display-name>Golf Buddies</display-name>
    <uri>sip:OMA-Golf-buddies@networkX.net </uri>
  </group>
</group-advertisement>

```

5. The SIP/IP Core A forwards the SIP MESSAGE request to the SIP/IP Core X

Request-URI sip:OMA-Golf-buddies@networkX.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *,+g.poc.groupad; require;explicit

User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01

Content-Type: application/vnd.poc.advertisement+xml

XML MIME BODY

```

<?xml version="1.0" encoding="UTF-8"?>

<group-advertisement
  xmlns="urn:oma:params:xml:ns:poc:group-advertisement"

```

```

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="urn:oma:params:xml:ns:poc:group-
advertisement">

<note>I set this group up for us golfers</note>
<group type="dialed-in">
  <display-name>Golf Buddies</display-name>
  <uri>sip:OMA-Golf-buddies@networkX.net </uri>
</group>
</group-advertisement>

```

6. The SIP/IP Core X forwards the SIP MESSAGE request to the PoC Server X

Request-URI sip:OMA-Golf-buddies@networkX.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *,+g.poc.groupad; require;explicit

User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01

Content-Type: application/vnd.poc.advertisement+xml

XML MIME BODY

```

<?xml version="1.0" encoding="UTF-8"?>

<group-advertisement
  xmlns="urn:oma:params:xml:ns:poc:group-advertisement"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="urn:oma:params:xml:ns:poc:group-
advertisement">

