OMA PoC Control Plane

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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
Access Control	PoC User specified rules that restrict the set of other PoC Users that may establish PoC Sessions to the PoC User.
Ad-hoc PoC Group Session	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	In 3GPP/3GPP2 IMS, 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/3GPP2 IMS 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 PoC User at the originating or terminating PoC Client that has been validated by the SIP/IP Core or the PoC Group Identity used by the PoC Server performing the Controlling PoC Function when inviting PoC Users to a PoC Group Session.
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 PoC User; Media is immediately played when received.
Chat PoC Group	A Chat PoC Group is a persistent PoC Group where the <invite-members> element is set to “false” as specified in the [OMA-POC-XDM] “*PoC Group*” and 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.
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/3GPP2 IMS SIP/IP 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

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	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 3GPP/3GPP2 IMS 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.
Nick Name	A user-friendly display name that might be associated to a PoC User or a PoC Group. The Nick Name can either be provided as a "display-name" in a SIP header or in the <display-name> child element of the <entry> element for the PoC User or for the PoC Group as specified in [OMA-POC-XDMS].
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.
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 3GPP/3GPP2 IMS, 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. If SIP/IP Core is the IMS the PoC Address is a public user identity.
PoC Client	A PoC Client is a PoC functional entity that resides on the PoC User Equipment that supports the PoC 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/3GPP2 IMS 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.

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PoC Service Setting	The PoC Service Settings are Answer Mode Indication, Incoming PoC Session Barring, Incoming Instant Personal Alert Barring and Simultaneous PoC Session Support.
PoC Session	A PoC Session is a SIP Session established by the procedures of this specification. This specification supports the following types of PoC Sessions: 1-1 PoC, Ad-hoc PoC Group, Pre-arranged PoC Group, or Chat PoC Group Session.
PoC Session Identity	SIP URI, which identifies the PoC Session and which can be used for routing initial SIP requests. It is 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 Group, where the <invite-members> element is set to “true” as specified in the [OMA-POC-XDM] “*PoC Group*”. The establishment of a PoC Session to a Pre-arranged 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 Home PoC Server. The PoC Client establishes the Pre-established Session prior to making requests for PoC Sessions to other PoC Users. To establish a PoC Session based on a SIP request from the 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.
Served PoC User	A PoC User that obtains a PoC service from a PoC Server located in the Home PoC Network.
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.
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.
Simultanoeus PoC Sessions Support	Simultaneous PoC Sessions Support is a PoC Service Setting for the PoC Client that conveys the PoC Client is able and PoC User is willing to use Simultaneous PoC Sessions.
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.

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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 3GPP/3GPP2 IMS, 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	3rd Generation Partnership Project
3GPP2	3rd 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
IP	Internet Protocol
ISB	Incoming Session Barring
MIME	Multipurpose Internet Mail Extensions
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

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SIP	Session Initiation Protocol
SSS	Simultaneous PoC Sessions Support
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

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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 required to realize these 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.

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5. Common procedures

5.1 General

The procedures in this specification are presented in the form of procedural description. The order of the procedural steps can be significant and deviating from the presented order can result in interoperability problems.

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 to 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 PoC User at the originating or terminating PoC Client that has been validated by the SIP/IP Core or the PoC Group Identity used by the PoC Server performing the Controlling PoC Function when inviting PoC Users to a PoC Group Session.

When the SIP/IP Core corresponds to 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.

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 initiates 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.

5.4 Nick Name

The PoC Server and the PoC Client MAY send Nick Names in SIP requests and SIP responses.

If a PoC Server supports sending Nick Names in SIP requests and SIP responses the use of Nick Names SHALL be controlled by an service provider option which makes it possible to enable or disable the sending of Nick Names.

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The following text describes the procedures in the PoC Client and the PoC Server when the PoC Client and the PoC Server support sending of Nick Names:

A PoC Client MAY provide the inviting PoC User's Nick Name in the "display-name" part of the Authenticated Originator's PoC Address, i.e. in the P-Preferred-Identity header or, e.g. when the P-Preferred-Identity header is not included, in the From header of the initial SIP INVITE request or SIP REFER request sent towards the PoC Server performing the Participating PoC Function.

NOTE 1: A Nick Name included in the P-Preferred-Identity header is moved to the P-Asserted-Identity header by the underlying SIP / IP Core if validation of the PoC Address is successful as described in [RFC 3325]. If validation of the PoC Address fails the SIP /IP Core uses a default PoC Address in the P-Asserted-Identity header and the Nick Name, if included in the P-Preferred-Identity header, is lost. A Nick Name in the From header is never lost.

The PoC Server performing the Participating PoC Function SHALL provide the inviting PoC User's Nick Name, if a configured Nick Name is available, in the "display-name" part of the Authenticated Originator's PoC Address in the initial SIP INVITE request before sending the initial SIP INVITE request to the PoC Server performing the Controlling PoC Function. If the Authenticated Originator's PoC Address already includes a Nick Name it SHALL be replace by the configured Nick Name.

The terminating PoC Client MAY provide the invited PoC User's Nick Name in the "display-name" part of the To header of the SIP 200 "OK" response to an initial INVITE request sent to SIP/IP Core the PoC Server performing the Participating PoC Function.

The PoC Server performing the Participating PoC Function SHALL provide the invited PoC User's Nick Name, if a configured Nick Name is available, in the "display-name" part of the Authenticated Originator's PoC Address in SIP 200 "OK" responses to initial SIP INVITE requests before sending the SIP 200 "OK" response to the PoC Server performing the Controlling PoC Function. If the Authenticated Originator's PoC Address already includes a Nick Name it SHALL be replace by the configured Nick Name.

The PoC Server performing the Controlling PoC Function SHALL collect Nick Names, if Nick Names for Participants in a PoC Session are provided, according to the following priority order:

- 1. The string e.g. "Anonymous" or no Nick Name in case privacy is requested; or,
- 2. The <display-name> child element of the <entry> element for PoC Users in PoC Group definitions as specified in [PoC-XDM Specification] if <display-name> is defined; or,
- 3. The Nick Names received in the "display-name" part of the Authenticated Originator's PoC Address of initial SIP requests and SIP 200 "OK" responses to the initial SIP requests from Participants; or,
- 4. The Nick Names received in the "display-name" part of the From header of initial SIP requests or in the "display-name" part of the To header of the SIP 200 "OK" responses to the initial SIP requests from Participants.

The PoC Server performing the Controlling PoC Function SHALL use the <display-name> element defined in [PoC-XDM Specification] "*PoC Group*" as the Nick Name for the PoC Group in case of a Pre-Arranged PoC Group Session or a Chat PoC Group Session if the <display-name> element is defined.

The PoC Server performing the Controlling PoC Function SHALL include a Nick Name, if a Nick Name is available, in the Authenticated Originator's address of the initial SIP INVITE request before inviting a PoC User to a PoC Session.

NOTE 2: The PoC Server performing Controlling PoC Function use the Nick Name as part of the Talker Identification as specified in [OMA-POC-UP] "*Talker Identification*", as part of Participant Information as described in subclause 7.2.1.11 "*PoC Session Participant request*".

The PoC Client MAY, override Nick Names received from the PoC Server if a locally stored display name is available in the User Equipment.

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5.5 Error handling

This specification describes PoC specific error procedures but the handling of errors that cannot be regarded as PoC specific SHALL follow the rules and procedures of the relevant specification in subclause 2.1 "*Normative References*".

5.6 Warning header

The PoC Server sometime includes a free text string in a SIP response to SIP INVITE request. PoC specific text strings are indicated in the clause 7 "*Procedure at the PoC Server*".

When the PoC Server includes a text string in a response to a SIP INVITE request the text string SHALL be included in a Warning header as specified in [RFC3261]. The PoC Server SHALL include the Warning code set to 399 and MAY include the host name set to the host name of the PoC Server.

5.7 PoC Session Identity

The PoC Session Identity is a SIP URI, which SHALL identify the PoC Session.

PoC Server performing Controlling PoC Function SHALL allocate a unique PoC Session Identity for the PoC Session when established.

PoC Server performing the Participating PoC Function MAY modify the PoC Session Identity as described in the subclause 7.3.2.1 "*General*".

PoC Session Identity identifies the PoC Session the way that e.g.:

- PoC User is able to leave a PoC Session;
- PoC User is able to add PoC Users to an on-going PoC Session;
- PoC User is able to subscribe the Participant information of the on-going PoC Session;
- PoC User is able to re-join the PoC Session as long as the PoC Session is on-going in the PoC Server performing the Controlling PoC Function also in the case that his Home PoC Server is not anymore participating the PoC Session; and,
- SIP/IP Cores are able to route an initial SIP request to the PoC Server performing the Controlling PoC Function

NOTE: The exact format of the PoC Session Identity allocated by PoC Server depends on the functionality of the SIP/IP Core in this PoC Network.

PoC Server performing Controlling PoC Function SHALL send the PoC Session Identity towards the PoC Client during the PoC Session establishment in the Contact header.

PoC Server performing Participating PoC Function SHALL send the PoC Session Identity to the PoC Client in the TBCP Connect message if Pre-established Session is used.

5.7a PoC Session association

When PoC Client and Home PoC Network supports the Simultaneous PoC Session control procedures, the PoC Client SHOULD use the same Contact URI in all sent SIP INVITE requests, SIP re-INVITE requests, SIP UPDATE requests and all sent SIP 2xx responses to the SIP INVITE requests, SIP re-INVITE requests and SIP UPDATE requests.

When the PoC Server performing the Participating PoC Function does not support PoC Clients registering multiple PoC Addresses, the PoC Server SHOULD select the PoC Sessions

- with the same Authenticated Originator's PoC Address received in the SIP INVITE request or in the SIP 2xx response to the SIP INVITE request received from the served PoC Client for the Simultaneous PoC Session handling; or,

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- with the same Contact URI in the SIP INVITE request or in the SIP 2xx response to the SIP INVITE request received from the served PoC Client for the Simultaneous PoC Session handling.

If the PoC Server performing the Participating PoC Function supports the PoC Clients registering multiple PoC Addresses, the PoC Server SHOULD select the PoC Sessions with the same Contact URI in the SIP INVITE request or in the SIP 2xx response to the SIP INVITE request received from the served PoC Client for the Simultaneous PoC Session handling.

NOTE 1: Other methods reaching the same results may be used as well

NOTE 2: It is recommended that the PoC Server supports PoC Clients registering multiple PoC Addresses.

5.8 Void

5.9 Anonymous PoC Address

When a PoC User requests privacy, the PoC Server performing the Controlling PoC Function creates an anonymous PoC Address for the PoC User. In addition to anonymity, the PoC Addresses are also unique in a PoC Session. The PoC Server SHALL support anonymous PoC Addresses. When receiving a SIP request or a SIP response with privacy requested, the PoC Server performing the Controlling PoC Function SHALL create an anonymous PoC Address of the form <sip:anonymous@anonymous.invalid>. In addition to anonymity, the anonymous PoC Addresses SHALL be unique within PoC Session. In case of more than one anonymous PoC Addresses are used in the same PoC Session, for the second Anonymous PoC Session and thereafter, the PoC Server SHOULD use the form <sip:anonymous-n@anonymous.invalid> where n is an integer number.

NOTE: The user part of the anonymous PoC Address can be generated in other ways.

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6. Procedures at the PoC Client

6.1 PoC Client originating procedures

6.1.1 PoC service registration

6.1.1.1 PoC service registration and re-registration

The PoC Client registration and re-registration to the SIP/IP Core SHALL be made according to rules and procedures of [RFC3261] with the clarifications in the following.

When registering or 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 receiving of Group Advertisement messages is supported;
- 4. SHALL include a Require header with the option tag “pref” according to rules and procedures of [RFC3840]; and,
- 5. MAY include the User-Agent header in the SIP REGISTER request to indicate the PoC release version as specified in subclause E.4.1 “*Release version in User-agent and Server headers*”.
- 6. 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,
- 7. 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 set the PoC Service Setting as specified in subclause 6.1.2 "*PoC Service Settings procedure*". If the PoC Client supports registering multiple PoC Addresses and multiple PoC Addresses are registered by a PoC Client, the PoC Client SHOULD publish the PoC Service Setting for each registered PoC Address.

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: Periodic 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 to 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.

6.1.1.2 PoC service de-registration

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

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], if the PoC Client needs to continue to receive Group Advertisement messages and MAY include a Require header with the option tag “pref” according to rules and procedures of [RFC3840] in all other cases;
- 4. MAY include the User-Agent header in the SIP REGISTER request to indicate the PoC release version as specified in subclause E.4.1 “*Release version in User-agent and Server headers*”;

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- 5. SHALL include the expiration value set to 0 according to rules and procedures of [RFC3261], if the User Equipment also needs to de-register from the SIP/IP Core; and,
- 6. SHALL send the SIP REGISTER request towards the SIP/IP Core according to rules and procedures of the SIP/IP Core.

When the SIP/IP Core corresponds to 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, remove or refresh the PoC Service Settings, the PoC Client:

- 1. SHALL generate a SIP PUBLISH request according to rules and procedures of [RFC3903] and [RFC4354];
- 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];
- 5. 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*";
- 6. SHALL set the Event header to the value 'poc-settings';
- 7. MAY set PoC Service Settings expiration timer in Expires header, if set, SHALL set according to rules and procedures of [RFC 3903], in the same range as the registration timer recommended by SIP/IP Core;
- 8. SHALL include the PoC Service Settings as follows, if setting or updating the PoC Service Setting:

  a) Answer mode setting (auto-answer or manual-answer);

  b) Incoming PoC Session Barring setting (ISB active or ISB not active);

  c) Incoming Instant Personal Alert Barring setting (IAB active or IAB not active); and,

  d) Simultaneous PoC Sessions Support setting (SSS active or SSS not active).

NOTE 1: Expiration timer value 0 means removal.

- 9. 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 2: 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 to 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

NOTE 1: This subclause provides common procedures for other subclauses and is not meant to be applied unless referenced.

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;

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- 2. SHALL include a User-Agent 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 PoC feature tag '+g.poc.talkburst' in the Contact header;
- 4. SHOULD include an Allow header with the SIP methods supported in this SIP dialog according to rules and procedures of [RFC3261];
- 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*";
- 6. MAY include a Nick Name in the Authenticated Originator's PoC Address as specified in subclause 5.4 "*Nick Name*".

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 [RFC4028].

NOTE 2: 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 [RFC4028].

When the SIP/IP Core corresponds to 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 other than the default IP address or port number specified by [RFC3550] is to be used, 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, Talk Burst parameter(s) and the port number for the Talk Burst Control Protocol; and,

  e) if the PoC Client is not able/willing to receive media streams immediately, set the media to 'inactive' as specified in [RFC3108].
- 4. SHALL include value "id" in the Privacy header according to rules and procedures of [RFC3325], if privacy is requested to be used in the automatically answered terminated PoC Sessions;

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NOTE: The included “id” value is not valid for an outgoing SIP REFER request when initiating a PoC Session.

- 5. 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 conference URI that identifies of the Pre-established Session received in the Contact header; and,
- 2. 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 to 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 a 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 conference URI that identifies 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 [RFC5368] 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;

  b) include a MIME resource-lists body according to rules and procedures of [RFC5368] 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;

  c) include 'multiple-refer' option tag to the Require header. Otherwise, continue with the rest of the steps.
- 5. SHALL when more than one PoC User is invited, include the following according to rules and procedures of [RFC4488]:

  a) the option tag "norefersub" in the Require header; and,

  b) the value “false” in the Refer-Sub header.
- 6. MAY when only one PoC User is invited, include the following according to rules and procedures of [RFC4488]:

  a) the option tag “norefersub” in the Require header; and,

  b) the value “false” in the Refer-Sub header.
- 7. SHALL include value "id" in the Privacy header according to rules and procedures of [RFC3325] , if anonymity is requested;
- 8. SHALL, in case the PoC User has requested Manual Answer Override, include in the Refer-To URI a Priv-Answer-Mode header with the value "Auto" according to rules and procedures of [RFC5373];
- 9. SHALL, in case the PoC User has requested that Manual Answer Mode be required at the Invited PoC Client, include in the Refer-To URI an Answer-Mode header with the value "Manual;require” according to rules and procedures of [RFC5373];
- 10. 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*".

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NOTE 1: If PoC User wants to cancel the PoC Session initiation, the PoC Client can send SIP BYE request and release the Pre-established Session as specified in subclause 6.1.3.2.4 "*PoC Client releases a Pre-established Session*" and re-establish the Pre-established Session as specified in 6.1.3.2.1 "*PoC Client initiates a Pre-established Session*".

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 2: The PoC Server does not send any SIP NOTIFY request in case the value “false” was included in the Refer-Sub header of 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 to 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 conference URI that identifies 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 " session=prearranged" or “session=chat", respectively as specified in E.5.1 "Session Type uri-parameter";
- 4. MAY include the following according to rules and procedures of [RFC4488]:

  a) the option tag “norefersub” in the Require header; and,

  b) the value “false” in the Refer-Sub header.
- 5. SHALL, in case the PoC User has requested Manual Answer Override, include in the Refer-To URI a Priv-Answer-Mode header with the value "Auto" according to rules and procedures of [RFC5373];
- 6. SHALL, in case the PoC User has requested that Manual Answer Mode be required at the Invited PoC Client, include in the Refer-To URI an Answer-Mode header with the value "Manual;require" according to rules and procedures of [RFC5373];
- 7. SHALL include value "id" in the Privacy header according to rules and procedures of [RFC3325] , if anonymity is requested; and,
- 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*".

NOTE: If PoC User wants to cancel the PoC Session initiation, the PoC Client can send SIP BYE request and release the Pre-established Session as specified in subclause 6.1.3.2.4 "*PoC Client releases a Pre-established Session*" and re-establish the Pre-established Session as specified in 6.1.3.2.1 "*PoC Client initiates a Pre-established Session*".

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

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- 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 to 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 conference URI that identifies 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 to 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 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 other than the default IP address or port number specified by the [RFC3550] is to be used, 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, Talk Burst parameter(s) and the port number for the Talk Burst Control Protocol.
- 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 [RFC5366]. 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 Priv-Answer-Mode header with the value "Auto" according to rules and procedures of [RFC5373];

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- 7. SHALL, in case the PoC User has requested that Manual Answer Mode be required at the Invited PoC Client, include in the SIP INVITE request an Answer-Mode header with the value "Manual;require" according to rules and procedures of [RFC5373];
- 8. SHALL include value "id" in the Privacy header according to rules and procedures of [RFC3325], if anonymity is requested; and,
- 9. 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 if 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: According to [RFC5366] 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 to 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 using 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 in the Request-URI Session Type uri-parameter ”session=prearranged" or ”session=chat” depending on the PoC Group Identity as specified in E.5.1 "Session Type uri-parameter";

NOTE 1: The inclusion of the Session Type uri-parameter in the Request-URI in case of the On-demand Sessions is not mandatory, as it is not needed by the PoC Server for further processing by the Controlling PoC Function. In case the Session Type uri-parameter is included, the Controlling PoC Function checks whether it is set correctly.

- 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 other than the default IP address or port number specified by the [RFC3550] is to be used, set the IP address and port number to be used for RTCP at the PoC Client according to rules and procedures of [RFC3605]; and,

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

- 5. SHALL, in case the PoC User has requested Manual Answer Override, include in the SIP INVITE request a Priv-Answer-Mode header with the value "Auto" according to rules and procedures of [RFC5373];

NOTE 2: 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, in case the PoC User has requested that Manual Answer Mode be required at the Invited PoC Client, include in the SIP INVITE request an Answer-Mode header with the value "Manual;require" according to rules and procedures of [RFC5373];
- 7. SHALL include value "id" in the Privacy header according to rules and procedures of [RFC3325], if anonymity is requested; and,

NOTE 3: 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.

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 to 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

NOTE 1: This subclause provides common procedures for other subclauses and is not meant to be applied unless referenced.

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 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.

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When the SIP/IP Core corresponds to 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 when 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:

- 1. SHALL interact with the User Plane as specified in [OMA-PoC-UP] "*Media on and off hold*"; and,
- 2. SHALL 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 to 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 re-activating a media component that had been 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 an 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:

- 1. SHALL interact with the User Plane as specified in [OMA-PoC-UP] "*Media on and off hold*"; and,
- 2. SHALL 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 to 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*";

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- 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:

- 1. SHALL interact with the User Plane as specified in [OMA-PoC-UP] "*User Plane adaptation*"; and,
- 2. SHALL 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 to 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 [RFC4028];
- 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 to 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 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;

NOTE 1: The PoCSession Identity includes the Session Type uri-parameter indicating the PoC Session type e.g. "session=prearranged", "session=chat" or "session=adhoc" as defined in E.5.1 *"Session Type uri-parameter"*;

- 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 being offered by the PoC Client for the PoC service;

  c) If other than the default IP address or port number specified in [RFC3550] is to be used, 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, Talk Burst parameter(s) and the port number for the Talk Burst Control Protocol.
- 4. SHALL include value "id" in the Privacy header according to rules and procedures of [RFC3325], if anonymity is requested; and,

NOTE 2: 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.

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- 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 to 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 that has been 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 conference URI that identifies 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 the Session Type uri-parameter indicating the PoC Session type, e.g. "session=prearranged", "session=chat" or "session=adhoc" as defined in E.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 the following according to rules and procedures of [RFC4488]:

  a) the option tag “norefersub” in the Require header; and,

  b) the value “false” in the Refer-Sub header.

- 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 a 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 to 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.

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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 that has been 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 interact with the User Plane as specified in [OMA-PoC-UP] "*PoC Client procedures at PoC Session release*";
- 3. SHALL generate a SIP BYE request according to rules and procedures of [RFC3261];
- 4. SHALL set the Request-URI to the PoC Session Identity of the PoC Session to leave;
- 5. SHALL include value "id" in the Privacy header according to rules and procedures of [RFC3325] , if anonymity is requested; and,
- 6. 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 to 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. 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 REFER request according to rules and procedures of [RFC3515];
- 3. SHALL set the Request-URI of the SIP REFER request to the conference URI that identifies of the Pre-established Session;
- 4. 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 or in the SIP NOTIFY request associated with the SIP REFER request.