  <note>I set this group up for us golfers</note>

  <group type="dialed-in">
    <display-name>Golf Buddies</display-name>

```

```
<uri>sip:OMA-Golf-buddies@networkX.net </uri>
</group>
</group-advertisement>
```

7. The PoC Server X initiates the sending of the Group Advertisement to the recipients including PoC Client B as described in subclause F.15.2 "*Terminating flow*".
8. A SIP 202 "Accepted" response is sent by PoC Server X to SIP/IP Core X.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerX@networkX.net>
Server: PoC-serv/OMA1.0

9. SIP/IP Core X forwards the SIP 202 "Accepted" response to SIP/IP Core A.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerX@networkX.net>
Server: PoC-serv/OMA1.0

10. SIP/IP Core A forwards the SIP 202 "Accepted" response to PoC Server A.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerX@networkX.net>
Server: PoC-serv/OMA1.0

11. PoC Server A forwards the SIP 202 "Accepted" response to SIP/IP Core A.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerX@networkX.net>
Server: PoC-serv/OMA1.0

12. SIP/IP Core A forwards the SIP 202 "Accepted" response to PoC Client A.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerX@networkX.net>

Server: PoC-serv/OMA1.0

13. The PoC Server X receives an acknowledgment from the PoC Client B Network that the PoC Client B has received the Group Advertisement.

F.15.2 Terminating flow

This subclause describes the message flow between the receiver of the Group Advertisement, i.e. the PoC Client B and the PoC Server B in the PoC Client B Home Network. The flow is as shown in Figure 27 "PoC Client B receives a Group Advertisement from PoC Client A".

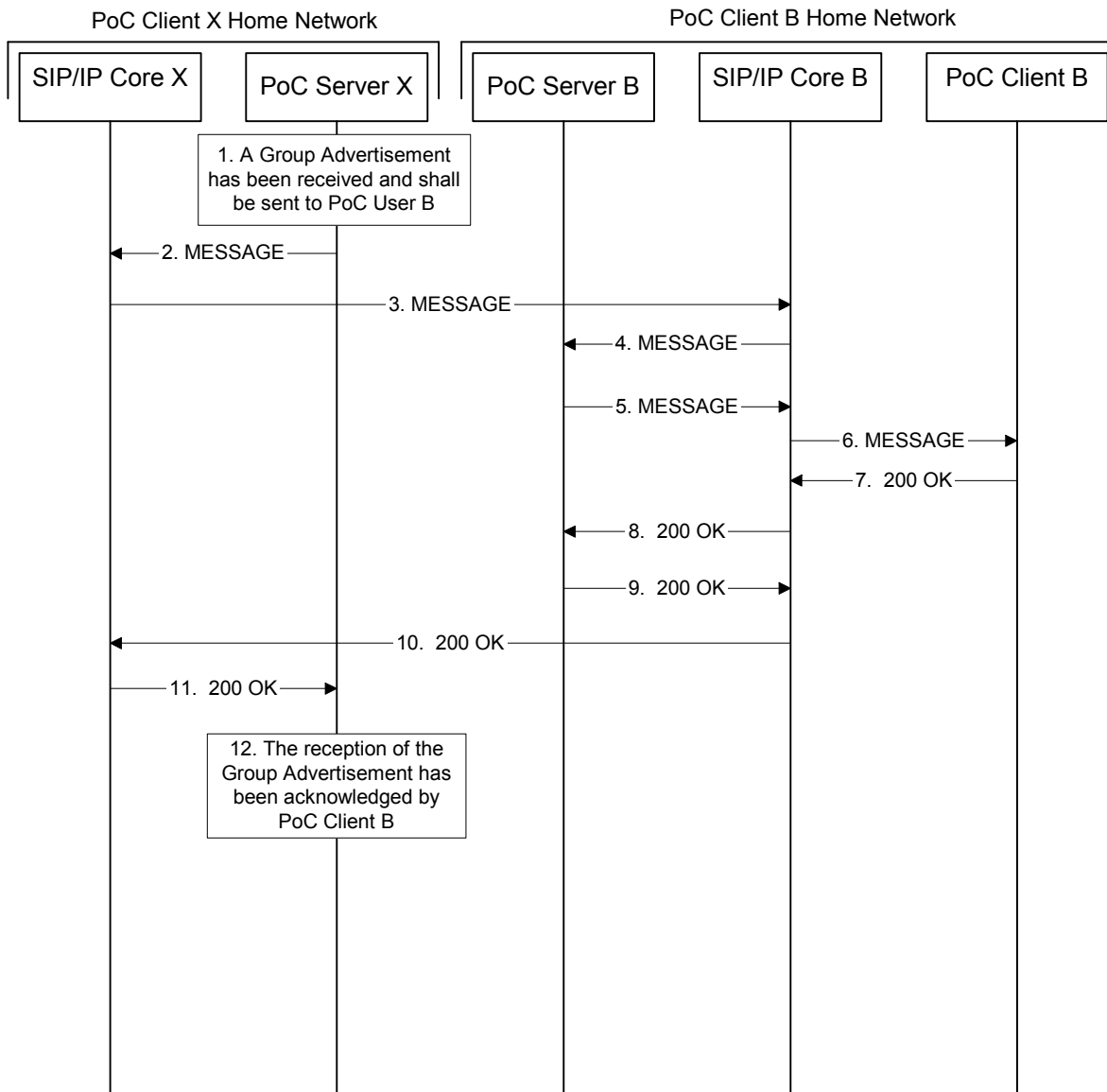


Figure 27: PoC Client B receives a Group Advertisement from PoC Client A

The steps of the flows are as follows:

1. The PoC Server X receives an authorized request from a PoC User A to send a Group Advertisement to a PoC Group that includes PoC User B.
2. The PoC Server X sends a SIP MESSAGE request to the SIP/IP Core X. The Request-URI includes the PoC Address of the PoC User B and an Accept-Contact header with the feature tag '+g.poc.groupad'.

Request-URI sip:PoC-[UserB@networkB.net](#)

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *,+g.poc.groupad; require;explicit

User-Agent: PoC-serv/OMA1.0PoC-client/OMA1.0 Acme-Talk5000/v1.01

Content-Type: application/vnd.poc.advertisement+xml

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<group-advertisement
```

```
  xmlns="urn:oma:params:xml:ns:poc:group-advertisement"
```

```
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
```

```
  xsi:schemaLocation="urn:oma:params:xml:ns:poc:group-
advertisement">
```

```
  <note>I set this group up for us golfers</note>
```

```
  <group type="dialed-in">
```

```
    <display-name>Golf Buddies</display-name>
```

```
    <uri>sip:OMA-Golf-buddies@networkX.net </uri>
```

```
  </group>
```

```
</group-advertisement>
```

3. The SIP/IP Core X sends the SIP MESSAGE request to the SIP/IP Core B based on the PoC Address of the PoC User B.

Request-URI sip:PoC-[UserB@networkB.net](#)