- 5. MAY include the following according to rules and procedures of [RFC4488]:

  a) the option tag “norefersub” in the Require header; and,

  b) the value “false” in the Refer-Sub header.
- 6. SHALL include the "method" parameter with the value "BYE" in the Refer-To header;
- 7. SHALL include value "id" in the Privacy header according to rules and procedures of [RFC3325] , if anonymity is requested; and,
- 8. 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 :

1. SHALL handle it according to rules and procedures of [RFC3515] and [RFC3265]
2. SHALL interact with the User Plane as specified in [OMA-PoC-UP] "*PoC Client procedures at PoC Session release*".

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,

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2. MAY display information to the PoC User based on the information in the SIP NOTIFY body.

When the SIP/IP Core corresponds to 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 sent 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 content-ID URL pointing to an URI-list in a body part containing the MIME resource-list body according to rules and procedures of [RFC5368];

  b) SHALL include a MIME resource-lists body with the list of the PoC Users to be added according to rules and procedures of [RFC5368]; and,

  c) SHALL include 'multiple-refer' option tag to the Require header according to rules and procedures of [RFC5368].
- 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 when more than one PoC User is added, include the following according to rules and procedures of [RFC4488]:

  a) the option tag "norefersub" in the Require header; and,

  b) the value “false” in the Refer-Sub header.
- 7. MAY when only one PoC User is added, include the following according to rules and procedures of [RFC4488]:

  a) the option tag “norefersub” in the Require header; and,

  b) the value “false” in the Refer-Sub header.
- 8. 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.

- 9. SHALL include in the Refer-To URI a Priv-Answer-Mode header with the value "Auto" according to rules and procedures of [RFC5373] if the PoC User has requested Manual Answer Override;

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NOTE 3: The Refer-To URI can be a PoC Address or a content-ID URL.

- 10. SHALL include in the Refer-To URI an Answer-Mode header with the value "Manual;require" according to rules and procedures of [RFC5373] if the PoC User has requested that Manual Answer Mode be required at the Invited PoC Client; and,
- 11. 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 4: The PoC Server does not send any SIP NOTIFY request if the PoC Client inserted the Refer-Sub header with value “false” in the SIP REFER 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.

6.1.8 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 E.4.1 “*Release version in User-agent and Server headers*”; and,

NOTE 1: The value of the content-type is outside the scope of this specification.

- 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 and if PoC Client supports 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.group-advertisement+xml body. The PoC Client:

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a) SHALL include one <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 include free text in the <note> element.

NOTE 1: The vnd.poc.group-advertisement+xml is specified in the subclause E.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 serviceaccording to rules and procedures of [RFC5365], 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 E.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 [RFC4575];
- 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 [RFC4575], and rules and procedures of the SIP/IP Core with the clarifications given in this subclause.

Upon receiving a SIP 200 "OK" or a SIP 202 “Accepted” response to the SIP SUBSCRIBE request the PoC Client:

- 1. SHALL store the address of the PoC Server 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 [RFC4575]; 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].

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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 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*".

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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

NOTE 1: This subclause provides common procedures for other subclauses and is not meant to be applied unless referenced.

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 2: 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 reject the SIP INVITE request with a SIP 403 "Forbidden" response if either of the following conditions are true:

  a) the incoming SIP INVITE request contained a Priv-Answer-Mode header with the value "Auto" as specified in [RFC5373] and the PoC Client does not support Manual Answer Override;

  b) the incoming SIP INVITE request contained an Answer-Mode header with the value "Manual;require" as specified in [RFC5373] and the PoC Client does not support Manual Answer Mode;

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

When generating SIP provisional responses other than the SIP 100 "Trying" or SIP 2xx final responses to the received initial SIP request the PoC Client:

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

  NOTE 3: 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.

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- 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 the SIP methods supported in this SIP dialog according to rules and procedures of [RFC3261];
- 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;
- 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 [RFC4028];
- 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*", if not provided automatically by SIP/IP Core; and,
- 8. SHALL include the PoC feature tag '+g.poc.talkburst' in the Contact header; and,
- 9. MAY include a Nick Name as specified in subclause 5.4"*Nick Name*" in the SIP 200 "OK" response to the initial SIP INVITE 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.

6.2.1.2 Auto-answer case

On receipt of an initial SIP INVITE request, the PoC Client SHALL perform the auto-answer procedures described in this subclause if any of the following conditions are true:

- the incoming SIP INVITE request contained an Answer-Mode header with the value "Auto" as specified in [RFC5373] and the PoC Client is set to Auto Answer Mode; or
- the incoming SIP INVITE request contained a Priv-Answer-Mode header with the value "Auto" as specified in [RFC5373], and the PoC Client does not have an already established PoC Session;

otherwise, do not continue with the rest of the steps in this subclause.

The PoC Client:

- 1. SHALL validate that the Media Parameters and at least one codec offered in the SIP INVITE request 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;
- 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 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 selected Talk Burst Control Protocol and Talk Burst parameters selected from those in the SDP offer contained in the SIP INVITE request; and,

  e) the port number to be used for the Talk Burst Control Protocol.
- 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*".

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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, the PoC Client SHALL perform the manual-answer procedures described in this subclause if any of the following conditions are true:

- the incoming SIP INVITE request contained an Answer-Mode header with the value "Manual;require" as specified in [RFC5373];
- the PoC Client is set to Manual Answer Mode and the incoming SIP INVITE request did not contain a Priv-Answer-Mode header with the value “Auto” as specified in [RFC5373];
- the incoming SIP INVITE request contained a Priv-Answer-Mode header with the value “Auto” as specified in [RFC5373] and the PoC Client has an already established PoC Session;

otherwise, do not continue with the rest of the steps in this subclause.

The PoC Client:

- 1. SHALL validate that the Media Parameters and at least one codec offered in the SIP INVITE request 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. SHOULD indicate to the PoC User if maximum amount of Simultaneous PoC Sessions are exceeded with this PoC Session in case Simultaneous PoC Sessions are supported. When accepting another PoC Session a PoC Session SHALL be released as described in the subclause 6.1.6 “*PoC Client leaving a PoC Session*”;

  NOTE: How the PoC Client interacts with the PoC User to determine which PoC Session to release is an implementation issue.

- 3. 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 steps3,4 and 6. If the user declines the PoC Session invitation, perform step 5;
- 4. 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;
- 5. 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 and Talk Burst parameters selected from those in the SDP offer contained in the SIP INVITE request; and,

  e) the port number to be used for the Talk Burst Control Protocol.

- 6. 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.
- 7. 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*”.

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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.

6.2.2 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 and at least one codec 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 and re-start the SIP Session timer according to rules and procedures specified in [RFC4028]], "*UAS Behavior*". The 'refresher' parameter in the Session-Expires header SHALL be set to 'uas'.
- 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: The value of the content-type is outside the scope of this specification.

- 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.

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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.

  Otherwise, continue with the rest of the steps.

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.

NOTE 2: The case PoC Client does not support the Group Advertisement is not needed to cover, because in this case the PoC Client has not registered the PoC feature tag '+g.poc. groupad' to the SIP/IP Core and will not receive a Group Advertisement message.

- 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 3: 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].

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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.

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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 establishment or rejoin using On-demand Session*".

- 2. SHALL if it is the Terminating PoC Service Point Trigger and

  a) if the Session Type uri-parameter is "session=prearranged" and,

  i. 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, 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,

  ii. if the SIP URI in the Request-URI of the SIP INVITE request corresponds to a Chat PoC Group owned by the PoC Server, the PoC Server SHALL return a SIP 404 "Not Found" response and include a Warning header as specified in [RFC3261] with the warning code 399 and the warning text set to '100 Correct Session Type of <Request-URI> is "session=chat"' and not continue with the rest of the steps.

  or,

  b) if the Session type uri-parameter is "session=chat" and,

  i. if the SIP URI in the Request-URI of the SIP INVITE request corresponds to a Chat PoC Group owned by the PoC Server, 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,

  ii. 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, the PoC Server SHALL return a SIP 404 "Not Found" response and include a Warning header as specified in [RFC3261] with the warning code 399 and the warning text set to '101 Correct Session Type of <Request-URI> is "session=prearranged"' and not continue with the rest of the steps.

  or,

  c) if a Session Type uri parameter is not included and

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i. 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, 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,

ii. if the SIP URI in the Request-URI of the SIP INVITE request corresponds to a Chat PoC Group owned by the PoC Server, 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*";

d) 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,

e) 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,

f) if the SIP URI in the Request-URI of the SIP INVITE request is unknown to the PoC Server the PoC Server SHALL perform the actions specified in subclause 7.5.2 *"Conference URI does not exist"*.

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*".

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7.2 Controlling PoC Function procedures

7.2.1 Request terminating at the Controlling PoC Function

7.2.1.1 General

NOTE: This subclause provides common procedures for other subclauses and is not meant to be applied unless referenced.

On receipt of an initial SIP INVITE request the PoC Server

- 1. SHALL store the supported SIP methods if received in the Allow header; and,
- 2. SHALL use the Nick Name, if a Nick Name is included, according to the priority specified in subclause 5.4 “Nick Name”.

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 the SIP methods supported in this SIP dialog according to rules and procedures of [RFC3261];
- 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 the SIP methods supported in this SIP dialog according to rules and procedures of [RFC3261];
- 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 [RFC4028];
- 4. SHALL include the option tag 'timer' in a Require header;
- 5. 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.
- 6. 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,
- 7. 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.

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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. Otherwise, continue with the rest of the steps;
- 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 according to local 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;
- 4. SHALL validate that the Media Parameters and at least one codec offered in the SIP INVITE request 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;
- 5. 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 and include a Warning header as specified in [RFC3261] with the warning code 399 and the warning text set to “102 too many participants”. Otherwise, continue with the rest of the steps;
- 6. SHALL allocate a PoC Session Identity for the PoC Session; 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 1: How the multiple invited members are conveyed in the SIP INVITE request is specified in [RFC5366].

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 [RFC4964] 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 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 to be used for the Talk Burst Control Protocol; 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;

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NOTE 2: If PoC Server supports Unconfirmed Indication and generates and sends SIP 200 “OK” response towards Inviting PoC Client based on received SIP 183 “Session Progress”, then PoC Server needs either to prepare for transcoding or PoC Session modification. This is needed in the case if the SDP answer contained in SIP 200 “OK” sent towards Inviting PoC Client is in mismatch with the SDP answer contained in SIP 200 “OK” received from terminating network.

- 5. SHALL interact with User Plane as specified in [OMA-PoC-UP] *"Controlling PoC Function procedures at PoC Session initialization"*; and,
- 6. SHALL generate 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*".
- 7. SHALL send the SIP NOTIFY request to the PoC Clients according to rules and procedure of the SIP/IP Core.

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" 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 which SHALL be from the list contained in the original SDP offer in the received SIP INVITE request from the originating network and MAY be reduced based on the SDP answer received in SIP 200 “OK” response from the Invited PoC Client(s).

NOTE 3: If transcoding is supported and codec(s) and Media Parameters other than those contained in the SDP offer in the received SIP INVITE request from originating network have been offered in the SDP of the SIP INVITE request sent to Invited PoC Client(s), the SDP answer in the SIP 200 “OK” response towards originating network may be different from the SDP answer received in SIP 200 “OK” response from the Invited PoC Client(s).

  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 RTCP at the PoC Server according to rules and procedures of [RFC3605];

  d) The Talk Burst Control Protocol 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 to be used for the Talk Burst Control Protocol; and

  f) Optionally “tb-granted” indication as specified in E.3 “*SDP Extensions*”.

- 3. SHALL send a SIP 200 "OK" response towards 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*".

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- 5. SHALL generate 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*".
- 6. SHALL send the SIP NOTIFY request to the PoC Clients according to rules and procedure of the SIP/IP Core.

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 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 and include a Warning header as specified in [RFC3261] with the warning code 399 and the warning text set to "105 isfocus already assigned" . 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 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;
- 4. 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" 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]. If privacy is allowed, the PoC Server SHALL create and cache an anonymous PoC Address as specified in subclause 5.9 "*Anonymous PoC Address*". Otherwise, continue with the rest of the steps;
- 5. SHALL validate that the Media Parameters and at least one codec offered in the SIP INVITE request 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;
- 6. if the PoC Group does not have already an on-going 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 requests*".

  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.
- 7. if the PoC Group has already an active PoC Session then PoC Server:

  a) 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;

  b) SHALL check if "<max-participant-count>" as specified in [PoC XDM Specification] is already reached If reached, PoC Server SHALL return a SIP 486 "Busy Here" response and include a Warning header as specified in

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[RFC3261] with the warning code 399 and the warning text set to “102 Too many participants” to the originating network. Otherwise, continue with the rest of the steps;

c) SHALL generate a SIP 200 "OK" response as specified in the 7.2.1.1 "*General*";

d) 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] as follows:

i. The IP address and port number at the PoC Server for the RTP Session;

ii. The codec(s) and Media Parameters which SHALL be from the list contained in the SDP offer in the incoming SIP INVITE request from the originating network; The PoC Server MAY reduce the list of codec(s) and Media Parameters based on the following: 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); codec(s) and Media Parameters that are currently used in this PoC Session;

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 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. and

v. The PoC Server’s port number to be used for the Talk Burst Control Protocol.

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

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

g) SHALL generate 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*"; and,

h) SHALL send the SIP NOTIFY request to the PoC Clients according to rules and procedure of the SIP/IP Core.

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 [RFC4964] and as specified in subclause 7.2.2.2 *"PoC Session Invitation Requests*" 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 Warning header as specified in [RFC3261] with the warning code 399 and the warning text set to “103 Too many group members” in the SIP 200 “OK” response, if the Pre-arranged PoC Group has more than <max-participant-count> members as specified in [PoC XDM Specification].
- 3. 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 to be used for RTCP at the PoC Server according to rules and procedures of [RFC3605];

  d) The Talk Burst Control Protocol and Talk Burst parameters selected by the PoC Server from those contained in the SDP offer in the incoming SIP INVITE request;

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e) The PoC Server's port number to be used for the Talk Burst Control Protocol; and,

g) Optionally "tb-granted" indication as specified in E.3 "*SDP Extensions*".

- 4. SHALL include a P-Answer-State header with the value "Unconfirmed";
- 5. SHALL send the SIP 200 "OK" response towards the Inviting PoC Client according to rules and procedures of the SIP/IP Core;
- 6. SHALL interact with User Plane as specified in [OMA-PoC-UP] *"Controlling PoC Function procedures at PoC Session initialization";*
- 7. SHALL generate 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*"; and
- 8. SHALL send the SIP NOTIFY request to the PoC Clients according to rules and procedure of the SIP/IP Core.

Upon receiving a SIP 180 "Ringing" response as specified in subclause 7.2.2.2 *"PoC Session invitation requests*" 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 requests*" 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 Warning header as specified in [RFC3261] with the warning code 399 and the warning textset to "103 Too many group members" in the SIP 200 "OK" response, if the Pre-arranged PoC Group has more than <max-participant-count> members as specified in [PoC XDM Specification].
- 3. 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 which SHALL be from the list contained in the SDP offer in the incoming SIP INVITE request from the originating network; The PoC Server MAY reduce the list of codec(s) and Media Parameters based on the following: 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); codec(s) and Media Parameters that are currently used in this 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 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. e) The PoC Server's port number to be used for the Talk Burst Control Protocol; and,

  f) Optionally "tb-granted" indication as specified in E.3 "*SDP Extensions*".
- 4. SHALL send a SIP 200 "OK" response to 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*";,
- 6. SHALL generate 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*"; and,.

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- 7. SHALL send the SIP NOTIFY request to the PoC Clients according to rules and procedure of the SIP/IP Core.

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 perform either of the following:

  a) 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,

  b) 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.

- 2. MAY invite an additional member of the Pre-arranged PoC Group as specified in subclause 7.2.2.2 "*PoC Session invitation request*" that has not already been invited, if the Pre-arranged PoC Group has more than <max-participant-count> members as specified in [PoC XDM Specification], and all members have not yet been invited.

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 and include a Warning header as specified in [RFC3261] with the warning code 399 and the warning text '100 Correct Session Type of <Request-URI> is "session=chat"' or '101 Correct Session Type of <Request-URI> is "session=prearranged"'. 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 check if "<max-participant-count>" as specified in [PoC-XDM Specification] is already reached. If reached, PoC Server SHALL return a SIP 486 "Busy Here" response and include a Warning header as specified in [RFC3261] with the warning code 399 and the warning text set to "102 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" 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]. If privacy is allowed, the PoC Server SHALL create and cache an anonymous PoC Address as specified in subclause 5.9 "*Anonymous PoC Address*". Otherwise, continue with the rest of the steps;
- 6. SHALL validate that the Media Parameters and at least one codec offered in the SIP INVITE request 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;

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b) The codec(s) and Media Parameters which SHALL be from the list contained in the SDP offer in the incoming SIP INVITE request from the originating network. The PoC Server MAY reduce the list of codec(s) and Media Parameters based on the following: 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); codec(s) and Media Parameters that are currently used in this 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 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; and

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

- 9. SHALL send the SIP 200 "OK" response towards the PoC Client according to rules and procedures of SIP/IP Core;
- 10. SHALL interact with the User Plane as specified in [OMA-PoC- UP] "*Controlling PoC Function procedures at PoC Session initialization*";
- 11. SHALL generate 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*"; and,
- 12. SHALL send the SIP NOTIFY request to the PoC Clients 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 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 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 and include a Warning header as specified in [RFC3261] with the warning code 399 and the warning text set to"105 already assigned". 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 SHALL reject the request with a SIP 403 "Forbidden" response to the originating network. Otherwise, continue with the rest of the steps;
- 4. SHALL check if “<max-participant-count>” as specified in [PoC-XDM Specification] is already reached. If reached, PoC Server SHALL return SIP 486 “Busy Here” response and include a Warning header as specified in [RFC3261] with the warning code 399 and the warning text set to “102 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" 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]. If privacy is allowed, the PoC Server SHALL create and cache an anonymous PoC Address as specified in subclause 5.9 "*Anonymous PoC Address*". Otherwise, continue with the rest of the steps;
- 6. SHALL validate that the Media Parameters and at least one codec offered in the SIP INVITE request 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;

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- 7. SHALL check whether the Chat PoC Group Session already exists. If it doesn't exist, the PoC Server creates a Chat PoC Group Session;
- 8. SHALL accept the SIP request and generate 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 which SHALL be from the list contained in the SDP offer in the incoming SIP INVITE request from the originating network; The PoC Server MAY reduce the list of codec(s) and Media Parameters based on the following: 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); codec(s) and Media Parameters that are currently used in this 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 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; and

    v. The PoC Server’s port number to be used for the Talk Burst Control Protocol.
- 9. SHALL send the SIP 200 "OK" response towards the PoC Client according to rules and procedures of SIP/IP Core;
- 10. SHALL interact with the User Plane as specified in [OMA-PoC-UP] "*Controlling PoC Function procedures at PoC Session initialization*";
- 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"; and,
- 12. SHALL send the SIP NOTIFY request to the PoC Clients 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 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 and at least one codec offered in the SIP UPDATE request or SIP re-INVITE request 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:

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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 the selected codec(s), which SHALL be from the list contained in the SDP offer contained in the SIP UPDATE request or SIP re-INVITE request; and,

b) send the SIP 200 "OK" response to the SIP/IP Core along the signalling path.

- 4. SHOULD generate a notification as specified in subclause 7.2.1.11.2 "Generating *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; and,
- 5. SHOULD send the SIP NOTIFY request to the PoC Clients according to rules and procedure of the SIP/IP Core.

NOTE: The PoC Server may determine to update the Media Parameters and codec(s) 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 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 PoC Group or Chat PoC 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]. If privacy is allowed, the PoC Server SHALL create and cache an anonymous PoC Address as specified in subclause 5.9 "*Anonymous PoC Address*". Otherwise, continue with the rest of the steps;
- 3. 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 [RFC5368];
- 4. SHALL, for the addition of PoC User(s) to an Ad-hoc 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 an Ad-hoc PoC Group Session. If exceeded, according to the local policy, the PoC Server SHALL return a SIP 486 "Busy Here" response and include a Warning header as specified in [RFC3261] with the warning code 399 and the warning text set to "102 Too many participants" to the originating network. Otherwise, continue with the rest of the steps;
- 5. 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 and include a Warning header as specified in [RFC3261] with the warning code 399 and the warning text to "102 Too many participants" to the originating network. Otherwise, continue with the rest of the steps.
- 6. SHALL generate a SIP 2xx final response to the SIP REFER request according to rules and procedures of [RFC3515];
- 7. SHALL if the SIP REFER request was an initial SIP request received outside of an existing dialog, 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 [RFC4488];
- 8. SHALL check the presence of the Refer-Sub header of the SIP REFER request and if it is present and it has the value "false" then the PoC Server SHALL include in the response to the SIP REFER request a Refer-Sub header set to "false" according to rules and procedures of [RFC4488];

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- 9. 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;
- 10. SHALL perform for the PoC Addresses allowed according to 7.2.1.15 "*PoC Session adding policy*" the actions described in subclause 7.2.2.2 "*PoC Session invitation request*" for each PoC User; and,
- 11. SHALL if the Refer-Sub header is not present or is set to “true” in 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 [RFC5368] is an implicit subscription to event “refer” if the Refer-Sub header is not present or is set to “true”.

Upon receiving a SIP 403 "Forbidden" response with the warning code 399 and the warning text "105 isfocus already assigned", the PoC Server SHALL if the Refer-Sub header is not present or is set to “true” in the SIP REFER request, generate and send to the PoC Client a SIP NOTIFY request as specified in the subclause7.2.1.17 “*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 [RFC4964] 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;
- 4. SHALL generate 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”;* and,.
- 5. SHALL send the SIP NOTIFY request to the PoC Clients 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.