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *,+g.poc.groupad; require;explicit
User-Agent: PoC-serv/OMA1.0PoC-client/OMA1.0 Acme-Talk5000/v1.01
Content-Type: application/vnd.poc.advertisement+xml

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>

<group-advertisement
  xmlns="urn:oma:params:xml:ns:poc:group-advertisement"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="urn:oma:params:xml:ns:poc:group-
advertisement">

  <note>I set this group up for us golfers</note>

  <group type="dialed-in">
    <display-name>Golf Buddies</display-name>
    <uri>sip:OMA-Golf-buddies@networkX.net </uri>
  </group>
</group-advertisement>
```

4. The SIP/IP Core B sends the SIP MESSAGE request to the PoC Server B based on the feature-tag '+g.poc.groupad' in the Accept Contact.

Request-URI sip:PoC-[UserB@networkB.net](#)

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *,+g.poc.groupad; require;explicit

User-Agent: PoC-serv/OMA1.0PoC-client/OMA1.0 Acme-Talk5000/v1.01
Content-Type: application/vnd.poc.advertisement+xml

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>

<group-advertisement
  xmlns="urn:oma:params:xml:ns:poc:group-advertisement"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="urn:oma:params:xml:ns:poc:group-
advertisement">

  <note>I set this group up for us golfers</note>

  <group type="dialed-in">
    <display-name>Golf Buddies</display-name>
    <uri>sip:OMA-Golf-buddies@networkX.net </uri>
  </group>
</group-advertisement>
```

5. The PoC Server B performs Access Control and determines that the PoC User A at the PoC Client A is authorized to send a Group Advertisement to the PoC User B. The PoC Server B sends the SIP MESSAGE request to the SIP/IP Core.

Request-URI sip:PoC-UserB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *,+g.poc.groupad; require;explicit
User-Agent: PoC-serv/OMA1.0PoC-client/OMA1.0 Acme-Talk5000/v1.01
Content-Type: application/vnd.poc.advertisement+xml

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>
```

```

<group-advertisement
  xmlns="urn:oma:params:xml:ns:poc:group-advertisement"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="urn:oma:params:xml:ns:poc:group-
advertisement">

  <note>I set this group up for us golfers</note>

  <group type="dialed-in">
    <display-name>Golf Buddies</display-name>
    <uri>sip:OMA-Golf-buddies@networkX.net </uri>
  </group>
</group-advertisement>

```

6. The SIP IP/Core B sends the SIP MESSAGE to the PoC Client B based on information stored during registration.

Request-URI sip:PoC-UserB@networkB.net

SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>
Accept-Contact: *,+g.poc.groupad; require;explicit
User-Agent: PoC-serv/OMA1.0PoC-client/OMA1.0 Acme-Talk5000/v1.01
Content-Type: application/vnd.poc.advertisement+xml

XML MIME BODY

```

<?xml version="1.0" encoding="UTF-8"?>

<group-advertisement
  xmlns="urn:oma:params:xml:ns:poc:group-advertisement"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="urn:oma:params:xml:ns:poc:group-
advertisement">

```