7.2.1.9.2 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 actions to verify the Authenticated Originator’s PoC Address of the PoC Client and authorize the request according to local 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 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:

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i. SHALL generate a SIP 2xx final response to the SIP REFER request according to rules and procedures of [RFC3515];

ii. SHALL if the SIP REFER request was an initial SIP request received outside of an existing dialog, 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 [RFC4488];

iii. SHALL check the presence of the Refer-Sub header of the SIP REFER request and if it is present and it has the value “false” then the PoC Server SHALL include in the response to the SIP REFER request a Refer-Sub header set to “false” according to rules and procedures of [RFC4488];

iv. SHALL send the SIP response to the SIP REFER request towards the PoC Client according to rules and procedures of the SIP/IP Core;

v. 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"*;

vi. 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;

vii. 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";*

viii. 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,

ix. SHALL send the SIP NOTIFY request to the PoC Client(s) 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.

- 3. SHALL if the Refer-Sub header is not present or is set to “true” in 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 [RFC5368] is an implicit subscription to event “refer” in case the Refer-Sub header is not present in or is set to “true”.

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"*;

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- 3. 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"*;
- 4. 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; and,
- 5. 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 [RFC4575] 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. MAY check whether the Accept-Contact header includes the PoC feature tag '+g.poc.talkburst' and if it is not included, 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 as specified in subclause 7.2.1.18 “*PoC Session Participant information 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;

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

- 5. SHALL create a subscription to the conference state of the PoC Session according to rules and procedures of [RFC3265] and [RFC4575];
- 6. SHALL generate a SIP 200 "OK" or a SIP 202 "Accepted" response to the SIP SUBSCRIBE request according to rules and procedures of [RFC3265] [RFC4575];
- 7. SHALL set the Contact header of the SIP response to the address of the PoC Server;
- 8. 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.

- 9. SHALL include the option tag "norefersub" in a Supported header in the SIP response;

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- 10. SHALL send the 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 [RFC4575].

The PoC Server SHALL include a MIME conference-info+xml body according to rules and procedures of [RFC4575] 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 anonymous PoC Address as specified in subclause 5.9 "*Anonymous PoC 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 PoC Group definition in case of a Pre-arranged or Restricted Chat 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 [RFC4575], 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;

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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 or when the Invited PoC Client is disconnected from the PoC Session before the Invited PoC Client has accepted the invitation and the "alerting" notification has been 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 [RFC4575] 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 include a Subscription-State header with the value of "terminated" and a reason parameter of "noresource"; 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 the Exploder-URI identifying a SIP MESSAGE URI-list service according to rules and procedures of [RFC5365] 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 actions to verify the Authenticated Originator's PoC Address and authorize the request according to local 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;
- 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;

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- 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 [RFC4028].

On expiry of the SIP Session timer the PoC Server SHALL initiated 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 Group Members contained in the <list> element of the PoC Group document as specified in [PoC-XDM Specification].

NOTE 1: The PoC Server does not invite the Inviting PoC Client.

If the number of PoC Group Members exceeds <max-participant-count>, the PoC Server performing the Controlling PoC Function SHALL invite only <max-participant-count> members from the list.

NOTE 2: How the PoC Server performing the Controlling PoC Function selects the <max-participant-count> members to invite is outside the scope of this specification.

7.2.1.15 PoC Session adding policy

When adding PoC Users to a PoC Session, the PoC Server performing the Controlling PoC Function SHALL invite PoC Users only if the Authenticated Originator's PoC Address is a Participant of the PoC Session.

In the case of a Pre-arranged 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 a 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 Chat PoC Group Session 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 allowed to join by the <join-handling> action of the PoC Group's authorization rules as specified in [PoC-XDM Specification].

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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 the 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 PoC Group Session and the Participant is removed from the PoC Group.

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b) if the PoC Session is Chat PoC Group Session and the Participant is no longer allowed to join by the <join-handling> action of the PoC Group's authorization rules, as specified in [PoC-XDM Specification].

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, if generating a NOTIFY request as the result of sending a SIP INVITE request, 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]. In case no SIP response is received the SIP 100 "Trying" SHALL be used when no SIP response is received yet;

  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, if generating a NOTIFY request as the result of sending a SIP BYE request, include in the SIP NOTIFY request a MIME sipfrag body as specified in the [RFC3420] with the Status-Line received in the SIP response, (e.g. SIP 200 "OK"), as specified in [RFC3261]. In case no SIP response is received the SIP 100 "Trying" SHALL be used when no SIP response is received yet; and,
- 4. 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.

7.2.1.18 PoC Session Participant information policy

The PoC Server performing the Controlling PoC Function SHALL only allow the subscription to the Participant information of the PoC Session hosted by the PoC Server, to those PoC Users which satisfy any of the following conditions:

- 1. if the PoC Session is Ad-hoc PoC Group Session or 1-1 PoC Session, the Authenticated Originator's PoC Address is

  a) a PoC Address of a PoC Session Participant of the PoC Session; or

  b) a PoC Address of an Invited PoC User of the PoC Session
- 2. if the PoC Session is Pre-arranged PoC Group Session or Chat PoC Group Session, 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].

7.2.2 Request initiated by the Controlling PoC Function

7.2.2.1 General

NOTE 1: This subclause provides common procedures for other subclauses and is not meant to be applied unless referenced.

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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” 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 2: 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 an option tag 'norefersub' in a Supported header according to rules and procedures of [RFC4488];
- 6. SHALL include Authenticated Originator’s PoC Address as specified in subclause 5.2 “*Authenticated Originator's PoC Address*”

  a) with the URI set to the PoC Address of the Inviting PoC Client and the Nick Name to the one defined for this PoC User in the incoming SIP request in case of 1-1 PoC Session and Ad-hoc PoC Group Session; or,

  b) with the URI set to the PoC Group Identity and the Nick Name to the one defined for this PoC Group in the PoC Group definitions 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;
- 7. SHALL include a Referred-By header with the Authenticated Originator’s PoC Address of the Inviting PoC Client;
- 8. 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*”;
- 9. SHOULD include the Session-Expires header with the refresher parameter set to 'uas' according to rules and procedures of [RFC4028];
- 10. SHALL include the Supported header set to "timer";
- 11. 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;
- 12. SHOULD include an Allow header the SIP methods supported in this SIP dialog according to rules and procedures of [RFC3261]; and,
- 13. SHALL include unmodified Answer-Mode header if present in the incoming SIP INVITE request or in the Refer-To URI of the incoming SIP REFER request that caused the outgoing SIP INVITE request to be generated.
- 14. SHALL include unmodified Priv-Answer-Mode header if present in the incoming SIP INVITE request or in the Refer-To URI of the incoming SIP REFER request that caused the outgoing SIP INVITE request to be generated, if manual answer override is supported.

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

1. SHALL start the SIP Session timer according to rules and procedures of [RFC4028]; and,

2. SHALL use the Nick name, if a Nick Name is included, according to the priority specified in subclause 5.4 “*Nick Name*”.

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"*.

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The PoC Server:

- 1. SHALL generate a SIP INVITE request as specified in subclause 7.2.2.1 "*General*";
- 2. 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 which SHALL be either from the list contained in the original SDP offer from the inviting PoC Client and/or other codec(s), if any, that PoC Server is capable of transcoding;

  NOTE 1: The PoC Server may narrow the selection of Media Parameters and codec(s) according to the local policy, which may be a function of one or more of the following: Inter-operator service level agreement; domain of the invited PoC Client; other factors.

  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 Protocol and Talk Burst parameters selected by the PoC Server from those contained in the original SDP offer; and,

  e) The PoC Server's port number for the Talk Burst Control Protocol.
- 3. 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 generate 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*"; and,
- 2. MAY send the SIP NOTIFY request to the PoC Client according to rules and procedure of the SIP/IP Core.

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 in the case of an invitation to a Pre-arranged PoC Group Session or to a Chat PoC Group Session, check whether the privacy is allowed for 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 create and cache an anonymous PoC Address as specified in subclause 5.9 "*Anonymous PoC Address*" for the Invited PoC User, if anonymity is requested via a Privacy header containing the tag 'id' in the SIP response and anonymous PoC Address has not been created yet for the Invited PoC User;
- 5. SHALL interact with the User Plane as specified in [OMA-PoC-UP] "*Controlling PoC Function procedures at PoC Session initialization*";

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- 6. SHALL generate 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";* and,
- 7. SHALL send the SIP NOTIFY request to the PoC Client according to rules and procedure of the SIP/IP Core..

NOTE 2: 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:

- 1. 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*";
- 2. SHALL generate 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*"; and,
- 3. SHALL send the SIP NOTIFY request to the PoC Clients 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.

7.2.2.5 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"*.

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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

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 rest of the steps;
- 2. SHALL generate a SIP MESSAGE request according to rules and procedures of [RFC3428];
- 3. 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];
- 4. SHALL include PoC specific content in form of application/vnd.poc.group-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;
- 5. SHALL set the Request-URI to the PoC Address; and,
- 6. 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

NOTE 1: This subclause provides common procedures for other subclauses and is not meant to be applied unless referenced.

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 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;
- 4. 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];
- 5. 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 2: The use of the option tag ‘precondition’, as specified in [RFC3312], is not defined for the POC-1 or POC-2 reference points.

NOTE 3: The use of the option tag ‘100rel’, as specified in [RFC3262] is not defined for the POC-1 reference point.

- 6. SHOULD include the Session-Expires header with the refresher parameter set to 'uac' according to rules and procedures of [RFC4028];

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- 7. SHALL include the option tag 'timer' in a Supported header ';
- 8. SHALL store the allowed SIP methods if received in the Allow header;
- 9. SHOULD include an Allow header with the SIP methods supported in this SIP dialog according to rules and procedures of [RFC3261];
- 10. SHALL include the Authenticated Originator's PoC Address received in the incoming SIP INVITE request in the outgoing SIP INVITE request;
- 11. SHALL, if the incoming SIP INVITE request contained an Answer-Mode header, or the incoming SIP REFER request contained a Refer-To URI with an Answer-Mode header:

  a) include an Answer-Mode header unmodified if the received value is set to “Manual;require”;

  b) discard the Answer-Mode header if the received value is set to "Auto" or “Manual”; or

  c) return a SIP 403 "Forbidden" response and not continue with the rest of the steps if the received value is set to “Auto;require”;
- 12. SHALL, if the incoming SIP INVITE request contained a Priv-Answer-Mode header, or the incoming SIP REFER request contained a Refer-To URI with a Priv-Answer-Mode header and manual answer override is supported:

  a) include a Priv-Answer-Mode header unmodified if the received value is set to “Auto”;

  b) return a SIP 403 "Forbidden" response and not continue with the rest of the steps if the received value is set to anything other than “Auto”;
- 13. SHALL include in the Contact header the PoC 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 if received in the incoming SIP response in the outgoing SIP provisional respond; 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 feature tag ‘isfocus’;

  d) include the Session Type uri-parameter provided in the Contact header of the provisional response received from the Controlling PoC Function.
- 5. SHALL include value 'id' in the Privacy header according to rules and procedures of [RFC3325], if the privacy is requested.

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 [RFC4028];

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- 6. SHOULD include an Allow header with the SIP methods supported in this SIP dialog according to rules and procedures of [RFC3261];
- 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';

  c) include the feature tag 'isfocus'; and,

  d) 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 if received in the incoming SIP 200 "OK" response in outgoing SIP 200 "OK" response.
- 9. SHALL include value 'id' in the Privacy header according to rules and procedures of [RFC3325], if the privacy is requested;
- 10. SHALL include the option tag "norefersub" in a Supported header according to rules and procedures of [RFC4488];

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. MAY check whether the Accept-Contact header included the PoC feature tag '+g.poc.talkburst' and if it is not included, 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 actions to verify the Authenticated Originator's PoC Address of the PoC Client and authorize the request according to local policy and if not authorized, the PoC Server SHALL return a SIP 403 "Forbidden" response. Otherwise continue with the rest of the steps;
- 5. SHALL validate that the Media Parameters and at least one codec offered in the SIP INVITE request 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 conference URI that identifies to identify the Pre-established Session;
- 7. SHALL store the Nick Name contained in the Authenticated Originator's PoC Address;
- 8. SHALL generate a SIP 200 "OK" response to the SIP INVITE request as follows:

  a) a Contact header containing the conference URI that identifies to identify the Pre-established Session along with the PoC feature tag '+g.poc.talkburst' and the feature tag 'isfocus';

  b) an Allow header with the SIP methods supported in this SIP dialog according to rules and procedures of [RFC3261];

  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;

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e) a Session-Expires header with the refresher parameter set to "uac" according to rules and procedures of [RFC4028];

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 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 to be used for the Talk Burst Control Protocol.

- 9. SHALL send the SIP 200 "OK" response towards the PoC Client according to the rules and procedures of the SIP/IP Core;
- 10. SHALL start the SIP Session timer using the value received in the Session-Expires header according to rules and procedures of [RFC4028]; and,
- 11. SHALL interact with the User Plane as specified in [OMA-PoC-UP] " *Pre-established Session state diagrams – basic* ".

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 that modifies the Pre-established Session.

The PoC Server:

- 1. SHALL validate that the new Media Parameters ("a=inactive" or "a=sendrecv") and at least one codec offered in the SIP UPDATE request or SIP re-INVITE request 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"*; and,
- 3. 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 Parameters and the selected codec(s); 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 modification 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.

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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 Priv-Answer-Mode header with the value "Auto" is present in the incoming SIP INVITE request, authorize according to local policy whether the Served PoC User indicated by the Authenticated Originator's PoC Address is entitled to request manual answer override and if not authorized or if manual answer override functionality is not supported the PoC Server SHALL return a SIP 403 "Forbidden" response and not continue with the rest of the steps;
- 2. SHALL, if the PoC Service Settings for the Simultaneous PoC Sessions Support is set to "SSS active", check if the number of maximum Simultaneous PoC Sessions for the PoC Client as specified in subclause 5.7a "*PoC Session association*" has exceeded. If exceeded, the PoC Server SHALL respond with a SIP 486 "Busy Here" response and include a Warning header as specified in [RFC3261] with the warning code 399 and the warning text set to '104 Too many Simultaneous PoC Sessions'. Otherwise, continue with the rest of the steps; and,
- 3. 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. MAY check whether the Accept-Contact header includes the PoC feature tag '+g.poc.talkburst' and if it does not, return a SIP 403 "Forbidden" response. Otherwise, continue with the rest of the steps;
- 2. SHALL perform actions to verify the Authenticated Originator's PoC Address of the Inviting PoC User and authorize the request according to local 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;
- 3. SHALL validate that the new Media Parameters and at least one codec offered in the SIP INVITE request 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, if a Priv-Answer-Mode header with the value "Auto" is present in the incoming SIP INVITE request, authorize according to local policy whether the Served PoC User indicated by the Authenticated Originator's PoC Address is entitled to request manual answer override or if manual answer override functionality is not supported and if not authorized the PoC Server SHALL return a SIP 403 "Forbidden" response and not continue with the rest of the steps;
- 6. SHALL, if the PoC Service Settings for the Simultaneous PoC Sessions Support is set to "SSS active", check if the number of maximum Simultaneous PoC Sessions for the PoC Client as specified in subclause 5.7a "*PoC Session association*" has exceeded. If exceeded, the PoC Server SHALL respond with a SIP 486 "Busy Here" response and include a Warning header as specified in [RFC3261] with the warning code 399 and the warning text set to"104 too many Simultaneous PoC Sessions". Otherwise, continue with the rest of the steps;
- 7. SHALL generate a SIP INVITE request as specified in subclause 7.3.1.1 "*General*";
- 8. SHALL include as the contents of the Request-URI:

  a) copy the received Request-URI including the Session Type uri-parameter; or,

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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.

- 9. 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 which SHALL be either from the list contained in the original SDP offer from the inviting PoC Client, and/or other codec(s), if any, that PoC Server is able to transcode;

NOTE 4: The PoC Server may narrow the selection of Media Parameters and codec(s) according to the local policy, which may be a function of one or more of the following: Inter-operator service level agreement; domain of the invited PoC Client; other factors.

  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 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

  e) The PoC Server’s port number for the Talk Burst Control Protocol.

- 10. 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 initiating PoC Client 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;

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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 and Talk Burst parameters selected by PoC Server from those contained in the original SDP offer from the PoC Client.

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

f) Optionally "tb-granted" indication as specified in E.3 " *SDP Extensions* ".

- 5. SHALL include unmodified a P-Answer-State header if a P-Answer-State header was present in the incoming SIP 200 "OK" response;
- 6. SHALL send the SIP 200 "OK" response to the PoC Client according to rules and procedures of SIP/IP Core; and
- 7. SHALL interact with User Plane as specified in [OMA-PoC-UP] "*Participating PoC Function procedures at PoC Session initialization*";

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 1: 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 as specified in subclause 5.7a "*PoC Session association*" has exceeded. If exceeded, the PoC Server SHALL respond with a SIP 486 "Busy Here" response and include a Warning header as specified in [RFC3261] with the warning code 399 and the warning text set to "104 too many Simultaneous PoC Sessions". Otherwise, continue with the rest of the steps;
- 2. SHALL if a Priv-Answer-Mode header with the value "Auto" is present in the incoming SIP REFER request, authorize according to local policy whether the Served PoC User indicated by the Authenticated Originator's PoC Address is entitled to request manual answer override and if not authorized or if manual answer override functionality is not supported the PoC Server SHALL return a SIP 403 "Forbidden" response and not continue with the rest of the steps.
- 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 Refer-Sub header of the SIP REFER request and if it is present and it has the value "false" then the PoC Server SHALL include in the response to the SIP REFER request a Refer-Sub header set to "false" according to rules and procedures of [RFC4488];
- 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*";

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- 9. SHALL insert a Request-URI using the URI out of the Refer-To in the SIP REFER request:
- 10. 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) 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 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,

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

NOTE 2: 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".

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

- 12. SHALL if the Refer-Sub header is not present or is set to "true" in 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 if 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 warning code 399 and the warning text "105 isfocus already assigned", the PoC Server SHALL if the Refer-Sub header is not present or is set to "true"in 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*".

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.

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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 on-going 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 on-going 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.

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7.3.1.8 SIP REFER request received

Upon receiving a SIP REFER request containing in the Request-URI a conference URI that identifies 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 Session 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 to a SIP REFER request the PoC Server forwarded, 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.

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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 6.1.3.2.3 "*PoC Client initiates a Pre-arranged PoC Group Session or joins a 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 if the SIP REFER request was an initial SIP request received outside of an existing dialog, 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 [RFC4488];

  d) SHALL check the presence of the Refer-Sub header of the SIP REFER request and if it is present and it has the value "false" then the PoC Server SHALL include in the response to the SIP REFER request a Refer-Sub header set to "false" according to rules and procedures of [RFC4488];

  e) SHALL send the SIP response to the SIP REFER request towards the PoC Client according to rules and procedures of the SIP/IP Core;

  f) SHALL generate a SIP BYE request and set the Request-URI to the PoC Session Identity;

  g) SHALL send the SIP BYE request towards the Controlling PoC Function according to rules and procedures of the SIP/IP Core;

  h) 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,

  i) SHALL if the Refer-Sub header is not present or it is set to "true" in 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 [RFC5368] is an implicit subscription to event "refer" in case the Refer-Sub header is not present or is set to "true".

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.

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- 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 remove the owner from the PoC Session by performing the procedures as specified in subclause 7.2.1.9.3 "*SIP BYE request received within a Pre-established Session*"; 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;

- 3. SHALL check whether there is a PoC Session establishment on-going using the Pre-established Session and the PoC Session is controlled by this PoC Server. If there is, the PoC Server:

  a) SHALL cancel the request performing the procedures as specified in subclause 7.2.1.10 "*Cancel of PoC Session setup request*" 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;

  c) SHALL release the PoC Session as specified in the subclause 7.2.2.4 "*Removal of Participant from PoC Session*", if a SIP 2xx response for the SIP INVITE request is received from an Invited PoC Client;

- 4. SHALL check whether there is a PoC Session establishment on-going using the Pre-established Session and the PoC Session is controlled by another PoC Server. If there is, the PoC Server:

  a) SHALL cancel the request performing the procedures as specified in subclause 7.3.1.9. *"SIP CANCEL request* 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;

  c) SHALL release the PoC Session as specified in the subclause 7.3.1.10.1 "*SIP BYE request from PoC Client – On-demand Session case*", if a SIP 2xx response for the SIP INVITE request is received from PoC Server performing the Controlling PoC Function;

- 5. 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 reject the SIP MESSAGE request with a SIP 403 "Forbidden" response if Group Advertisement is not supported by the PoC Server. Otherwise continue with the rest of the steps
- 2. SHALL return a SIP 403 “Forbidden” response, if anonymity is requested. Otherwise, continue with the rest of the steps;

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- 3. SHALL perform actions to verify the Authenticated Originator's PoC Address of the PoC User and authorize the request according to local policy, and if not authorized the PoC Server SHALL return a SIP 403 "Forbidden" response. Otherwise, continue with the rest of the steps;
- 4. 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,
- 5. 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 locking 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;

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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. MAY check whether the Accept-Contact header includes the PoC feature tag '+g.poc.talkburst' and if not included, 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;

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- 3. SHALL perform actions to verify the Authenticated Originator's PoC Address of the PoC Client and authorize the request according to local policy, 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 Service Settings until PoC Sercice Settings expiration timer is expired;

NOTE: The PoC Service Settings are "Answer Mode Indication", "Incoming PoC Session Barring", "Incoming Instant Personal Alert Barring" and "Simultaneous PoC Sessions Support".

- 6. SHALL generate a SIP 200 "OK" response according to rules and procedures of [RFC3261];
- 7. 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*"; and,
- 8. 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.

7.3.1.15 PoC Session release from User Plane

Upon receiving a PoC Session release request from the User Plane as specified in [OMA-PoC-UP] "*Receive TBCP Talk Burst Acknowledgement message (R: TB_Ack)*" or "*T15 (Connect message re-transmit) timer fired N times*" or "*Receive PoC Session release indication from PoC Client (R: PoC Session release from PoC Client)*", the PoC Server:

- 1. SHALL remove the Participant referred by User Plane 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"*;
- 2. 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;
- 3. 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";*
- 4. 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,
- 5. SHALL send the SIP NOTIFY request to the PoC Client(s) 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.

7.3.2 Requests terminated by the served PoC User

7.3.2.1 General

NOTE 1: This subclause provides common procedures for other subclauses and is not meant to be applied unless referenced.

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;

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- 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 [RFC4028];
- 6. SHALL include the option tag "timer" in the Supported header;
- 7. SHALL include the option tag "norefersub" in a Supported header;
- 8. SHOULD include the Allow header with the SIP methods supported in this SIP dialog according to rules and procedures of [RFC3261];
- 9. 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';

  c) include the feature tag 'isfocus'; and,

  d) include the Session Type uri-parameter provided in the SIP INVITE request by the Controlling PoC Function.
- 10. SHALL include the Authenticated Originator's PoC Address if received in the incoming SIP INVITE request in the outgoing SIP INVITE request; and,
- 11. SHALL include the Nick Name received in incoming SIP INVITE request in the outgoing SIP INVITE request.

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 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. 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*".
- 3. SHOULD include the Allow header with the SIP methods supported in this SIP dialog according to rules and procedures of [RFC3261], if not previously sent in a provisional response for this dialog;
- 4. 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,
- 5. SHALL include as the URI in the Authenticated Originator's PoC Address in the outgoing SIP provisional response either

  a) the URI contained in the Authenticated Originator's PoC Address received in the incoming SIP provisional response in the case of an On-Demand Session establishment; or

  b) the URI stored from the Request-URI received in the incoming SIP INVITE request in the case of a Pre-established Session establishment;
- 6. SHALL set the Nick Name in the Authenticated Originator's PoC Address to either

  a) the one defined for the PoC User in the PoC Server, if configured; otherwise the one in the incoming SIP provisional response if received, in the case of an On-Demand Session establishment; or

  b) the one defined for the PoC User in the PoC Server, if configured; otherwise the one stored from the Authenticated Originator's PoC Address contained in the SIP INVITE request if received during the Pre-established Session establishment for the PoC User in the case of a Pre-established Session; received in the incoming SIP provisional response in the outgoing SIP provisional response.
- 7. SHALL include value 'id' in the Privacy header according to rules and procedures of [RFC3325], if the privacy is requested either through a Privacy header with the value 'id' in the incoming SIP provisional response in the case of an

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On-Demand Session establishment, or in the SIP INVITE request received during the Pre-established Session establishment for the PoC User in the case of a Pre-established Session.

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 include as the URI in the Authenticated Originator's PoC Address in the outgoing SIP 200 "OK" response either

  a) the URI contained in the Authenticated Originator's PoC Address received in the incoming SIP 200 "OK" response in the case of an On-Demand session establishment; or

  b) the URI stored from the Request-URI received in the incoming SIP INVITE request in the case of a Pre-established Session establishment;
- 3. SHALL set the Nick Name in the Authenticated Originator's PoC Address to either

  a) the one defined for the PoC User in the PoC Server, if configured; otherwise the one in the incoming SIP 200 "OK" response if received, in the case of an On-Demand Session establishment; or

  b) the one defined for the PoC User in the PoC Server, if configured; otherwise the one stored from the Authenticated Originator's PoC Address contained in the SIP INVITE request if received during the Pre-established Session establishment for the PoC User in the case of a Pre-established Session;
- 4. SHALL include value 'id' in the Privacy header according to rules and procedures of [RFC3325], if the privacy is requested either through a Privacy header with the value 'id' in the incoming SIP provisional response in the case of an on-demand session establishment, or in the SIP INVITE request received during the Pre-established Session establishment for the PoC User in the case of a Pre-established Session;
- 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 [RFC4028];
- 8. SHOULD include the Allow header with the SIP methods supported in this dialog according to rules and procedures of [RFC3261], 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. MAY check whether the Accept-Contact header including the PoC feature tag '+g.poc.talkburst' is included and if it is not, 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 and include a Warning header as specified in [RFC3261] with the warning code 399 and the warning text set to "106 isfocus not assigned" without continuing the rest of the steps;
- 3. SHALL check the Invited PoC User's PoC Service Settings associated to the PoC Address received in the Request-URI. If the PoC Service Settings have not been received from the PoC Client yet or if PoC Service Settings expiration timer has expired, the PoC Server SHALL respond with a SIP 480 "Temporarily Unavailable" response and do not continue the rest of the steps;
- 4. SHALL check if the Authenticated Originator's PoC Address and the URI of 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-

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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;

- 5. 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;
- 6. SHALL check if either:

  a) the received SIP INVITE request contained a Priv-Answer-Mode header with the value set to “Auto”in case manual answer override functionality is supported; or

  b) 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, which is stored in the PoC XDMS as described in [PoC-XDM Specification], and the Answer Mode setting in the PoC Service Settings of the Invited PoC User is set to Automatic Answer, and the received SIP INVITE request did not contain an Answer-Mode header with the value set to “Manual;require”;

  and if the PoC Server does not have already a PoC Session with the PoC Client then 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 Using On-demand Session*" depending on whether the Invited PoC User has or has not, respectively, an ongoing Pre-established Session. 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

The PoC Server SHALL act as B2BUA.

NOTE 1: 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 the received SIP INVITE request contained a Priv-Answer-Mode header with the value set to "Auto", authorize according to local policy the Authenticated Originator's PoC Address to override the Invited PoC User’s Answer Mode setting, and if authorized include a Priv-Answer-Mode header with the value "Auto", and if not authorized or if manual answer override functionality is not supported reject the request with a 403 “Forbidden” response;
- 3. SHALL, if the received SIP INVITE request did not contain a Priv-Answer-Mode header, include an Answer-Mode header with the value set to "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;

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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 and Talk Burst Parameters selected by the PoC Server from those contained in the SDP offer in the incoming SIP INVITE request; and,

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

- 5. SHALL include the Referred-By header from the incoming SIP request if anonymity is not 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 which SHALL be from the list contained in the original SDP offer and MAY be reduced based on the SDP answer received in SIP 200 "OK" response from the Invited PoC Client(s);

NOTE 2: If transcoding is supported and codec(s) and Media Parameters other than those contained in the SDP offer in the received SIP INVITE request from originating network have been offered in the SDP of the SIP INVITE request sent to Invited PoC Client(s), the SDP answer in the SIP 200 "OK" response towards originating network may be different from the SDP answer received in SIP 200 "OK" response from the Invited PoC Client(s).

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 and Talk Burst parameters contained in the SDP answer from the Invited PoC Client(s); and,

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

- 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.

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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

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*”; 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 include value “id” in the Privacy header according to rules and procedures of [RFC3325], if the invited PoC Client has requested privacy, when the Pre-established Session was established;
- 5. SHALL send the SIP 200 "OK" Response to the SIP INVITE request according to rules and procedures of SIP/IP Core; and,
- 6. 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

NOTE 1: The procedure of manual answer using a Pre-established Session is not supported in this version of the PoC Enabler.

The PoC Server:

- 1. 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*";
- 2. SHALL, if the PoC Server stays on the media path, the PoC Server

  a) SHALL generate a SIP INVITE request as specified in subclause 7.3.2.1 "*General*".

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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 and Talk Burst parameters selected by the PoC Server from those contained in the SDP offer in the incoming SIP INVITE request; and,

v. The PoC Server's port number for the Talk Burst Control Protocol.

c) SHALL continue, for the duration of the SIP Session, acting as a B2BUAaccording to rules and procedures of [RFC3261].

- 3. 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.
- 4. SHALL include the Anser-Mode header set to "Manual;require";
- 5. SHALL include the Referred-By header from the incoming SIP request if anonymity is not 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 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) SHALL, if the PoC Service Settings for the Simultaneous PoC Sessions Support is set to "SSS active", check if the number of maximum Simultaneous PoC Sessions for the PoC Client as specified in subclause 5.7a "*PoC Session association*" has exceeded. If exceeded, the PoC Server

  i. SHALL respond with a SIP 486 "Busy Here" response with the warning header "104 Too many Simultaneous PoC Sessions" towards the inviting PoC Client;.

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ii. SHALL interact with User Plane as specified in [OMA-PoC-UP] " *Participating PoC Function procedures at PoC Session release* ";

iii. SHALL generate a SIP BYE request according to rules and procedures of [RFC3261]; and,

iv. SHALL send the SIP BYE request towards the invited PoC Client according to rules and procedures of the SIP/IP Core;

Otherwise, continue with the rest of the steps;

d) generate a SIP 200 "OK" response as specified in the subclause 7.3.2.1 "*General*"; and,

e) 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 which SHALL be from the list contained in the original SDP offer and MAY be reduced based on the SDP answer received in SIP 200 “OK” response from the Invited PoC Client(s);

NOTE 2: If transcoding is supported and codec(s) and Media Parameters other than those contained in the SDP offer in the received SIP INVITE request from originating network have been offered in the SDP of the SIP INVITE request sent to Invited PoC Client(s), the SDP answer in the SIP 200 “OK” response towards originating network may be different from the SDP answer received in SIP 200 “OK” response from the Invited PoC Client(s).

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 and Talk Burst parameters contained in the SDP answer from the Invited PoC Client(s) ; and,

v. The PoC Server’s port number to be used for the Talk Burst Control Protocol.

f) 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 on-going PoC Session the PoC Server:

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- 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 Client 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 on-going 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.

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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 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,
- 3. 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"*;

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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 reject the SIP MESSAGE request with a SIP 403 "Forbidden" response if Group Advertisement is not supported by the PoC Server. Otherwise continue with the rest of the steps;
- 2. 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;
- 3. SHALL forward the SIP MESSAGE request towards the PoC Client according to rules and procedures of the SIP/IP Core; and,
- 4. 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 perform actions to verify the Authenticated Originator's PoC Address of the PoC User and authorize the request according to local policy, and if not authorized the PoC Server 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

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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.

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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 [RFC4234].

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	ERELD	[OMA PoC ERELD]	M	ERELD:MCF

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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 IMS	6.1.1.2	O	
PoCCPSpec-COP-C-004	Deregister with options	6.1.1.2	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-018	Includes a Nick Name in the Authenticated Originator's PoC Address.	6.1.3.1, 5.4	O	
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 Group Session and 1-1 PoC Session initiation (receiving SIP REFER request)	6.1.3.2.2	O	PoCCPSpec-CSI-C-003 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	

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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 capabilities during an ongoing PoC Session	6.1.4.4	O	
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	

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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-016	Includes a Nick Name in the SIP 200 “OK” response to the initial SIP INVITE request.	6.2.1.1, 5.4	O	
PoCCPSpec-CTP-C-002	PoC Client invited to a PoC	6.2.1.2	M	PoCCPSpec-CTP-C-003

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	Session: Automatic Answer Mode OR Manual Answer Mode	6.2.1.3		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	6.2.1.2	O	
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 (receiving SIP CANCEL)	6.2.6.1	M	
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.1.10 Presence procedures

Item	Function	Reference	Status	Requirement
PoCCPSpec-CPR-C-001	Presence procedures	C.3	O	PoCCPSpec-CPR-C-002 AND PoCCPSpec-CPR-C-003
PoCCPSpec-CPR-C-002	The PoC Client collaborates with the presence source and watcher entities when residing in the same UE.	C.3	O	PoCCPSpec-CPR-C-001
PoCCPSpec-CPR-C-003	Only when the PoC Server is not enabled to publish presence information on	C.3	O	PoCCPSpec-CPR-C-001

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	behalf of the PoC User, then the Presence Source residing in the same UE as the PoC Client publishes the presence information for the elements specified in subclause C.1 "Availability for PoC-Session Service".			

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	ERELD	[OMA PoC ERELD]	M	ERELD: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		O	PoCCPSpec-PTR-S-006

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	Mode			
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-012
PoCCPSpec-CBF-S-011	Allows the PoC User to configure Nick Name in the PoC User's Home PoC Network	7.3.1.1, 7.3.2.1	O	

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 unknown, send SIP 404	7.1.1	M	
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	7.1.3 7.4.1.1 7.4.1.2	M	

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	Personal Alert)			
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 PoC Function	7.5.2	M	

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	7.3.1.2	O	PoCCPSpec-PIR-S-005 AND

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	where feature is supported			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 containing URIs not owned by this Poc Server	7.3.1.7	M	
PoCCPSpec-PIR-S-012	SIP REFER request containing URIs not owned by this PoC Server	7.3.1.8	M	PoCCPSpec-PIR-S-014
PoCCPSpec-PIR-S-013	Void			
PoCCPSpec-PIR-S-014	Responding to SIP REFERrequests 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

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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	
PoCCPSpec-PIR-S-025	Includes the Nick Name in the Authenticated Originator's PoC Address	7.3.1.1, 7.3.2.1	O	

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	M	PoCCPSpec-PTR-S-013 OR PoCCPSpec-PTR-S-014
PoCCPSpec-PTR-S-013	Group Advertisement request reject when not supported by the server	7.3.2.7	O	
PoCCPSpec-PTR-S-014	Group Advertisement request procedure when feature is supported	7.3.2.7	O	

A.2.8.3 Acting as a Presences source

Item	Function	Reference	Status	Requirement
PoCCPSpec-PPS-S-001	Acting as a presence source	C.2.1	O	PoCCPSpec-PPS-S-002 AND PoCCPSpec-PPS-S-004 AND PoCCPSpec-PPS-S-005
PoCCPSpec-PPS-S-002	Acting as a presence source for PoC Registration and de-registration	C.2.1.1	O	PoCCPSpec-PPS-S-001
PoCCPSpec-PPS-S-003	Sets the "PoC-Session	C.2.1.1	O	PoCCPSpec-PPS-S-002

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	participation" presence information element to the value of "closed" (as defined in subclause C.1.5 "PoC Session participation") at registration and de-registration.			
PoCCPSpec-PPS-S-004	Acting as a presence source for Incoming Session Barring (ISB)	C.2.1.2	O	PoCCPSpec-PPS-S-001
PoCCPSpec-PPS-S-005	Acting as a presence source for Incoming Instant Personal Alert Barring (IAB)	C.2.1.3	O	PoCCPSpec-PPS-S-001

A.2.9 PoC Server performing the Controling 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	O	
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	O	
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 local policy	7.2.1.7	O	

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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 request with Confirmed Indication	7.2.2.2	M	
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	O	
PoCCPSpec-CIR- S-006	Cancel of PoC Session invitation request	7.2.2.3	M	

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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	

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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 continuous 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 PoC Sessions: Maximum number of Simultaneous PoC Sessions supported for this PoC Client. The value 0 is used to indicate that Simultaneous PoC Sessions are not supported.
- 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. Conference-URI Template: A template used by the XDM Client to propose a Conference URI when creating a PoC Group document.
- 12. T10 (Talk Burst Release) timer: This parameter indicates the value of the T10 (Talk Burst Release) timer in milliseconds
- 13. T11 (Talk Burst Request) timer: This parameter indicates the value of the T11 (Talk Burst Request)timer in milliseconds
- 14. T13 (End of RTP Media) timer: This parameter indicates the value of the T13 (End of RTP Media) timer in milliseconds
- 15. PoC Server Presence support: This parameter indicates the Presence publish capability of the PoC Server, the PoC status on behalf of a PoC Client.

NOTE: The parameters 12 - 14 are parameters needed for OMA PoC UP procedures.

The parameters from 6 - 15 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, 12, 13 and 15 and the PoC Client SHOULD have the parameters 3, 10 and 14 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 Application Characteristics file

OMA PoC has defined a client provisioning file called Application characteristics (AC) file based on [OMA ClientProvisioning]. It MAY be used for initial provisioning of PoC service configuration to the User Equipment.

The file is specified in [OMA-PoC-AC].

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B.3 OMA PoC Device Management Management Object (MO) file

This subclause defines the mobile device Management Object (MO) for OMA PoC. The MO MAY be used for intitial provisioning of parameters when the DM Profile is to be used (as specified on [OMA-DM-v1-2]), and the MO SHOULD be used for later provisioning of parameters according to [OMA-DM-v1-1-2] or [OMA-DM-v1-2], if required by the service provider to update service configurations.

The OMA PoC Management Object consists of relevant parameters required by theOMA PoC Enabler]. It is compatible with OMA Device Management protocol specifications[OMA-DM-v1-1-2], 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.3.1 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:

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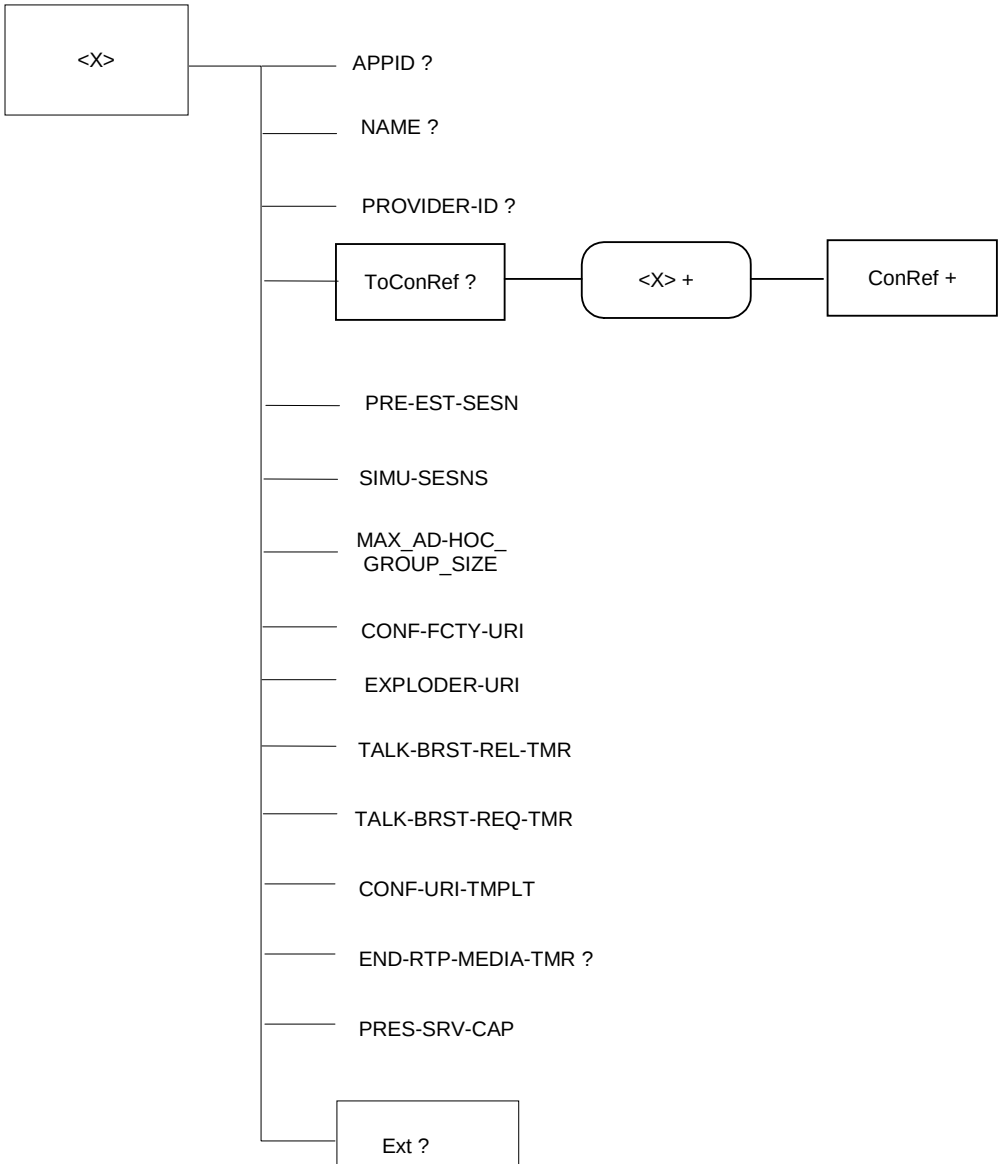

Figure 1: The OMA PoC Management Object

B.3.2 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

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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>

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

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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 parameter defines the maximum number of Simultaneous PoC Sessions allowed for the PoC Client. The value is defined by each service provider.

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

  0 – Indicates that the home operator's network has NO support for Simultaneous PoC Sessions.
  > 0 – Indicates the maximum number of Simultaneous PoC Sessions supported for the PoC Client.

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>

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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 T10 (Talk Burst Release) timer 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 T11 (Talk Burst Request) timer 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 T13 (End of RTP Media) timer in milliseconds

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

16. /<X>/CONF-URI-TMPLT/

The Conference URI Template specifies the syntax of the conference URI. The Conference URI Template SHALL be a URI Template as specified in [XDM Specification] subclause C.1.

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

17. /<X>/PRES-SRV-CAP/

A binary flag used for PoC Server to indicate the Presence publish capability of the PoC Server, the PoC status on behalf of a PoC Client. The flag must be given in sequence order according to the list of parameters below:

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bit1: “Application-specific (PoC) Availability for sessions”

bit2: “Application-specific (PoC) Availability for alerts”

bit3: “Session Participation”

bit 4-8 for future extension.

- Occurrence: One
- Format: bin
- Access Types: Get
- Values: <A binary, b1b2b3xxxxx>
  bit 1-3 have 2 values:
  0 means no support by the PoC Server and
  1 means the support is available.

18. /<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

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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 overview

OMA PoC RD specifies a set of presence 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 element mapping to the respective presence information elements.