```

<note>I set this group up for us golfers</note>
<group type="dialed-in">
  <display-name>Golf Buddies</display-name>
  <uri>sip:OMA-Golf-buddies@networkX.net </uri>
</group>
</group-advertisement>

```

7. The PoC Client B sends a SIP 200 "OK" response to the SIP/IP Core B in order to acknowledge that the Group Advertisement was received. The SIP 200 "OK" response is sent along the signalling path to the PoC Server A.

SIP HEADERS

Server: PoC-client/OMA1.0 Acme-Talk5000/v1.01

8. SIP/IP Core B forwards the SIP 200 "OK" response to PoC Server B.

SIP HEADERS

P-Asserted-Identity: "PoC User B" <sip:PoC-ClientB@networkB.net>

Server: PoC-client/OMA1.0 Acme-Talk5000/v1.01

9. PoC Server B forwards the SIP 200 "OK" response to SIP/IP Core B.

SIP HEADERS

P-Asserted-Identity: "PoC User B" <sip:PoC-ClientB@networkB.net>

Server: PoC-serv/OMA1.0

10. SIP/IP Core B forwards the SIP 200 "OK" response SIP/IP Core X.

SIP HEADERS

P-Asserted-Identity: "PoC User B" <sip:PoC-ClientB@networkB.net>

Server: PoC-serv/OMA1.0

11. SIP/IP Core X forwards the SIP 200 "OK" response to PoC Server X.

SIP HEADERS

P-Asserted-Identity: "PoC User B" <sip:PoC-ClientB@networkB.net>

Server: PoC-serv/OMA1.0

12. The PoC Server X sends the acknowledgment to the PoC Client A as shown in Figure 26 *"PoC Client A sends a Group Advertisement to a PoC Group"*.

Appendix G. Change History

(Informative)

G.1 Approved Version History

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

G.2 Candidate Version 1.0 History

Document Identifier	Date	Sections	Description
Draft Versions OMA-CP-PoC-V1_0	23 Jan 2004	All	The initial version of this document.
OMA-CP-PoC-V1_0	30 Jan 2004	6,7,8, Annex A	An example added.
OMA-CP-PoC-V1_0	12 Feb 2004	All	Proposed Reformat
OMA-CP-PoC-V1_0	13 Feb 2004	6,7	Revision based on comments
OMA-CP-PoC-V1_0	24 Feb 2004	All	Reformatted based on new template and clauses 6 and 7 moved to temporary informative appendix
OMA-CP-PoC-V1_0	25 Feb 2004	All	Revision based on comments
OMA-CP-PoC-V1_0	05 Mar 2004	All	Incorporated additional comments
OMA-CP-PoC-V1_0	06 Mar 2004	5 6, Appendix	Minor editorials
OMA-CP-PoC-V1_0	21 Mar 2004	TOC	Corrected Table of Contents
OMA-CP-PoC-V1_0	01 May 2004	Appendix D and E	Incorporated agreed documents OMA-POC-2004-0110R01, OMA-POC-2004-0108R05, OMA-POC-2004-0109R01, OMA-POC-2004-0182R04, and OMA-POC-2004-0183R01.
OMA-CP-PoC-V1_0	31 May 2004	Appendix E and F	Incorporated agreed documents OMA-POC-2004-0255R01, OMA-POC-2004-0268R02, OMA-POC-2004-0271R01, OMA-POC-2004-0272R01, OMA-POC-2004-0275R01, OMA-POC-2004-0245R02, OMA-POC-2004-0246R02, OMA-POC-2004-0260R01, OMA-POC-2004-0279R02, OMA-POC-2004-0287R02, OMA-POC-2004-0294R02, OMA-POC-2004-0295R01, OMA-POC-2004-0292R01, OMA-POC-2004-0286R01, OMA-POC-2004-0288R01, OMA-POC-2004-289R01, OMA-POC-2004-0297R01.
OMA-CP-PoC-V1_0	07 Jun 2004	Appendix F	Editorial correction to the subclause 7.2.2.1 in Appendix F. (The agreed contribution OMA-POC-2004-0287R02 was wrongly copied to the CP document.)
OMA-CP-PoC-V1_0	01 July 2004	Appendix E and F	Incorporated agreed documents: OMA-POC-2004-0340R02, OMA-POC-2004-0341R02, OMA-POC-2004-0348R01, OMA-POC-2004-0349R02, OMA-POC-2004-0365R02, OMA-POC-2004-0367R01, OMA-POC-2004-0368R01, OMA-POC-2004-0374R03, OMA-POC-2004-0375R02, OMA-POC-2004-0376R02, OMA-POC-2004-0377R02, OMA-POC-2004-0378R01, OMA-POC-2004-0379R01, OMA-POC-2004-0380R01, OMA-POC-2004-0388R01, OMA-POC-2004-0390R01, OMA-POC-2004-0391R01, OMA-POC-2004-0393, OMA-POC-2004-0407R01
OMA-CP-PoC-V1_0	13 July 2004	Appendix E and F	Incorporated agreed documents: OMA-POC-2004-350R02, OMA-POC-2004-351R02, OMA-POC-2004-352R02, OMA-POC-2004-353R02, OMA-POC-2004-366R02, OMA-POC-2004-389R02, OMA-POC-2004-394R01
OMA-CP-PoC-V1_0	03 Aug 2004	1, Appendix E and F	Incorporated agreed documents: OMA-POC-2004-342R04, OMA-POC-2004-356R03, OMA-POC-2004-395R02, OMA-POC-2004-426R01, OMA-POC-2004-427R01, OMA-POC-2004-435, OMA-POC-2004-438R01, OMA-POC-2004-439, OMA-POC-2004-440R01, OMA-POC-2004-443, OMA-POC-2004-454, OMA-POC-2004-455R01, OMA-POC-2004-457R01, OMA-POC-2004-463R01, OMA-POC-2004-475R01, OMA-POC-2004-477R01, OMA-POC-2004-478R02, OMA-POC-2004-479R01, OMA-POC-2004-480R01, OMA-POC-2004-491

Document Identifier	Date	Sections	Description
OMA-CP-PoC-V1_0	27 Aug 2004	2,3, Appendix C, D, E and F	Incorporated agreed documents: OMA-POC-2004-0494R04, OMA-POC-2004-0516R01, OMA-POC-2004-0518R02, OMA-POC-2004-0528R03, OMA-POC-2004-0573R03, OMA-POC-2004-0546R02, OMA-POC-2004-0557R01, OMA-POC-2004-0314R01, OMA-POC-2004-0315R01, OMA-POC-2004-0468R02, OMA-POC-2004-0517R03, OMA-POC-2004-0521R03, OMA-POC-2004-0522R03, OMA-POC-2004-0523, OMA-POC-2004-0525R02, OMA-POC-2004-0538R01, OMA-POC-2004-0538R01, OMA-POC-2004-0542R01, OMA-POC-2004-0547R02, OMA-POC-2004-0584R02, OMA-POC-2004-0537R03, OMA-POC-2004-0517R03, OMA-POC-2004-0554R02
OMA-CP-PoC-V1_0	03 Sept 2004	Appendix E and F	Incorporated agreed documents: OMA-POC-2004-0524R03, OMA-POC-2004-0543R03, OMA-POC-2004-0597
OMA-CP-PoC-V1_0	04 Sept 2004	Appendix E and F	Corrected implementation of documents: OMA-POC-2004-0525R02, OMA-POC-2004-0528R03
OMA-CP-PoC-V1_0	05 Oct 2004	1,2,3,4,5, Appendix C, D, E and F	Incorporated agreed documents: OMA-POC-2004-0488R01, OMA-POC-2004-0489R02, OMA-POC-2004-0490R02, OMA-POC-2004-0605, OMA-POC-2004-0607R02, OMA-POC-2004-0608R01, OMA-POC-2004-0617R02, OMA-POC-2004-0618R02, OMA-POC-2004-0619R02, OMA-POC-2004-0623R01, OMA-POC-2004-0624R01, OMA-POC-2004-0625R01, OMA-POC-2004-0626, OMA-POC-2004-0627R01, OMA-POC-2004-0633R01, OMA-POC-2004-0642R01, OMA-POC-2004-0644R01, OMA-POC-2004-0647R03, OMA-POC-2004-0652R02, OMA-POC-2004-0654R01, OMA-POC-2004-0655R02, OMA-POC-2004-0663R01, OMA-POC-2004-0667R02, OMA-POC-2004-0678R02, OMA-POC-2004-0684R02, OMA-POC-2004-0686R02, OMA-POC-2004-0690, OMA-POC-2004-0692, OMA-POC-2004-0697R02, OMA-POC-2004-0709R01, OMA-POC-2004-0710R01, OMA-POC-2004-0713R03, OMA-POC-2004-0716R01, OMA-POC-2004-0744R02