Presence element	Presence information elements as specified in [OMA-Pres-Spec]	Description
Willingness for PoC Session Service (see C.1.3)	"Application-specific Willingness for PoC-session"	Indicates whether the PoC User is currently willing to accept new incoming PoC Sessions (Yes/No)
Willingness for PoC Alert Service (see C.1.4)	"Application-specific Willingness for PoC-alert"	Indicates whether the PoC User is currently willing to accept incoming Instant Personal Alerts (Yes/No)
Availability for PoC Session Service (see C.1.1) (Able to accept new incoming PoC Session)	"Application-specific Availability for PoC-session"	Indicates whether the PoC User is able to accept a new incoming PoC Session (True/False)
Availability for PoC Alert Service (see C.1.2) (Able to accept incoming Instant Personal Alerts)	"Application-specific Availability for PoC-alert"	Indicates whether the PoC User is able to accept incoming Instant Personal Alerts (True/False)
PoC Session Participation (see C.1.5) (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 "Availability for PoC Session Service" SHALL be mapped to the "Application-specific Availability" presence information element as specified in [OMA-Pres-Spec] pertaining to the "PoC-session" service:

<tuple> →<status>→<basic>→open/closed

→<service-description>→<service-id>→org.openmobilealliance:PoC-session

→<version>→1.0

→<registration-state>→active/terminated

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→<barring-state>→active/terminated

The “Availability for PoC Session Service” presence information element SHALL be mapped to:

- a mandatory <status> element with <basic> subelement with the value “open”; and
- an optional <registration-state> element with the value “active”; and
- an optional <barring-state> element with the value “terminated”

if the presentity is available for incoming PoC Sessions. This happens when

- the PoC User is registered or the valid PoC Service Settings are published or both; and,
- ISB is not activated; and;
- the maximum number of Simultaneous PoC Sessions is not reached.

The “Availability for PoC Session Service” presence information element SHALL be mapped to a mandatory <status> element with a <basic> subelement with the value “closed” and

- an optional <registration-state> element with the value “terminated”; or
- an optional <barring-state> element with the value “active”; or
- an optional <registration-state> element with the value “active” and an optional <barring-state> element with the value “terminated”.

if the presentity is unavailable for incoming PoC Sessions. This happens when:

- the PoC User is not registered or the valid PoC Service Settings are not published or both; or;
- ISB is activated; or;
- the maximum number of Simultaneous PoC Sessions is reached.

C.1.2 Availability for PoC Alert Service

The “Availability for PoC Alert Service” SHALL be mapped to the “Application-specific Availability” presence information element as specified in [OMA-Pres-Spec] pertaining to a “PoC-alert” service:

<tuple> →<status>→<basic>→open/closed

→<service-description> →<service-id>→org.openmobilealliance:PoC-alert

→<version>→1.0

→<registration-state>active/terminated

→<barring-state>→active/terminated

The “Availability for PoC Alert Service” presence information element element SHALL be mapped to:

- a mandatory <status> element with a <basic> subelement with the value “open”; and
- an optional <registration-state> element with the value “active”; and
- an optional <barring-state> element with the value “terminated”

if the presentity is available for incoming PoC Instant Personal Alerts. This happens

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- when the PoC User is registered or the valid PoC Service Settings are published or both; and;
- Instant Personal Alerts Barring (IAB) is not activated.

The “Availability for PoC Alert Service” presence information element SHALL be mapped to a mandatory <status> element with a <basic> subelement with the value “closed” and

- an optional <registration-state> element with the value “terminated”; or
- an optional <barring-state> element with the value “active”

if the presentity is unavailable for incoming PoC Instant Personal Alerts. This happens

- when the PoC User is not registered or the valid PoC Service Settings are not published or both; or;
- Instant Personal Alerts Barring (IAB) is activated.

C.1.3 Willingness for PoC Session Service

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

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

→<service-description>→<service-id>→org.openmobilealliance:PoC-session

→<version>→1.0

The “Willingness for PoC Session Service” presence information element SHALL be mapped to a <willingness> element with a <basic> subelement with the value “open” if the presentity is willing to accept incoming PoC Session requests. This presence information element MAY be expressed by the Presence Source residing in the same UE as the PoC Client publishing the willingness (see C.3).

The “Willingness for PoC Session Service” presence information element SHALL be mapped to a <willingness> element with a <basic> subelement with the value “closed” if the presentity is not willing to accept incoming PoC Session requests. This presence information element MAY be expressed by the Presence Source residing in the same UE as the PoC Client publishing the unwillingness (see C.3).

C.1.4 Willingness for PoC Alerts Service

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

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

→<service-description>→<service-id>→org.openmobilealliance:PoC-alert

→<version>→1.0

The “Willingness for PoC Alert Service” presence information element SHALL be mapped to a <willingness> element with a <basic> sub-element with the value “open” if the presentity is willing to accept incoming Instant Personal Alerts requests. This presence information element MAY be expressed by the Presence Source residing in the same UE as the PoC Client publishing the willingness (see C.3).

The “Willingness for PoC Alert Service” presence information element SHALL be mapped to a <willingness> element with a <basic> subelement with the value “closed” if the presentity is not willing to accept incoming Instant Personal Alerts. This presence information element MAY be expressed by the Presence Source residing in the same UE as the PoC Client publishing the unwillingness (see C.3).

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C.1.5 PoC Session Participation

The “PoC Session Participation” SHALL be mapped to the “Session Participation” presence information element as specified in [OMA-Pres-Spec] pertaining to a “PoC Session” service:

<tuple > →<session-participation>→<basic>→open/closed

→<service-description>→<service-id>→org.openmobilealliance:PoC-session

→<version>→1.0

The “PoC Session Participation” presence information element SHALL be mapped to a <session-participation> element with a <basic> sub-element with the value “open” if the presentity is participating in at least one PoC Session.

The “PoC 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 the mapping between PoC procedures and the presence information elements as given in subclause C.1.

If the PoC Server performing the Participating PoC Function in the PoC User’s Home PoC Network supports publishing Presence Information on behalf of the PoC Client, the PoC Server SHALL publish the presence information elements indicated in the 'PRES-SRV-CAP' provisioning parameter sent to the PoC Client (see Appendix B).

Table 2 defines the changes of the presence information elements, as specified in [OMA-Pres-Spec], which the PoC Server may publish as a result of the PoC procedures.

PoC procedure	Presence information elements as specified in [OMA-Pres-Spec]	Presence information element value
General Procedures		
Registration	“Application-specific Availability for PoC-session”	- basic: open (mandatory) - registration-state: active (optional) - barring-state: terminated (optional)
	“Application-specific Availability for PoC-alert”	- basic: open (mandatory) - registration-state: active (optional) - barring-state: terminated (optional)
De-registration or the PoC Service Setting expiration or removal procedures	“Application-specific Availability for PoC-session”	- basic: closed (mandatory) - registration-state: terminated (optional) - barring-state: terminated (optional)

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	"Application-specific Availability for PoC-alert"	- basic: closed (mandatory) - registration-state: terminated (optional) - barring-state: terminated (optional)
IAB activated	"Application-specific Availability for PoC-alert"	- basic: closed (mandatory) - registration-state: active (optional) - barring-state: active (optional)
IAB de-activated	"Application-specific Availability for PoC-alert"	- basic: open (mandatory) - registration-state: active (optional) - barring-state: terminated (optional)
ISB de-activated	"Application-specific Availability for PoC-session"	- basic: open (mandatory) - barring-state: terminated (optional)
ISB activated	"Application-specific Availability for PoC-session"	- basic: closed (mandatory) - barring-state: active (optional)

Table 2: Definition of changes of presence attributes depending on PoC procedure

C.2.1 Acting as a 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 Client.

The PoC Server MAY refresh the published presence information as defined in [OMA-Pres-Spec] until the PoC Server becomes aware of PoC client de-registration state or until the PoC Service Setting expiration or removal.

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

All the following procedures SHALL apply when the PoC Server acts as a Presence Source and supports the publication of presence information elements as specified in Table 2.

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

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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 either:

- act as a Presence Source and perform the publication of presence information as defined in [OMA-Pres-Spec] "*Publication of presence information*"; or
- ignore the event and wait for the PoC User to publish the PoC Service Settings before acting as a Presence Source.

When acting as a Presence Source upon the receipt of the registration request the PoC Server:

- SHALL set the value of "Availability for PoC Session Service" presence information element to available (as defined in subclause C.1.1 "*Availability for PoC Session Service*") and Table 2;
- SHALL set the value of "Availability for PoC Alert Service" presence information element to available (as defined in subclause C.1.2 "*Availability for PoC Alert Service*" and Table 2);
- SHALL 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); and,
- MAY set the "PoC Session participation" presence information element to closed (as defined in subclause C.1.5 "*PoC Session participation*" and Table 2).

NOTE 1: 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 6.1.1.2 "*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 set the value of the "Availability for PoC Session Service" presence information element to unavailable (as defined in subclause C.1.1 "*Availability for PoC Session Service*" and Table 2)
- SHALL set the "Availability for PoC Alert Service" presence information element to unavailable (as defined in subclause C.1.2 "*Availability for PoC Alert Service*" and Table 2);
- SHALL 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)); and,
- MAY set the "PoC Session participation" presence information element to closed (as defined in subclause C.1.5 *"PoC Session Participation"* and Table 2)

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 set the value of "Availability for PoC Session Service" presence information element to unavailable (as specified in C.1.1 "*Availability for PoC Session Service*" and Table 2);
- SHALL 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);

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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 set the value of "Availability for PoC Session Service" presence information element to available (as specified in C.1.1 "*Availability for PoC Session Service*" and Table 2);
- SHALL 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 set the value of "Availability for PoC Alert Service" presence information element to unavailable (as specified in C.1.2 "*Availability for PoC Alert Service*" and Table 2);
- SHALL 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 set the value of "Availability for PoC Alert Service" presence information element to available (as specified in C.1.2 "*Availability for PoC Alert Service*" and Table 2); and,
- SHALL 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.2.1.4 Void

C.2.1.5 PoC Service Settings expiration or removal procedure

Upon receiving the PoC Service Settings of a PoC User as specified in the subclause 7.3.1.14 "*PoC Service Setting procedure*" with the expiration value equal to 0 or when PoC Service Settings expires, the PoC Server MAY act as a Presence Source for the PoC User identified in the Authenticated Originator's PoC Address.

If the PoC Server acts as the Presence Source for the PoC User, the PoC Server:

- SHALL set the value of the "Availability for PoC Session Service" presence information element to unavailable (as defined in subclause C.1.1 "*Availability for PoC Session Service*" and Table 3)
- SHALL set the "Availability for PoC Alert Service" presence information element to unavailable (as defined in subclause C.1.2 "*Availability for PoC Alert Service*" and Table 3);
- SHALL 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 (e.g. to the value of the P-Asserted-Identity header field of the SIP PUBLISH request)); and,

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- MAY set the "PoC Session participation" presence information element to closed (as defined in subclause C.1.5 *"PoC Session Participation"* and Table 3)

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

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.

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.

The Presence Source residing in the same UE with the PoC Client, MAY publish the presence information for the elements specified in subclauses C.1.3 "*Willingness for PoC Session Service*" and C.1.4 "*Willingness for PoC Alert Service*", and additionally any other presence information element described in [OMA-Pres-Spec].

The Presence Source residing in the same UE as the PoC Client SHOULD publish the presence information elements according to setting of the provisioning parameter 'PRES-SRV-CAP' as specified in subclause B.3.2 "*Management Object parameters*".

The exact procedures determining the collaboration between the PoC Client, the watcher and the Presence Source in the UE are beyond the scope of the present specification.

C.4 PoC specific presence values

The OMNA SHALL register the following new values for the <service-description> presence information element defined in [OMA-Pres-Spec] related to PoC:

<service-id>: org.openmobilealliance:PoC-session, org.openmobilealliance:PoC-alert

<version>: 1.0

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Appendix D. Initial Filter Criteria (Informative)

D.1 General

The 3GPP/3GPP2 IMS 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/3GPP2 IMS 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

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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.talkburst"

THEN: ROUTE request to the specified PoC Server Terminating Port Address

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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 document 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:xml:poc:group-advertisement

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 1: In PoC service only one <group> element is sent in a Group Advertisement.

NOTE 2: In PoC service dialed-in type corresponds the Chat PoC Group and dialed-out corresponds the Pre-arranged 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:xml:poc:group-advertisement"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:schemaLocation="urn:oma:xml: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>
```

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E.1.1.3 XML schema for Group Advertisement

The Group Advertisement directory document SHALL conform to the XML schema described in [POC_GROUPAD].

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 Pre-arranged PoC Group.

other place holder for future extensions.

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.

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Related standards or documents: OMA-CP-PoC-V1_0.

Security Considerations: Security considerations for this media feature tag are discussed in Section 11.1of [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.

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,

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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

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	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

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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:

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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

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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 Service Settings event

PoC Client A registers with SIP/IP Core A. PoC Client A publishes it's current PoC Service Settings to PoC Server A. This flow is as shown in Figure 2 *" PoC Client A SIP registers with the SIP/IP CoreA, and PoC Client A publishes PoC Service Settings".*

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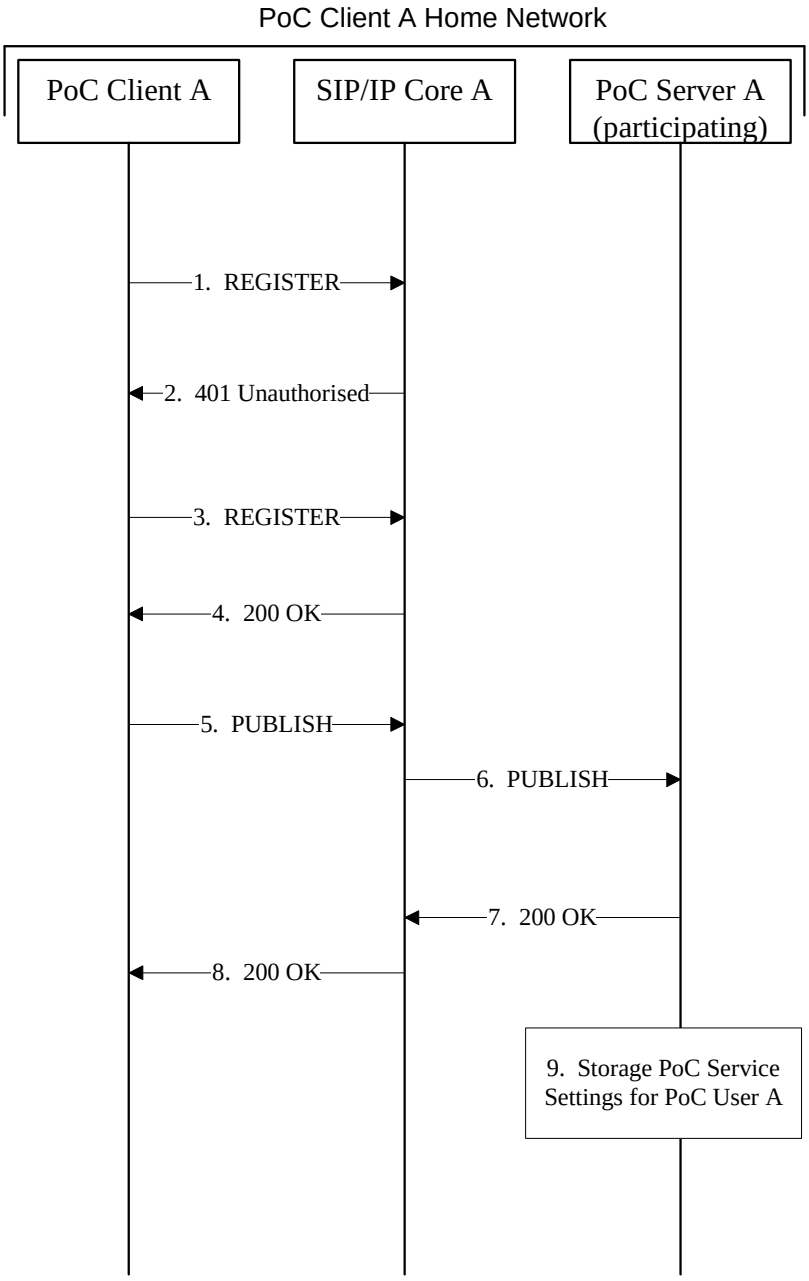

Figure 2: PoC Client A SIP registers with the SIP/IP Core A and PoC Client A publishes PoC Service Settings

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 PoC 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

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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"
Contact:	<sip:PoC-ClientA@networkA.net>; +g.poc.talkburst; +g.poc.groupad

2. **SIP 401 "Unauthorized" response (from SIP/IP Core A 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 PoC 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 Service 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 Service 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 Service Settings.

Request-URI	sip:PoC-ClientA@networkA.net

SIP HEADERS

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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

Expires: 360000

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">
<entity id="do39s8zksn2d98x">
    <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>
  <sss-settings>
   <simultaneous-sessions-support active="true"/>
   </sss-settings>
 </entity>
   </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.

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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

Expires: 360000

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">
<entity id="do39s8zksn2d98x">
    <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>
  <sss-settings>
   <simultaneous-sessions-support active="true"/>
   </sss-settings>
 </entity>
   </poc-settings>
```

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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

   Server: PoC-serv/OMA1.0

8. **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 the PoC Client A.

   SIP HEADERS

   Server: PoC-serv/OMA1.0

9. **PoC Server A stores the PoC Service Settings for PoC User A**

   PoC Server A stores the PoC Service 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 A. This flow is shown as in Figure 3 *"PoC Client A initiates a Pre-established Session"*.

Error! Objects cannot be created from editing field codes.

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: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

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Contact:	<sip:PoC-ClientA.networkA.net>;+g.poc.talkburst
Supported:	Timer
Session-Expires:	1800;refresher=uac
Allow:	INVITE,ACK,CANCEL,BYE,REFER, SUBSCRIBE,NOTIFY,

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=	fmtp: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 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:PoCConferenceFactoryURI.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>;+g.poc.talkburst
Supported:	Timer
Session-Expires:	1800;refresher=uac
Allow:	INVITE,ACK,CANCEL,BYE,REFER, SUBSCRIBE,NOTIFY,

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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=	fmtp: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:PoCConferenceFactoryURI networkA.net>
Server:	PoC-serv/OMA1.0
Contact	<sip:Pre-establishedSessionIdentityA@PoC-ServerA.networkA.net>;+g.poc.talkburst;isfocus
Require:	Timer
Session-Expires:	1800;refresher=uac
Allow:	INVITE,ACK,CANCEL,BYE,PRACK,REFER, SUBSCRIBE, NOTIFY,
Supported:	norefersub

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

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a=	fmtp: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 PoC Session Identity.

SIP HEADERS

P-Asserted-Identity:	<sip:PoCConferenceFactoryURI networkA.net>
Server:	PoC-serv/OMA1.0
Contact	<sip:Pre-establishedSessionIdentityA@PoC-ServerA.networkA.net>;+g.poc.talkburst;isfocus
Require:	Timer
Session-Expires:	1800;refresher=uac
Allow:	INVITE,ACK,CANCEL,BYE,PRACK,REFER,
Supported:	norefersub

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=	fmtp: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 Figure4 *"PoC Client A invites another user to a Pre-established Session by sending a SIP REFER request to PoC Server A confirmed case"*.

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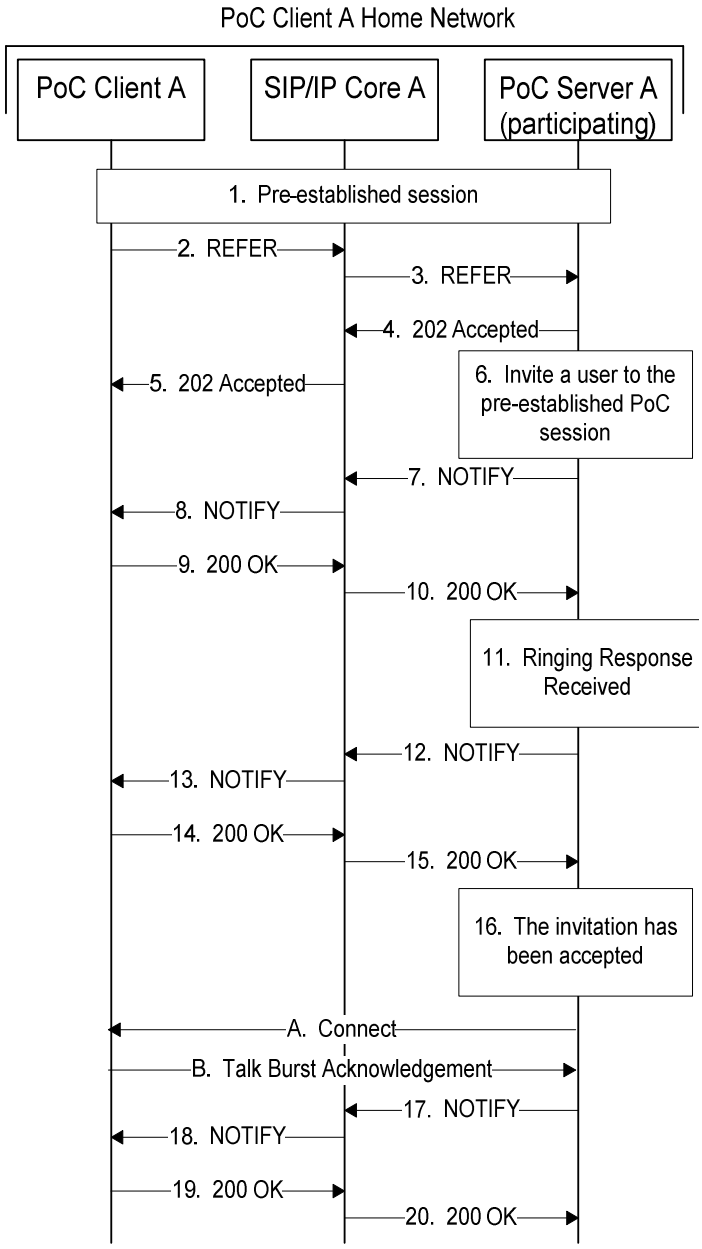

Figure 4: PoC Client A invites another user to a Pre-established Session by sending a SIP REFER request to PoC Server A confirmed case

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 initates a Pre-established Session ".

2. **SIP REFER request (from PoC Client A to SIP/IP Core A)**

   The PoC Client A invites the PoC Client B to the Pre-established Session.

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Request-URI	sip:Pre-establishedSessionIdentityA@PoC-ServerA.networkA.net
SIP HEADERS	
Refer-To:	<sip:PoC-UserB@networkB.net>
Privacy	Id

NOTE: 1- The For a 1 PoC Session SIP REFER request does not contain a body.