OMA-CP-PoC-V1_020041010-D	10 Oct 2004	2, Appendix E and F	Corrected implementation of documents: OMA-POC-2004-0619R02 Incorporated agreed documents: OMA-POC-2004-0637R01, OMA-POC-2004-0638R01, OMA-POC-2004-0649R02
OMA- PoC-Control-Plane-V1_0	11 Oct 2004	1,2,3, 4, 5, Appendix B,C,D, E and F	Incorporated agreed documents: OMA-POC-2004-0464R04, OMA-POC-2004-0465R04, OMA-POC-2004-0467R03, OMA-POC-2004-0636R03, OMA-POC-2004-0646R05, OMA-POC-2004-0648R05, OMA-POC-2004-0650R03, OMA-POC-2004-0651R03, OMA-POC-2004-0665R02, OMA-POC-2004-0680R05, OMA-POC-2004-0714R03, OMA-POC-2004-0732R02, OMA-POC-2004-0733R02, OMA-POC-2004-0773R0, OMA-POC-2004-0797, OMA-POC-2004-0798R04, OMA-POC-2004-0802R01, OMA-POC-2004-0803R03, OMA-POC-2004-0820R02, OMA-POC-2004-0821R02, OMA-POC-2004-0830R02, OMA-POC-2004-0833R02, OMA-POC-2004-0835R02, OMA-POC-2004-0838R01, OMA-POC-2004-0845R02, OMA-POC-2004-0847R01, OMA-POC-2004-0848, OMA-POC-2004-0849R01, OMA-POC-2004-0850R01, OMA-POC-2004-0852R01, OMA-POC-2004-0862R02, OMA-POC-2004-0864R02, OMA-POC-2004-0870R01, OMA-POC-2004-0871R01, OMA-POC-2004-0877R03, OMA-POC-2004-0887R02, OMA-POC-2004-0888R01, OMA-POC-2004-0890R01, OMA-POC-2004-0914R01, OMA-POC-2004-0916R02, OMA-POC-2004-0920R01
OMA-TS-PoC-ControlPlane-V1_0	11 Nov 2004	1,2,3, 4, 5, 6, 7, Appendix B,C,D, E and F,G	Incorporated agreed documents: OMA-POC-2004-0863R02 Corrected implementation of documents: OMA-POC-2004-0648R05 Moved agreed stable subclauses from Appendix E and F to subclauses 6 and 7

Document Identifier	Date	Sections	Description
OMA-TS-PoC-ControlPlane-V1_0	17 Nov 2004	2, 3, 4, 5, 6, 7, Appendix A,B C, D, E F,G, and H	Incorporated agreed documents: OMA-POC-2004-0866R03, OMA-POC-2004-0894R02, OMA-POC-2004-0917R1, OMA-POC-2004-0933R03, OMA-POC-2004-0934R01, OMA-POC-2004-0935R01, OMA-POC-2004-0937R02, OMA-POC-2004-0938R02, OMA-POC-2004-0946R02, OMA-POC-2004-0947R02, OMA-POC-2004-0949, OMA-POC-2004-0950R01, OMA-POC-2004-0951R02, OMA-POC-2004-0952, OMA-POC-2004-0953R02, OMA-POC-2004-0956R01, OMA-POC-2004-0957R02, OMA-POC-2004-0958R02, OMA-POC-2004-0959R01, OMA-POC-2004-0960R01, OMA-POC-2004-0963R02, OMA-POC-2004-0966R01, OMA-POC-2004-0968R04, OMA-POC-2004-0970R01, OMA-POC-2004-0972R02, OMA-POC-2004-0973, OMA-POC-2004-0974R01, OMA-POC-2004-0975R02, OMA-POC-2004-0977R01, OMA-POC-2004-0978R01, OMA-POC-2004-0979R01, OMA-POC-2004-0980R01, OMA-POC-2004-0981R01, OMA-POC-2004-0982R01, OMA-POC-2004-0983, OMA-POC-2004-0984R01, OMA-POC-2004-0986, OMA-POC-2004-0988R01, OMA-POC-2004-0989R01, OMA-POC-2004-0991R02, OMA-POC-2004-0993R01, OMA-POC-2004-1002R02, OMA-POC-2004-1003R02, OMA-POC-2004-1006R02, OMA-POC-2004-1021R02, OMA-POC-2004-1022R03, OMA-POC-2004-1024R01, OMA-POC-2004-1029R01, OMA-POC-2004-1032R01, OMA-POC-2004-1037R02, OMA-POC-2004-1046R01, OMA-POC-2004-1047, OMA-POC-2004-1048, OMA-POC-2004-1052R01 Moved agreed stable subclauses from Appendix G and H to subclauses 6 and 7 and deleted Appendix G and H
OMA-TS-PoC-ControlPlane-V1_0	05 Jan 2005	All	Editorial consistency review comments adopted.
OMA-TS-PoC-ControlPlane-V1_0	20 Jan .2005	2,3,6,7	Changes allocated to the editors are adopted according to OMA-PoC-2005-0083R01 and incorporated agreed documents: OMA-POC-2004-1125R01, OMA-POC-2004-1181R01, OMA-POC-2004-1182R01, OMA-POC-2004-1183R02, OMA-POC-2005-0006R01, OMA-POC-2005-0009R02, OMA-POC-2005-0010R02, OMA-POC-2005-0013R03, OMA-POC-2005-0028R01, OMA-POC-2005-0038, OMA-POC-2005-0039R01, OMA-PoC-2005-0040R02, OMA-PoC-2005-0041R01, OMA-PoC-2005-0042, OMA-PoC-2005-0043R02, OMA-PoC-2004-987R05, OMA-PoC-2005-0047R01, OMA-PoC-2005-0048, OMA-PoC-2005-0051R01, OMA-POC-2005-0056R04, OMA-PoC-2005-0063R02, OMA-PoC-2005-0071R01,
OMA-TS-PoC-ControlPlane-V1_0	02 Feb 2005	All	Incorporated agreed documents of the PoC WG telco on 24 th Jan and on the PoC WG #18 on 31 st Jan – 2 nd Feb 2005: OMA-POC-2005-0059R01, OMA-POC-2005-0067R02, OMA-POC-2005-0076R02-CP-CONRR-1495-solution-proposal - agreed OMA-POC-2005-0014R03, OMA-POC-2005-0027R02, OMA-POC-2005-0036R04, OMA-POC-2005-0056R05, OMA-POC-2005-0058R03, OMA-POC-2005-0060R01, OMA-POC-2005-0061R01, OMA-POC-2005-0085, OMA-POC-2005-0089R02, OMA-POC-2005-0093, OMA-POC-2005-0095R01, OMA-POC-2005-0102R01, OMA-POC-2005-0105R01, OMA-POC-2005-0106R01, OMA-POC-2005-0109R01, OMA-POC-2005-0110R01, OMA-POC-2005-0111R01, OMA-POC-2005-0112R02, OMA-POC-2005-0116R01, OMA-POC-2005-0123, OMA-POC-2005-0128R01, OMA-POC-2005-0131R01, OMA-POC-2005-0132R01, OMA-POC-2005-0134R02, OMA-POC-2005-0135R01, OMA-POC-2005-0137R01, OMA-POC-2005-0139R01, OMA-POC-2005-0140R02, OMA-POC-2005-0156R01, OMA-POC-2005-0168R03, OMA-POC-2005-0094, OMA-POC-2005-0141R01, OMA-POC-2005-0142-CR01, OMA-POC-2005-0144, OMA-POC-2005-0145, OMA-POC-2005-0146R02, OMA-POC-2005-0149, OMA-POC-2005-0150, OMA-POC-2005-0154R02, OMA-POC-2005-0163, OMA-POC-2005-0165R02, OMA-POC-2005-0169R02, OMA-POC-2005-0170R03, OMA-POC-2005-0171R01, OMA-POC-2005-0173R01, OMA-POC-2005-0174R03, OMA-POC-2005-0177, OMA-POC-2005-0178, OMA-POC-2005-0179, OMA-POC-2005-0180, OMA-POC-2005-0182R01, OMA-POC-2005-0183R01, OMA-POC-2005-0187R01, OMA-POC-2005-0188, OMA-POC-2005-0191, OMA-POC-2005-0199R01, OMA-POC-2005-0201, OMA-POC-2005-0202, OMA-POC-2005-0203, OMA-POC-2005-0204, OMA-POC-2005-0206R01, OMA-POC-2005-0207, OMA-POC-2005-0208R01, OMA-POC-2005-0209R01.

Document Identifier	Date	Sections	Description