3. **SIP REFER request (from SIP/IP Core A to PoC Server A)**

The SIP/IP Core A 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

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>
Privacy	Id
Accept-Contact:	*;+g.poc.talkburst; require;explicit

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User-Agent:	PoC-serv/OMA1.0
Referred-By:	"PoC User A" <sip:PoC-UserA@networkA.net>
Contact:	<sip: SessionABCDEF@ PoC-ServerA .networkA.net;session1-1>;+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=	fmtp: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>

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8. 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/2.0 100 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

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MIME BODY

SIP/2.0 180 Ringing

To:	<sip:PoC-UserB@networkB.net>
P-Asserted-Identity:	"PoC User B" <sip:PoC-UserB@networkB.net>
Contact:	<sip:PoC-ServerB.networkB.net>;+g.poc.talkburst

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>
P-Asserted-Identity:	"PoC User B" <sip:PoC-UserB@networkB.net>
Contact:	<sip:PoC-ServerB.networkB.net>;+g.poc.talkburst

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 Core A 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.

A. TBCP Connect message (PoC Server A to PoC Client A)

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In order to inform e.g PoC Session Identity of the established PoC Session the PoC Server A sends the TBCP Connect message to the PoC Client A.

B TBCP Talk Burst Acknowledgement (PoC Client A to PoC Server A)

The PoC Client A acknowledges the reception of the TBCP Connect message.

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-Asserted-Identity:	"PoC User B" <sip:PoC-UserB@networkB.net>
Contact:	<sip:PoC-ServerB.networkB.net>;+g.poc.talkburst

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

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SIP/2.0 200 OK

To: <sip:PoC-UserB@networkB.net>

P-Asserted-Identity: "PoC User B" <sip:PoC-UserB@networkB.net>

Contact: <sip:PoC-ServerB.networkB.net>;+g.poc.talkburst

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 Core A forwards the SIP 200 "OK" response to the PoC Server A.

F.3.2 Terminating flow

NOTE: Manual answer using a Pre-established Session is not supported in this version of the PoC Enabler. Manual answer using an On-demand Session is described in the subclause F.5.1 "*Terminating flow – Manual Answer*".

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 initates a Pre-established Session"*, and the PoC Client A has learned the URI that identifies this Session. This flow is as shown in Figure 5 *"PoC Client A invites another user to a Pre-established Session by sending a SIP REFER request to PoC Server A unconfirmed case"*.

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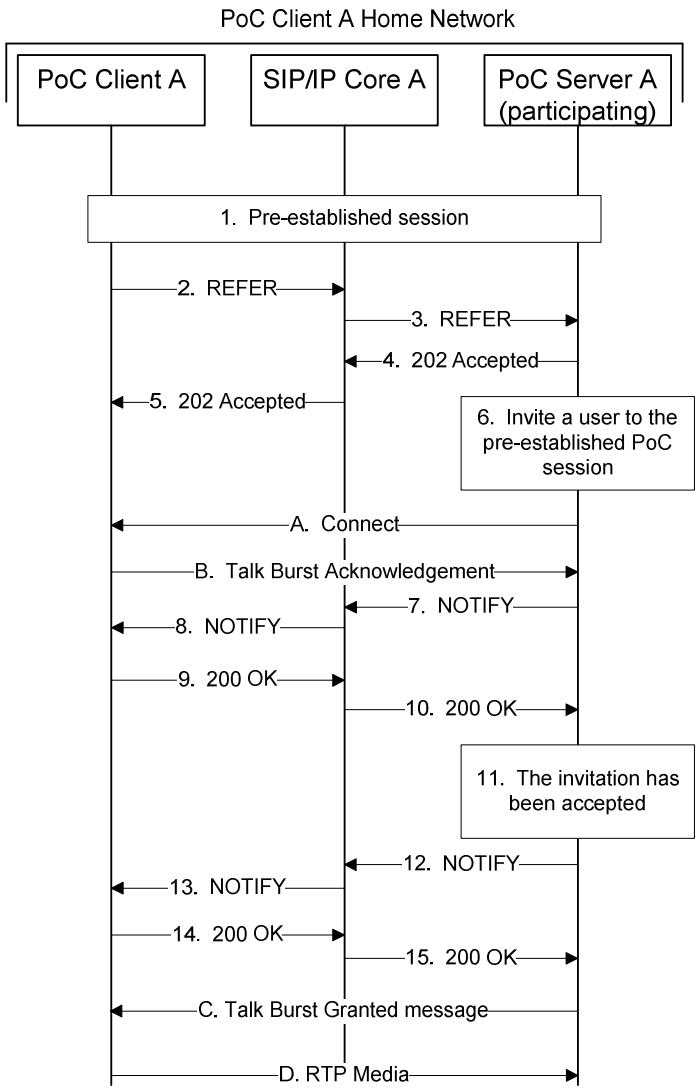

Figure 5: PoC Client A invites another PoC User to a Pre-established Session by sending a SIP REFER request to PoC Server A unconfirmed case

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 initates a Pre-established Session"*.

2. **SIP REFER request (from PoC Client A to SIP/IP Core A)**

   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>

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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 Core A to PoC Server A)

The SIP/IP Core A 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>

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Contact:	<sip: PoC-SessionABCDEF@PoC-ServerA.networkA.net;session=1-1>;+g.poc.talkburst;isfocus
Supported:	100rel,timer
Session-Expires:	1800;refresher=uas
Allow:	INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,
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=	fmtp:TBCP queuing=1; tb_priority=2; timestamp=1

A. TBCP Connect message (PoC Server A to PoC Client A)

In order to inform e.g PoC Session Identity of the established PoC Session the PoC Server A sends the TBCP Connect message to the PoC Client A.

B TBCP Talk Burst Acknowledgement (PoC Client A to PoC Server A)

The PoC Client A acknowledges the reception of the TBCP Connect message.

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

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MIME BODY

SIP/2.0 100 TRYING

To: <sip:PoC-UserB@networkB.net>

8. **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/2.0 100 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

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MIME BODY

SIP/2.0 200 OK

To:	<sip:PoC-UserB@networkB.net>
P-Asserted-Identity	"PoC User B" <sip:PoC-UserB@networkB.net>
Contact:	<sip:PoC-ServerB.networkB.net>;+g.poc.talkburst
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>
Contact:	<sip:PoC-ServerB.networkB.net>;+g.poc.talkburst
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 Core A forwards the SIP 200 "OK" response to the PoC Server A.

C. TBCP Talk Burst Granted message (from PoC Server A to PoC Client A)
The PoC Server X sends a TBCP Talk Burst Granted message to the PoC Server A.

D. RTP Media from PoC Client A to PoC Server A
The PoC Client A sends the RTP Media to the PoC Server A.

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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 initates a Pre-established Session"*.

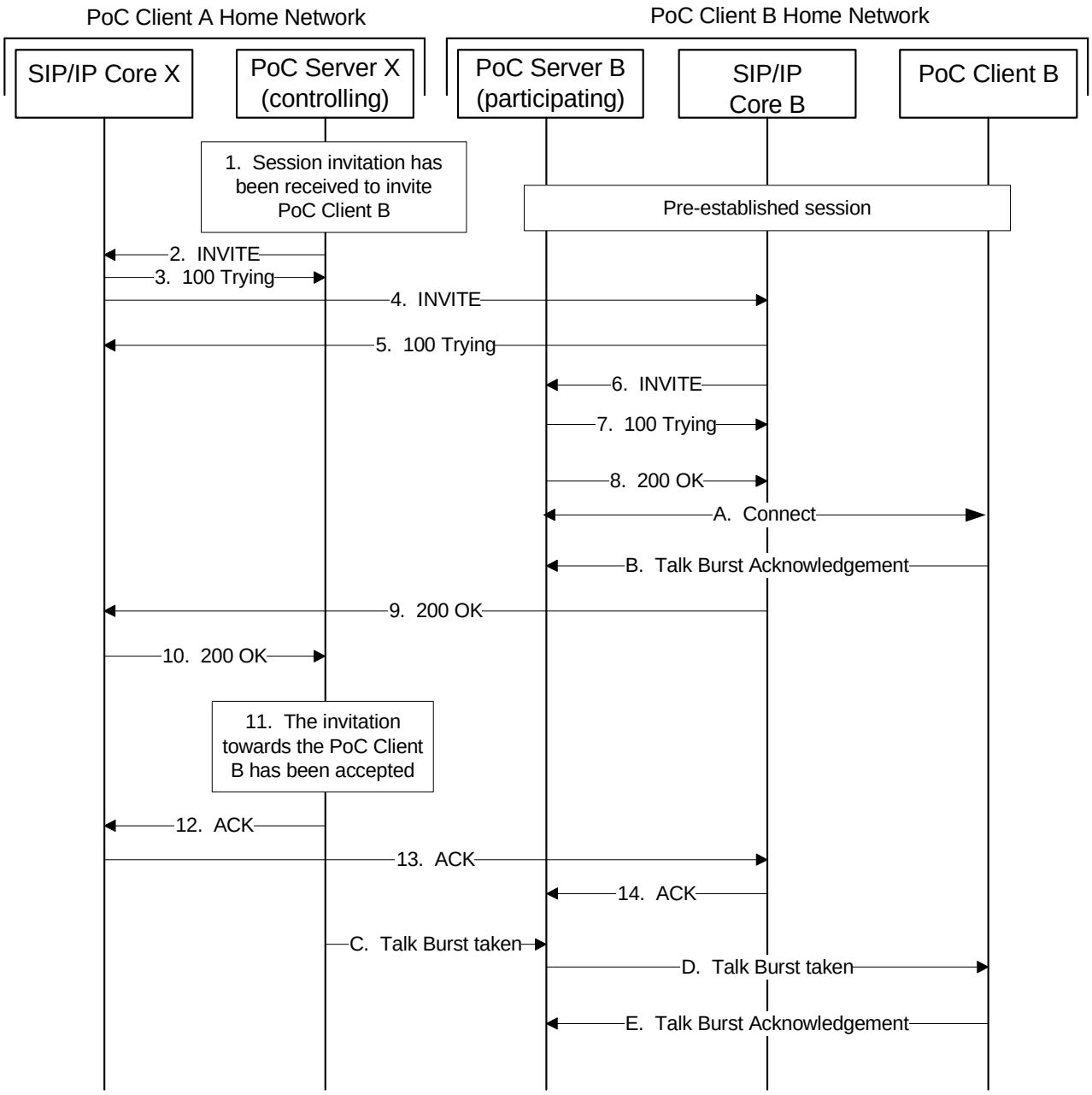

Figure 6: PoC Session invitation with automatic answer – Pre-established Session case.

This flow shows a PoC Server X inviting a PoC User to a PoC Session. The flow is as shown in Figure 6 *" 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 5. *"PoC Client A invites another user to a Pre-established Session by sending a SIP REFER request to PoC Server A unconfirmed case"*. Note that the PoC Server A as

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shown in Figure 5. *"PoC Client A invites another user to a Pre-established Session by sending a SIP REFER request to PoC Server A unconfirmed case "* has changed its role and acts as the PoC Server X in this flow.

The steps of the flows are as follows:

1. **Session Invitation has been received to invite PoC Client B**

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-SessionABCDEF@PoC-ServerX.networkX.net; session=1-1>;+g.poc.talkburst;isfocus
Supported:	100rel,norefersub,timer
Session-Expires:	1800;refresher=uas
Allow:	INVITE,ACK,CANCEL,BYE,PRACK,REFER,
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=	fmtp:TBCP queuing=1; tb_priority=2; timestamp=1

3. **SIP 100 "Trying" response (SIP/IP Core X to PoC Server X)**

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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-SessionABCDEF@PoC-ServerX.networkX.net; session=1-1>;+g.poc.talkburst;isfocus
Supported:	100rel,norefersub,timer
Session-Expires:	1800;refresher=uas
Allow:	INVITE,ACK,CANCEL,BYE,PRACK,REFER,
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=	fmtp: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.

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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-SessionABCDEF@PoC-ServerX.networkX.net; session=1-1>;+g.poc.talkburst; isfocus
Supported:	100rel,norefersub,timer
Session-Expires:	1800;refresher=uas
Allow:	INVITE,ACK,CANCEL,BYE,PRACK,REFER,
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=	fmtp: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.

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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,

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=	fmtp: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,

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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=	fmtp: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,

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=	fmtp: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)

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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 B 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 7 *"Ad-hoc PoC Session establishment on the originating side using on-demand signaling, unconfirmed case"*.

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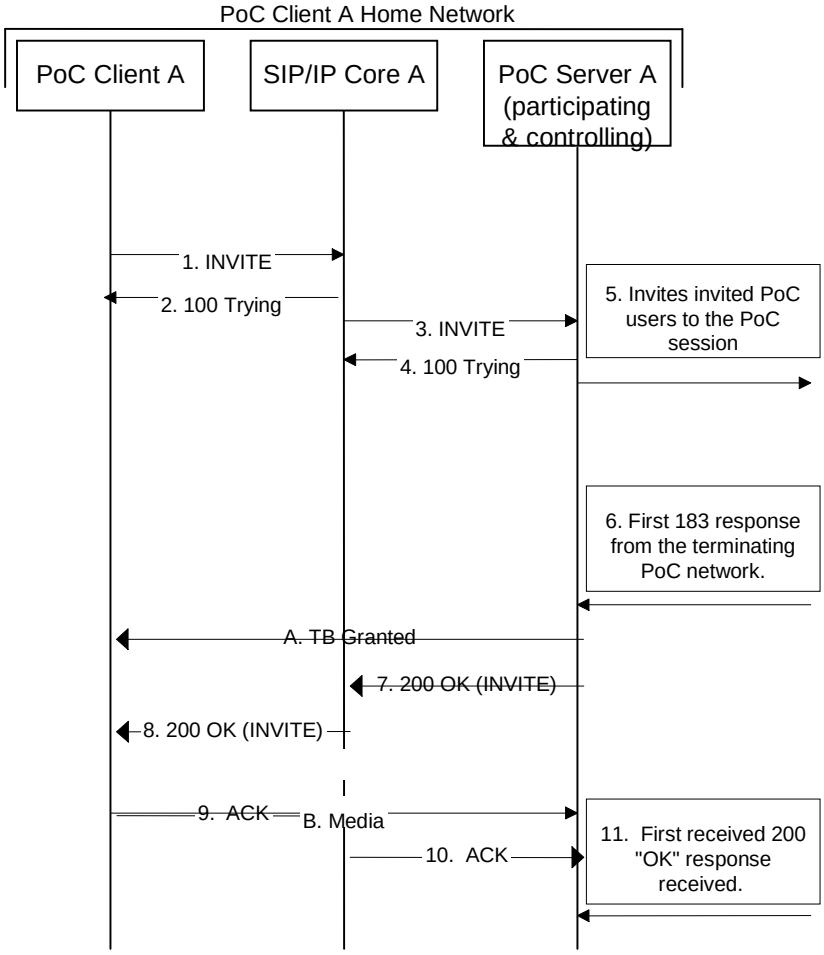

Figure 7: Ad-hoc PoC Session establishment on the originating side using on-demand signaling, unconfirmed case

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

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Contact:	<sip: PoC-ClientA.networkA.net>;+g.poc.talkburst
Supported:	timer
Session-Expires:	1800;refresher=uac
Allow:	INVITE,ACK,CANCEL,BYE,REFER,
Content-Type:	multipart/mixed
Require:	recipient-list-invite
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=	fmtp: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-UserB@networkB.com" />
      <entry uri="sip:PoC-UserC@networkC.com" />
```

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```
    <entry uri="sip:PoC-UserD@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:PoCConferenceFactoryURI.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,
Content-Type:	multipart/mixed
Require:	recipient-list-invite
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

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a= fmtp: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-UserB@networkB.com" />
      <entry uri="sip:PoC-UserC@networkC.com" />
      <entry uri="sip:PoC-UserD@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 6 *"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

Referred-By: "PoC User A" <sip:PoC-UserA@networkA.net>

Privacy: id

Contact: <sip:PoC-SessionABCDEF@PoC-

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	ServerA.networkA.net;session=adhoc>;+g.poc.talkburst;isfocus
Supported:	100rel,timer
Session-Expires:	1800;refresher=uas
Allow:	INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,
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=	fmtp: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 6 *"PoC Session invitation with automatic answer "*.

SIP HEADERS

P-Asserted-Identity:	"PoC User B" <sip:PoC-UserB@networkB.net>
Server:	PoC-serv/OMA1.0
Contact:	<sip:PoC-ServerB@networkBPoC-SessionABCDEF@PoC-ServerB.networkB.net>
P-Answer-State:	Unconfirmed
Allow:	INVITE,ACK,CANCEL,BYE, PRACK, UPDATE, REFER,

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 may occur before SIP ACK request or SIP 200 OK,", because the SIP 200 "OK" response travels through the SIP IP/Core, and the TBCP packet is sent directly from the PoC Server to the PoC Client.

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).

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SIP HEADERS

P-Asserted-Identity:	<sip:PoCConferenceFactoryURI.networkA.net>
Server:	PoC-serv/OMA1.0
Contact	<sip:PoC-SessionABCDEF@PoC-ServerA.networkA.net;session=adhoc>;+g.poc.talkburst; isfocus
Require:	timer
Session-Expires:	1800;refresher=uac
P-Answer-State:	Unconfirmed
Allow:	INVITE,ACK,CANCEL,BYE, PRACK, UPDATE, REFER,
Supported:	norefersub

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=	fmtp: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:	<sip:PoCConferenceFactoryURI.networkA.net >
Server:	PoC-serv/OMA1.0
Contact	<sip:PoC-SessionABCDEF@PoC-ServerA.networkA.net;session=adhoc>;+g.poc.talkburst; isfocus
Require:	timer
Session-Expires:	1800;refresher=uac
P-Answer-State:	Unconfirmed
Allow:	INVITE,ACK,CANCEL,BYE, PRACK, UPDATE, REFER,
Supported:	norefersub

SDP PARAMETERS

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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=	fmtp: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

B. PoC Client sends RTP Media to PoC Server A

The PoC Client A sends RTP Media packets to PoC Server 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 8 *"Ad-hoc PoC Session establishment on the originating side using on-demand signaling, confirmed case manual answer "*.

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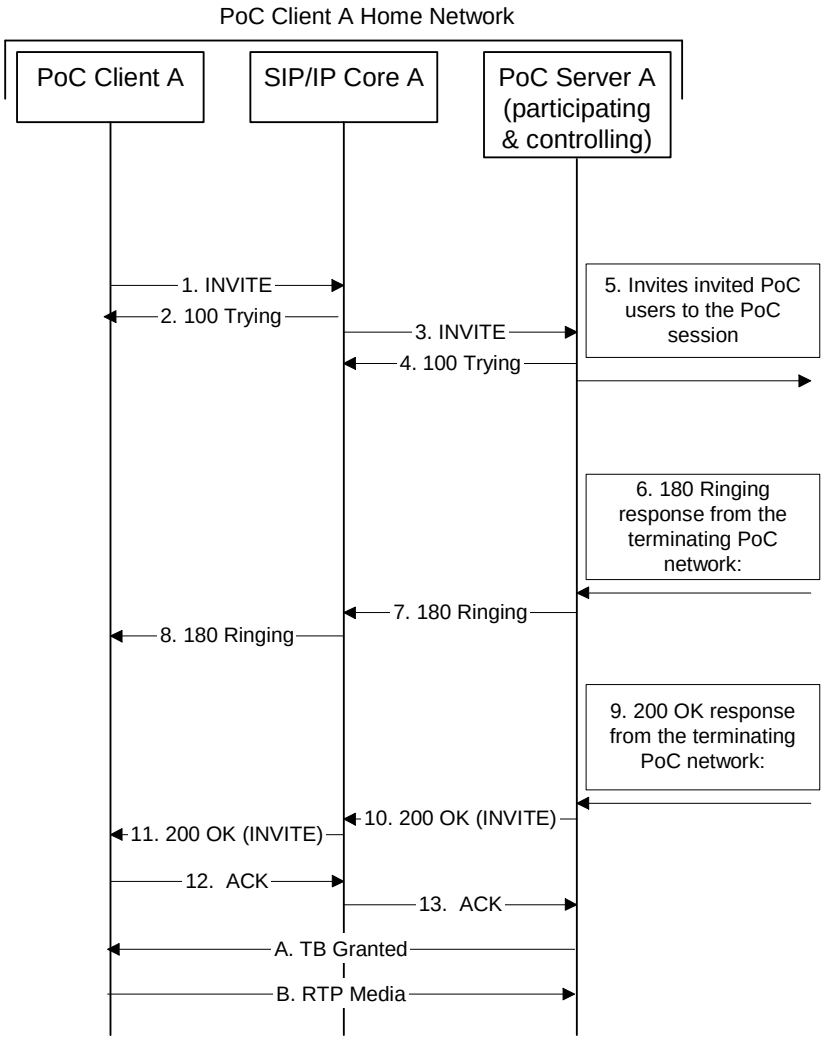

Figure 8: Ad-hoc PoC Session establishment on the originating side using on-demand signaling, confirmed case manual answer

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

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Contact:	<sip:PoC-ClientA.networkA.net>;+g.poc.talkburst
Supported:	Timer
Session-Expires:	1800;refresher=uac
Allow:	INVITE,ACK,CANCEL,BYE,REFER,
Require:	recipient-list-invite
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=	fmtp: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-UserB@networkB.com" />
    </list>
```

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</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:PoCConferenceFactoryURI.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,
Require:	recipient-list-invite
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=	fmtp:TBCP queuing=1; tb_priority=2; timestamp=1
XML MIME BODY	

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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-UserB@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 Client.

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>

Privacy: id

Contact: <sip:PoC-SessionABCDEF@PoC-ServerA.networkA.net;session=1-1>;+g.poc.talkburst;isfocus

Supported: 100rel,timer

Session-Expires: 1800;refresher=uas

Allow: INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,

SDP PARAMETERS

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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=	fmtp:TBCP queuing=1; tb_priority=2; timestamp=1

6. PoC Server A receives SIP 180 "Ringing" response

The PoC Server A receives the SIP 180 "Ringing" response.

SIP HEADERS

P-Asserted-Identity:	"PoC User B" <sip:PoC-UserB@networkB.net>
Privacy:	id
Server:	PoC-serv/OMA1.0
Contact:	<sip:PoC-SessionABCDEF@PoC-ServerB.networkB.net>;+g.poc.talkburst
Allow:	INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,

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:	<sip:PoCConferenceFactoryURI.networkA.net>
Privacy:	id
Server:	PoC-serv/OMA1.0
Contact:	<sip:PoC-SessionABCDEF@PoC-ServerA.networkA.net;session=1-1>;+g.poc.talkburst;isfocus
Allow:	INVITE,ACK,CANCEL,BYE,PRACK,UPDATE, REFER,

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-SessionABCDEF@PoC-ServerA.networkA.net;session=1-

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1>;+g.poc.talkburst;isfocus

Allow: INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,

9. PoC Server A receives SIP 200 "OK" response

The first SIP 200 "OK" response is received from the terminating PoC network

SIP HEADERS

P-Asserted-Identity: "PoC User B" <sip:PoC-UserB@networkB.net>

Privacy: id

Require: timer

Server: PoC-serv/OMA1.0

Session-Expires: 1800;refresher=uac

Contact: <sip:PoC-SessionABCDEF@PoC-ServerB.networkB.net>;+g.poc.talkburst

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= fmtp: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

P-Asserted-Identity: <sip:PoCConferenceFactoryURI.networkA.net>

Privacy: id

Require: timer

Server: PoC-serv/OMA1.0

Session-Expires: 1800;refresher=uac

Contact: <sip:PoC-SessionABCDEF@PoC-ServerA.networkA.net;session=1-1>;+g.poc.talkburst;isfocus

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Allow:	INVITE,ACK,CANCEL,BYE,PRACK,UPDATE, REFER,
Supported:	norefersub

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=	fmtp: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
Server:	PoC-serv/OMA1.0
Session-Expires:	1800;refresher=uac
Contact:	<sip:PoC-SessionABCDEF@PoC-ServerA.networkA.net;session=1-1>;+g.poc.talkburst;isfocus
Allow:	INVITE,ACK,CANCEL,BYE,PRACK,UPDATE, REFER,
Supported:	norefersub

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=	fmtp: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)

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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

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 signaling sequences in this subclause show the establishment of the Ad-hoc or 1-1 PoC Session using on-demand signaling in the terminating side. As a prerequisite for the on-demand signaling, the PoC Client needs to be registered.

This scenario applies for the On-demand Session case.

This flow shows the signaling sequence for the manual answer case. The flow is as shown in Figure 9 *"PoC Session invitation with manual answer"*.

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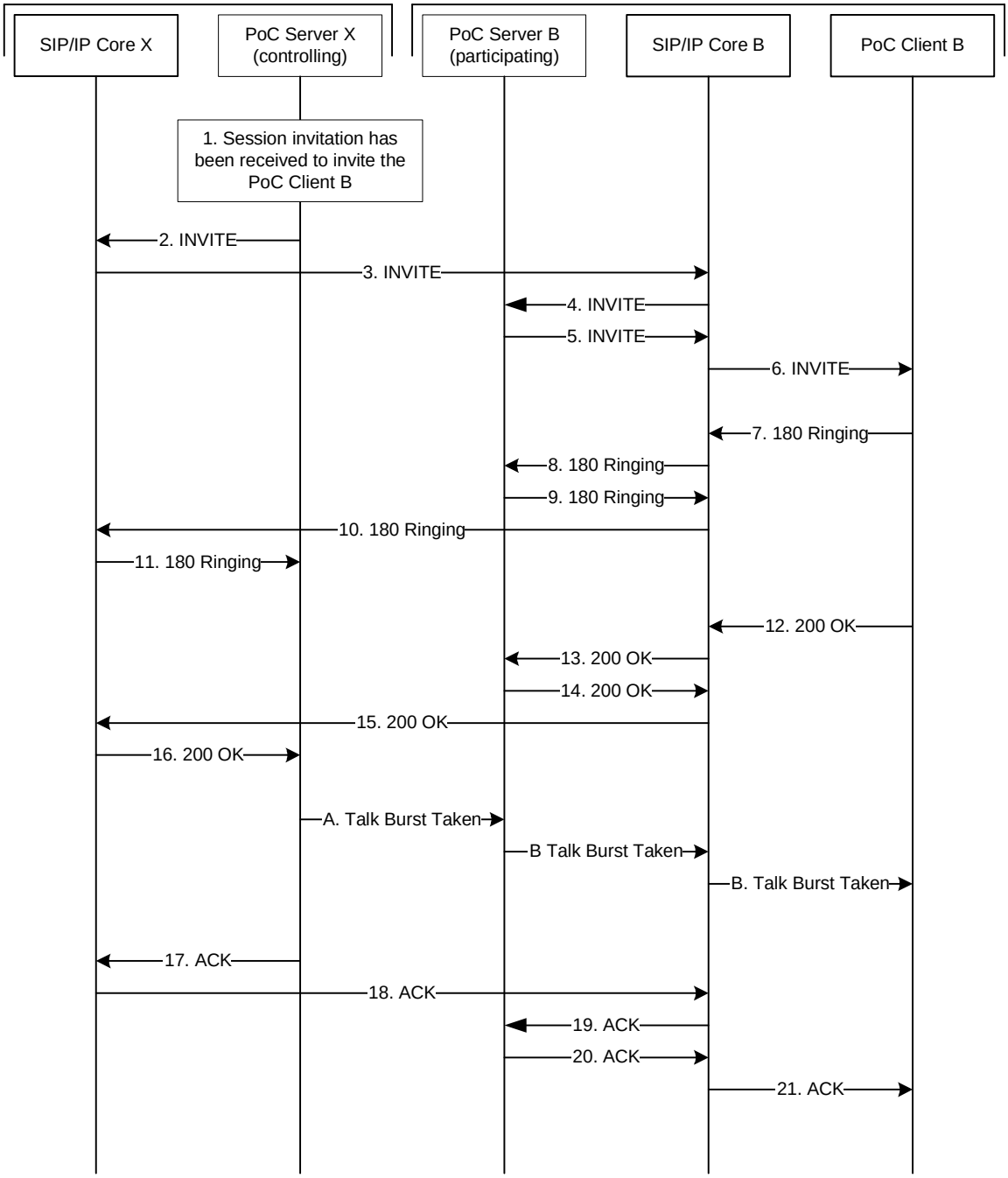

Figure 9: PoC Session invitation with manual answer

The steps of the flow are as follows:

1. **Session invitation has been received to invite PoC Client**
2. **SIP INVITE request (from the PoC Server X to SIP/IP Core X)**

   PoC Server X sends the SIP INVITE request to SIP/IP Core X.

   Request-URI sip:PoC-UserB@networkB.net

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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>
Privacy:	id
Contact:	sip:PoC-SessionABCDEF@PoC-ServerX.networkX.net;session=1-1>;+g.poc.talkbust; isfocus
Supported:	100rel,norefersub,timer
Session-Expires:	1800;refresher=uas
Allow:	INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,

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=	fmtp: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.

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>
Privacy:	id

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Contact:	<sip:PoC-SessionABCDEF@PoC-ServerX.networkX.net;session=1-1>;+g.poc.talkburst;isfocus
Supported:	100rel,norefersub,timer
Session-Expires:	1800;refresher=uas
Allow:	INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,

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=	fmtp: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 the 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
Referred-By:	"PoC User A" <sip:PoC-UserA@networkA.net>
Privacy:	id
Contact:	<sip:PoC-SessionABCDEF@PoC-ServerX.networkX.net;session=1-1>;+g.poc.talkburst;isfocus
Supported:	100rel,norefersub,timer
Session-Expires:	1800;refresher=uas
Allow:	INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,

SDP PARAMETERS

c=	IN IP6 50555::ccc:ddd:aaa:bbb

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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=	fmtp: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-SessionABCDEF@PoC_ServerB.networkB.net;session=1-1>;+g.poc.talkburst
Supported:	norefersub,timer
Session-Expires:	1800;refresher=uas
P-Alerting-Mode:	Manual
Allow:	INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,

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=	fmtp: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.

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Request-URI	sip:PoC-UserB@networkB.net

SIP HEADERS

Accept-Contact:	*;+g.poc.talkburst; require;explicit
User-Agent:	PoC-serv/OMA1.0
Contact:	<sip:PoC-SessionABCDEF@PoC_ServerB.networkB.net;session=1-1>; +g.poc.talkburst
Supported:	norefersub,timer
Session-Expires:	1800;refresher=uas
P-Alerting-Mode:	Manual
Allow:	INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,

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=	fmtp: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

P-Preferred-Identity:	"PoC User B" <sip:PoC-UserB@networkB.net>
Privacy:	id
Require:	timer
Server:	PoC-client/OMA1.0 Acme-Talk5000/v1.01
Contact:	<sip:PoC-ClientB.networkB.net>;+g.poc.talkburst
Allow:	INVITE,ACK,CANCEL,BYE,REFER,

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.

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SIP HEADERS

P-Asserted-Identity:	"PoC User B" <sip:PoC-UserB@networkB.net>
Privacy:	id
Require:	timer
Server:	PoC-client/OMA1.0 Acme-Talk5000/v1.01
Contact:	<sip:PoC-ClientB.@networkB..net>; +g.poc.talkburst
Allow:	INVITE,ACK,CANCEL,BYE,REFER,

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-SessionABCDEF@PoC-ServerB.networkB.net>;+g.poc.talkburst
Allow:	INVITE,ACK,CANCEL,BYE,REFER,PRACK, UPDATE,

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-SessionABCDEF@PoC-ServerB.networkB.net>;+g.poc.talkburst
Allow:	INVITE,ACK,CANCEL,BYE, PRACK, UPDATE, REFER,

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

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Server:	PoC-serv/OMA1.0
Contact:	<sip:PoC-SessionABCDEF@PoC-ServerB.networkB.net>;+g.poc.talkburst
Allow:	INVITE,ACK,CANCEL,BYE, PRACK, UPDATE, REFER,

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

P-Preferred-Identity:	"PoC User B" <sip:PoC-UserB@networkB.net>
Privacy:	id
Require:	timer
Server:	PoC-client/OMA1.0 Acme-Talk5000/v1.01
Session-Expires:	1800;refresher=uas
Contact:	<sip:PoC-ClientB.networkB.net>;+g.poc.talkburst
Allow:	INVITE,ACK,CANCEL,BYE,REFER,

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=	fmtp: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

P-Asserted-Identity:	"PoC User B" <sip:PoC-UserB@networkB.net>
Privacy:	id
Require:	timer
Server:	PoC-client/OMA1.0 Acme-Talk5000/v1.01
Session-Expires:	1800;refresher=uas

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Contact: <sip:PoC-ClientB.networkB.net>;+g.poc.talkburst

Allow: INVITE,ACK,CANCEL,BYE,REFER,

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= fmtp: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

P-Asserted-Identity: "PoC User B" <sip:PoC-UserB@networkB.net>

Privacy: id

Require: timer

Server: PoC-serv/OMA1.0

Session-Expires: 1800;refresher=uas

Contact: <sip:PoC-SessionABCDEF@PoC-ServerB.networkB.net>;+g.poc.talkburst

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= fmtp: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

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P-Asserted-Identity:	"PoC User B" <sip:PoC-UserB@networkB.net>
Privacy:	id
Require:	timer
Server:	PoC-serv/OMA1.0
Session-Expires:	1800;refresher=uas
Contact:	<sip:PoC-SessionABCDEF@PoC-ServerB.networkB.net>;+g.poc.talkburst

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=	fmtp: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

P-Asserted-Identity:	"PoC User B" <sip:PoC-UserB@networkB.net>
Privacy:	id
Require:	timer
Server:	PoC-serv/OMA1.0
Session-Expires:	1800;refresher=uas
Contact:	<sip:PoC-SessionABCDEF@PoC-ServerB.networkB.net>;+g.poc.talkburst

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

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a= fmtp: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

This flow shows the automatic answer case for the On-demand Session case. The flows in Figure 10 *"PoC Session invitation with automatic answer"* shows the message flow for the scenario.

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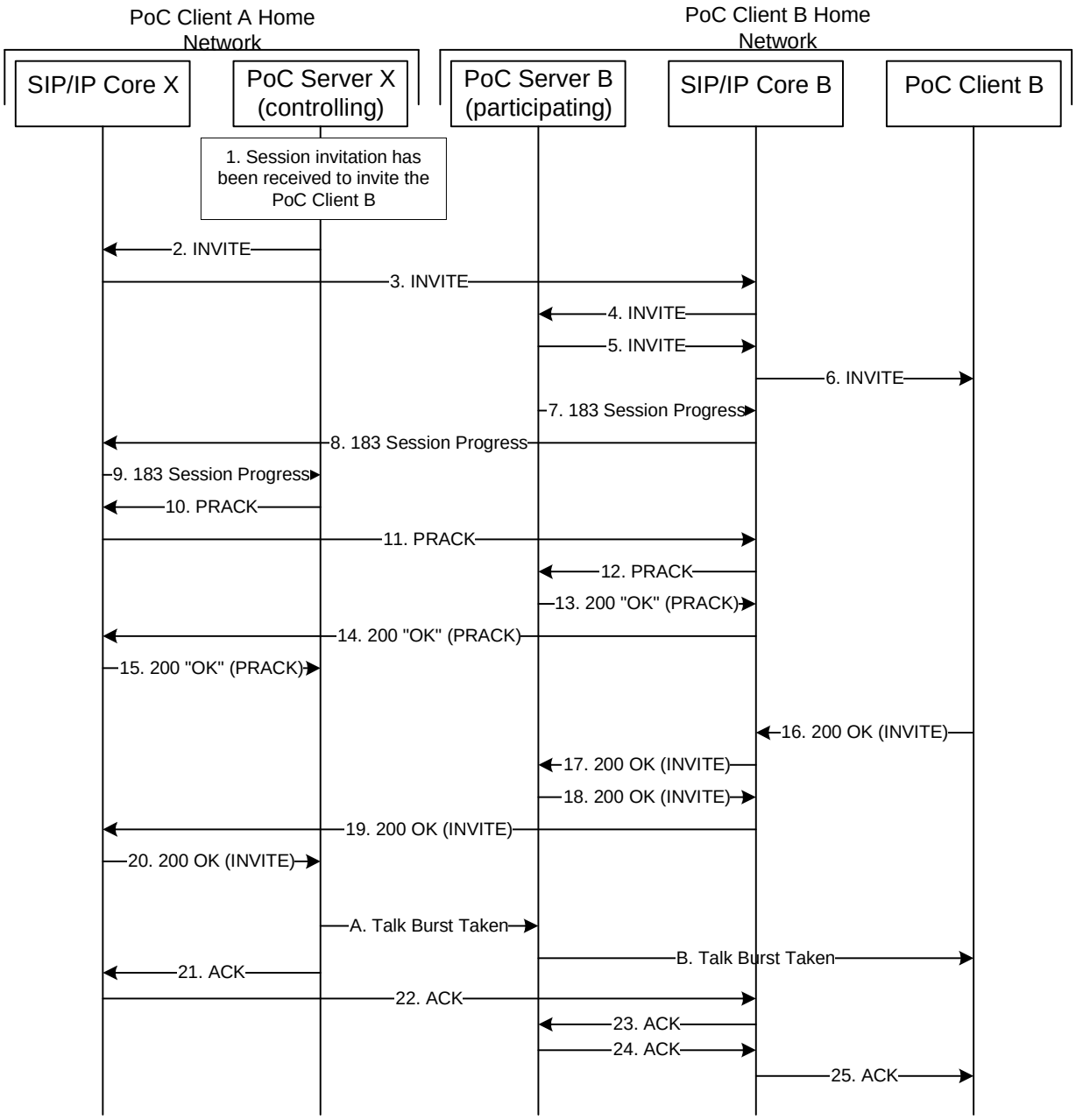

Figure 10: PoC Session invitation with automatic answer

The steps of the flow are as follows:

1. Session invitation has been received to invite PoC Client

2. SIP INVITE request (from PoC Server X to SIP/IP Core X)

PoC Server X sends the SIP INVITE request to SIP/IP Core X

Request-URI	sip:PoC-UserB@networkB.net

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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>
Privacy:	id
Contact:	<sip:PoC-SessionABCDEF@PoC-ServerX.networkX.net;session=adhoc>; +g.poc.talkburst;isfocus
Supported:	100rel,norefersub,timer
Session-Expires:	1800;refresher=uas
Allow:	INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,

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=	fmtp: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

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>
Privacy:	id
Contact:	<sip:PoC-SessionABCDEF@PoC-ServerX.networkX.net;session=adhoc>; +g.poc.talkburst;isfocus

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Supported:	100rel,norefersub,timer
Session-Expires:	1800;refresher=uas
Allow:	INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,

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=	fmtp: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 the 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
Referred-By:	"PoC User A" <sip:PoC-UserA@networkA.net>
Privacy:	id
Contact:	<sip:PoC-SessionABCDEF@PoC-ServerX.networkX.net;session=adhoc>; +g.poc.talkburst;isfocus
Supported:	100rel,norefersub,timer
Session-Expires:	1800;refresher=uas
Allow:	INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,

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

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a=	rtcp:53080
m=	Application 50000 udp TBCP
a=	fmtp: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-SessionABCDEF@PoC_ServerB.networkB.net;session=adhoc>; +g.poc.talkburst
Supported:	norefersub,timer
Session-Expires:	1800;refresher=uas
P-Alerting-Mode:	MAO
Allow:	INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,
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=	fmtp: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.

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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-SessionABCDEF@PoC_ServerB.networkB.net;session=adhoc>; +g.poc.talkburst
Supported:	norefersub,timer
Session-Expires:	1800;refresher=uas
P-Alerting-Mode:	MAO
Allow:	INVITE,ACK,CANCEL,BYE,PRACK,UPDATE,REFER,

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=	fmtp: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-SessionABCDEF@PoC-ServerB.networkB.net>;+g.poc.talkburst
P-Answer-State:	Unconfirmed

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Allow: INVITE,ACK,CANCEL,BYE, PRACK, UPDATE, REFER,

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-SessionABCDEF@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-SessionABCDEF@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)

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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-SessionABCDEF@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-SessionABCDEF@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-SessionABCDEF@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

To: “PoC User B”<sip:PoC-ClientB.networkB.net>

Privacy: id

Server: PoC-client/OMA1.0 Acme-Talk5000/v1.01

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Contact:	<sip:PoC-ClientB.networkB.net >;+g.poc.talkburst
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=	fmtp: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:	<sip:PoC-UserB@networkB.net>
To:	“PoC User B”<sip:PoC-ClientB.networkB.net>
Privacy:	id
Server:	PoC-client/OMA1.0 Acme-Talk5000/v1.01
Contact:	<sip:PoC-ClientB.networkB.net >;+g.poc.talkburst
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

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a=	fmtp: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

P-Asserted-Identity:	"PoC User B" <sip:PoC-UserB@networkB.net>
Privacy:	id
Require:	timer
Session-Expires:	1800;refresher=uas
Server:	PoC-Serv/OMA1.0
Contact:	<sip:PoC-SessionABCDEF@PoC-ServerB.networkB.net>;+g.poc.talkburst
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=	fmtp: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

P-Asserted-Identity:	"PoC User B" <sip:PoC-UserB@networkB.net>
To:	“PoC User B”<sip:PoC-ClientB.networkB.net>
Privacy:	id
Require:	timer
Session-Expires:	1800;refresher=uas
Server:	PoC-Serv/OMA1.0

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Contact:	<sip:PoC-SessionABCDEF@PoC-ServerB.networkB.net>;+g.poc.talkburst
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=	fmtp: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

P-Asserted-Identity:	"PoC User B" <sip:PoC-UserB@networkB.net>
Privacy:	id
Require:	timer
Session-Expires:	1800;refresher=uas
Server:	PoC-Serv/OMA1.0
Contact:	<sip:PoC-SessionABCDEF@PoC-ServerB.networkB.net>;+g.poc.talkburst
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=	fmtp: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.

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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 Pre-arranged PoC Group Session

F.6.1 Using on-demand signaling

The signaling flow is valid for rejoining a Pre-arranged PoC Group Session.

Prerequisites for the signaling flow are that the PoC Client has previously been a Participant in the Pre-arranged PoC Group Session and that the Pre-arranged PoC Group Session is still ongoing.