OMA-TS-PoC-ControlPlane-V1_0	11 Feb 2005	All	Re-incorporated agreed documents of the PoC WG telco on 24 th Jan and on the PoC WG #18 on 31 st Jan – 2 nd Feb 2005 to correct the implementation errors and having revision marks: OMA-POC-2005-0014R03, OMA-POC-2005-0027R02, OMA-POC-2005-0036R04, OMA-POC-2005-0056R05, OMA-POC-2005-0058R03, OMA-POC-2005-0059R01, OMA-POC-2005-0060R01, OMA-POC-2005-0061R01, OMA-POC-2005-0067R02, OMA-POC-2005-0076R02, OMA-POC-2005-0085, OMA-POC-2005-0089, OMA-POC-2005-0094, OMA-POC-2005-0095R01, OMA-POC-2005-0102R01, OMA-POC-2005-0105R01, OMA-POC-2005-0106R01, OMA-POC-2005-0109R01, OMA-POC-2005-0110R01, OMA-POC-2005-0111R01, OMA-POC-2005-0112R01, OMA-POC-2005-0116R01, OMA-POC-2005-0123, OMA-POC-2005-0128R01, OMA-POC-2005-0131R01, OMA-POC-2005-0132R01, OMA-POC-2005-0134R02, OMA-POC-2005-0135R02, OMA-POC-2005-0137R01, OMA-POC-2005-0139R01, OMA-POC-2005-0140R02, OMA-POC-2005-0141R01, OMA-POC-2005-0144, OMA-POC-2005-0145, OMA-POC-2005-0149, OMA-POC-2005-0150, OMA-POC-2005-01r4R02, OMA-POC-2005-0156R01, OMA-POC-2005-0165R03, OMA-POC-2005-0168R03, OMA-POC-2005-0169R02, OMA-POC-2005-0170R03, OMA-POC-2005-0171R01, OMA-POC-2005-0173R01, OMA-POC-2005-0177, OMA-POC-2005-0178, OMA-POC-2005-0179, OMA-POC-2005-0180, OMA-POC-2005-0182R01, OMA-POC-2005-0187R01, OMA-POC-2005-0188, OMA-POC-2005-0190, OMA-POC-2005-0191, OMA-POC-2005-0199R01, OMA-POC-2005-0201, OMA-POC-2005-0202, OMA-POC-2005-0203, OMA-POC-2005-0206R01, OMA-POC-2005-0207, OMA-POC-2005-0208R01, OMA-POC-2005-0209R01. And some review comments allocated to CP editor are solved according to OMA-POC-2005-0228.
OMA-TS-PoC-ControlPlane-V1_0	25 Feb .2005	All	Editorial corrections. ToC and ToF updated. Figure references updated.
OMA-TS-PoC-ControlPlane-V1_0	08 Mar 2005	All	Incorporated agreed documents: OMA-POC-2005-0090R06, OMA-POC-2005-0096R05, OMA-POC-2005-0148R02, OMA-POC-2005-0194R03, OMA-POC-2005-0226, OMA-POC-2005-0227R02, OMA-POC-2005-0239, OMA-POC-2005-0240R02, OMA-POC-2005-0241R01, OMA-POC-2005-0243R01, OMA-POC-2005-0247R03, OMA-POC-2005-0258, OMA-POC-2005-0263, OMA-POC-2005-0264R03, OMA-POC-2005-0265R01, OMA-POC-2005-0266, OMA-POC-2005-0267, OMA-POC-2005-0270R02, OMA-POC-2005-0271R03, OMA-POC-2005-0272, OMA-POC-2005-0280R02, OMA-POC-2005-0281R02, OMA-POC-2005-0283R01, OMA-POC-2005-0287, OMA-POC-2005-0288, OMA-POC-2005-0290R03, OMA-POC-2005-0294R01, OMA-POC-2005-0295R02, OMA-POC-2005-0297R01, OMA-POC-2005-0298R01, OMA-POC-2005-0300R01, OMA-POC-2005-0306R01, OMA-POC-2005-0307R01, OMA-POC-2005-0310, OMA-POC-2005-0312R01, OMA-POC-2005-0314, OMA-POC-2005-0317R01, OMA-POC-2005-0319R03, OMA-POC-2005-0320R01, OMA-POC-2005-0324 and OMA-POC-2005-0330R01.
OMA-TS-PoC-ControlPlane-V1_0	17 Mar 2005		Status changed to Candidate by TP: OMA ref# OMA-TP-2005-0059-PoC-V1_0-for-candidate-approval