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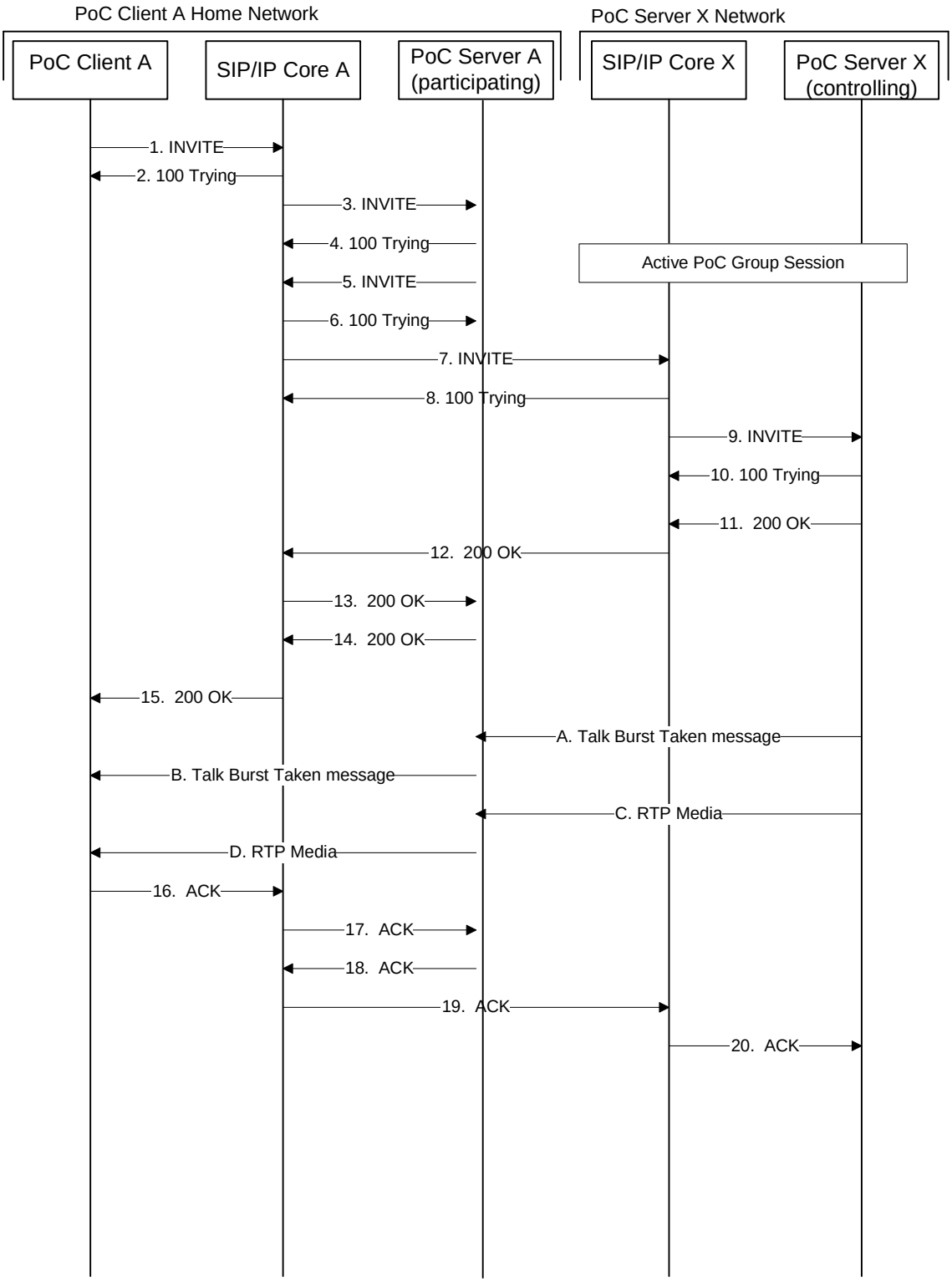

Figure 11: Rejoin a Pre-arranged PoC Group Session

The steps of the flows are as follows:

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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 Pre-arranged PoC Group 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-SessionABCDEF@PoC-ServerA.networkA.net;session=prearranged

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=	fmtp: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-SessionABCDEF@PoC-ServerA.networkA.net;session=prearranged

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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=	rtcp:5560
m=	application 2000 udp TBCP
a=	fmtp: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 Pre-arranged PoC Group 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-SessionABCDEF@PoC-ServerX.networkX.net;session=prearranged

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

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Contact:	<sip:PoC-SessionABCDEF@PoC-ServerA.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 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=	fmtp: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-SessionABCDEF@PoC-ServerX.networkX.net;session=prearranged

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-SessionABCDEF@PoC-ServerA.networkA.net>;+g.poc.talkburst
Supported:	timer
Session-Expires:	1800;refresher=uac
Allow:	INVITE,ACK,CANCEL,BYE,REFER,MESSAGE,SUBSCRIBE,

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	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=	fmtp: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-SessionABCDEF@PoC-ServerX.networkX.net;session=prearranged

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-SessionABCDEF@PoC-ServerA.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 50555::ccc:ddd:aaa:bbb
m=	audio 53456 RTP/AVP 97 98

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a=	Rtpmap:97 AMR
a=	Rtpmap:98 EVRC/8000
a=	rtcp:53080
m=	Application 50000 udp TBCP
a=	fmtp: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 Pre-arranged PoC Group Session and sends the SIP 200 "OK" response to the SIP/IP Core X.

SIP HEADERS

P-Asserted-Identity:	"OMA Golf Buddies" <sip:OMA-Golf-buddies @networkX.net;session=prearranged>
Contact:	<sip:PoC-SessionABCDEF%PoC-SessionABCDEF@PoC-ServerX.net%@networkX.net;session=prearranged>;+g.poc.talkburst;isfocus
Server:	PoC-serv/OMA1.0
Require:	timer
Session-Expires:	1800;refresher=uac
Allow:	INVITE,ACK,CANCEL,BYE,PRACK, UPDATE, REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH
Supported:	norefersub

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=	fmtp: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

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P-Asserted-Identity:	"OMA Golf Buddies" <sip:OMA-Golf-buddies @networkX.net;session=prearranged>
Contact	<sip: PoC-SessionABCDEF@PoC-ServerX.networkX.net;session=prearranged>;+g.poc.talkburst;isfocus
Server:	PoC-serv/OMA1.0
Require:	timer
Session-Expires:	1800;refresher=uac
Allow:	INVITE,ACK,CANCEL,BYE,PRACK, UPDATE, REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH
Supported:	norefersub

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=	fmtp: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:	"OMA Golf Buddies" <sip:OMA-Golf-buddies @networkX.net;session=prearranged>
Contact	<sip: PoC-SessionABCDEF@PoC-ServerX.networkX.net;session=prearranged>;+g.poc.talkburst;isfocus
Server:	PoC-serv/OMA1.0
Require:	timer
Session-Expires:	1800;refresher=uac
Allow:	INVITE,ACK,CANCEL,BYE,PRACK, UPDATE, REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH
Supported:	norefersub

SDP PARAMETERS

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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=	fmtp: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:	"OMA Golf Buddies" <sip:OMA-Golf-buddies @networkX.net;session=prearranged>
Contact	<sip:PoC-SessionABCDEF@PoC-ServerA.networkA.net;session=prearranged>;+g.poc.talkburst
Server:	PoC-serv/OMA1.0
Require:	timer
Session-Expires:	1800;refresher=uac
Allow:	INVITE,ACK,CANCEL,BYE,PRACK, UPDATE, REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH
Supported:	norefersub

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=	fmtp: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:	"OMA Golf Buddies" <sip:OMA-Golf-buddies

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	@networkX.net;session=prearranged>
Contact	<sip:PoC-SessionABCDEF@PoC-ServerA.networkA.net;session=prearranged>;+g.poc.talkburst
Server:	PoC-serv/OMA1.0
Require:	timer
Session-Expires:	1800;refresher=uac
Allow:	INVITE,ACK,CANCEL,BYE,PRACK, UPDATE, REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH
Supported:	norefersub

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=	fmtp:TBCP queuing=1; tb_priority=2; timestamp=1

A. **TBCP Talk Burst Taken message (from PoC Server X to PoC Server A)**
The PoC Server X sends a TBCP Talk Burst Taken message to the PoC Server A. TB Taken is sent only in the case that another PoC Client has permission to speak..

B. **TBCP Talk Burst Taken message (from PoC Server A to PoC Client A)**
The PoC Server A sends the TBCP Talk Burst Taken message to the PoC Client A.

C. **RTP Media from PoC Server X to PoC Server A**
The PoC Server A sends the RTP Media to the PoC Server A.

D. **RTP Media from PoC Server A to PoC Client A**
The PoC Server A sends the RTP Media to the PoC Client X.

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)
The PoC Server A forwards the SIP ACK request to the 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.

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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.

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 PoC Group PoC Session using On-demand signaling.

NOTE: The signaling flow is valid for joining a Chat PoC Group Session. Figure 12 *"Joining a Chat PoC Group Session"* shows the signaling flow for the scenario:

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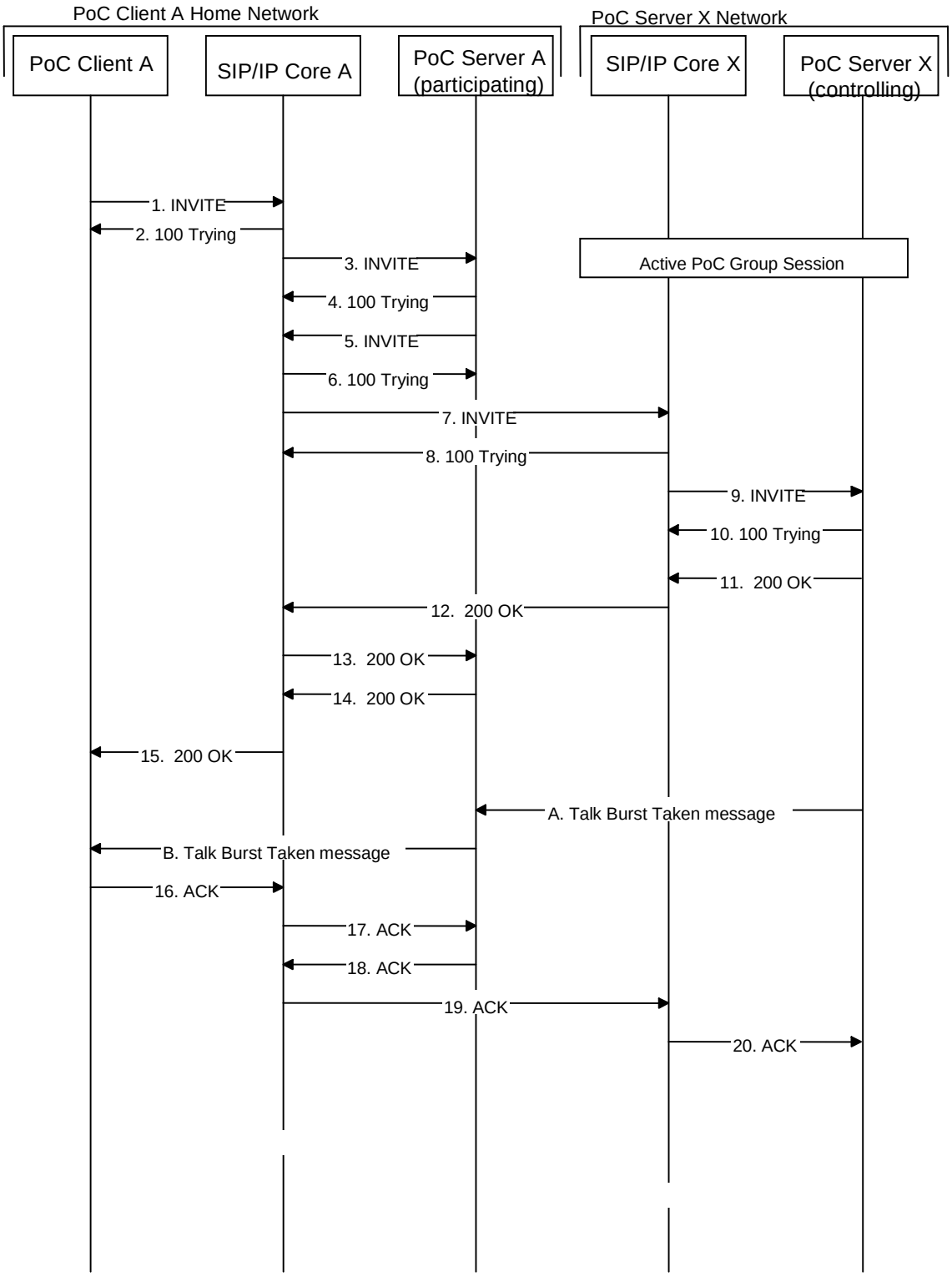

Figure 12: Joining a Chat PoC Group Session.

The steps of the flows are as follows:

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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 Chat Group PoC Session and sends a SIP INVITE request to the SIP/IP Core A. The SIP INVITE request includes the Chat PoC Group Identity in the Request-URI.

Request-URI	sip:OMA-Golf-buddies@networkX.net;session=chat

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=	fmtp: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;session=chat

SIP HEADERS

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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=	rtcp:5560
m=	application 2000 udp TBCP
a=	fmtp: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 Chat PoC Group Identity in the Request-URI.

Request-URI	sip:OMA-Golf-buddies@networkX.net;session=chat

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-SessionABCDEF@PoC-ServerA.networkA.net>;+g.poc.talkburst

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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=	fmtp: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 Chat 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;session=chat

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-SessionABCDEF@PoC-ServerA.networkA.net>;+g.poc.talkburst
Supported:	timer
Session-Expires:	1800;refresher=uac
Allow:	INVITE,ACK,CANCEL,BYE,REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH

SDP PARAMETERS

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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=	fmtp: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;session=chat

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-SessionABCDEF@PoC-ServerA.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 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

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a=	fmtp: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 Chat PoC Group Session and sends the SIP 200 "OK" response to the SIP/IP Core X.

SIP HEADERS

P-Asserted-Identity:	<sip:OMA-Golf-buddies@networkX.net;session=chat>
Contact	<sip:PoC-SessionABCDEF@PoC-ServerX.networkX.net;session=chat>;+g.poc.talkburst;isfocus
Server:	PoC-serv/OMA1.0
Require:	timer
Session-Expires:	1800;refresher=uac
Allow:	INVITE,ACK,CANCEL,BYE,PRACK, UPDATE, REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH
Supported:	norefersub

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=	fmtp: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:OMA-Golf-buddies@networkX.net;session=chat>
Contact	<sip:PoC-SessionABCDEF@PoC-ServerX.networkX.net;session=chat>;+g.poc.talkburst;isfocus
Server:	PoC-serv/OMA1.0
Require:	timer

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Session-Expires:	1800;refresher=uac
Allow:	INVITE,ACK,CANCEL,BYE,PRACK, UPDATE, REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH
Supported:	norefersub

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=	fmtp: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:OMA-Golf-buddies@networkX.net;session=chat>
Contact	<sip:PoC-SessionABCDEF@PoC-ServerX.networkX.net;session=chat>;+g.poc.talkburst;isfocus
Server:	PoC-serv/OMA1.0
Require:	timer
Session-Expires:	1800;refresher=uac
Allow:	INVITE,ACK,CANCEL,BYE,PRACK, UPDATE, REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH
Supported:	norefersub

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=	fmtp:TBCP queuing=1; tb_priority=2; timestamp=1

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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:OMA-Golf-buddies@networkX.net;session=chat>
Contact	<sip:PoC-SessionABCDEF@ PoC-ServerA.networkA.net ;session=chat>;+g.poc.talkburst
Server:	PoC-serv/OMA1.0
Require:	timer
Session-Expires:	1800;refresher=uac
Allow:	INVITE,ACK,CANCEL,BYE,PRACK, UPDATE, REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH
Supported:	norefersub

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=	fmtp: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:OMA-Golf-buddies@networkX.net;session=chat>
Contact	<sip:PoC-SessionABCDEF@PoC-ServerA.networkA.net ;session=chat>;+g.poc.talkburst
Server:	PoC-serv/OMA1.0
Require:	timer
Session-Expires:	1800;refresher=uac
Allow:	INVITE,ACK,CANCEL,BYE,PRACK, UPDATE,

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	REFER,MESSAGE,SUBSCRIBE, NOTIFY,PUBLISH
Supported:	norefersub

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=	fmtp:TBCP queuing=1; tb_priority=2; timestamp=1

A.**TBCP Talk Burst Taken message (from PoC Server X to PoC Server A)**

The PoC Server X sends a TBCP Talk Burst Taken message to the PoC Server A.

B. TBCP Talk Burst Taken message (from PoC Server A to PoC Client A)

The PoC Server A sends the TBCP Talk Burst Taken 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.

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 13 "*Cancelling a PoC Session establishment, originating flow*" shows the message flow for the scenario.

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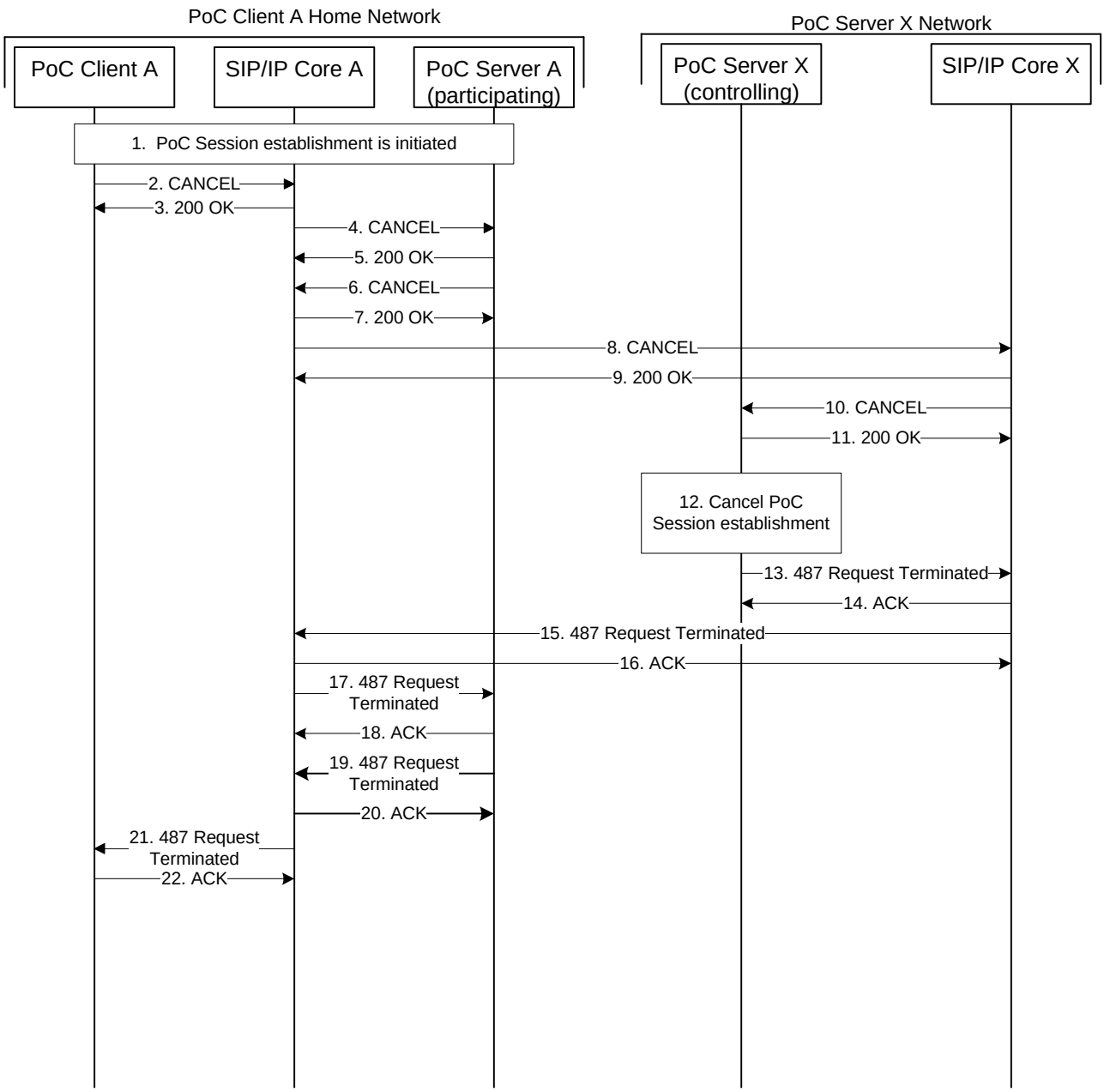

Figure 13: Cancelling a PoC Session establishment, originating flow.

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).**
   The PoC Client A cancels the establishment of the PoC Session, e.g. because of a PoC User interaction and sends a SIP CANCEL request to the SIP/IP Core A.

Request-URI	Sip:My-Golf-buddies@networkX.net

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3. **SIP 200 “OK” response (from SIP/IP Core A to the PoC Client A)**
   The SIP/IP Core A sends the SIP 200 "OK" response to the PoC Client A.

4. **SIP CANCEL request (from SIP/IP Core A to the PoC Server A)**
   The SIP/IP Core A sends the SIP CANCEL request to the PoC Server A.

   Request-URI Sip:My-Golf-buddies@networkX.net

5. **SIP 200 “OK” response (from the PoC Server A to SIP/IP Core A)**
   The PoC Server A sends the SIP 200 "OK" response to the SIP/IP Core A.

6. **SIP CANCEL request (from the PoC Server A to SIP/IP Core A)**
   The PoC Server A sends the SIP CANCEL request to SIP/IP Core A.

   Request-URI Sip:My-Golf-buddies@networkX.net

7. **SIP 200 “OK” response (from SIP/IP Core A to the PoC Server A)**
   The SIP/IP Core A sends the SIP 200 "OK" response to the PoC Server A.

8. **SIP CANCEL request (from SIP/IP Core A to SIP/IP Core X)**
   The SIP/IP Core A sends the SIP CANCEL request to the SIP/IP Core X.

   Request-URI Sip:My-Golf-buddies@networkX.net

9. **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 SIP/IP Core A.

10. **SIP CANCEL request (from SIP/IP Core X to the PoC Server X)**
    The SIP/IP Core X sends the SIP CANCEL request to the PoC Server X.

    Request-URI Sip:My-Golf-buddies@networkX.net

11. **SIP 200 “OK” response (from the PoC Server X to SIP/IP Core X)**
    The PoC Server X sends the SIP 200 “OK” response to SIP/IP Core X.

12. **Cancel PoC Session initialization**
    The PoC Server X cancels the invitation to the PoC Session for each Invited PoC Users as shown in Figure 14 “*Cancelling a PoC Session establishment, terminating flow*”.

13. **SIP 487 “Request Terminated” response (from the PoC Server X to SIP/IP Core X)**
    The PoC Server X sends the SIP 487 “Request Terminated” response to the SIP/IP Core X to indicate that the SIP session establishment is terminated.

14. **SIP ACK request (from the SIP/IP Core X to the PoC Server X)**
    The SIP/IP Core X sends the SIP ACK request to the PoC Server X.

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15. **SIP 487 "Request Terminated" response (from the SIP/IP Core X to the SIP/IP Core A)**
    The SIP/IP Core X sends the SIP 487 "Request Terminated" response to the SIP/IP Core A.

16. **SIP ACK request (from the SIP/IP Core A to the SIP/IP Core X)**
    The SIP/IP Core A sends the SIP ACK request to the SIP/IP Core X.

17. SIP 487 "Request Terminated" response (from the SIP/IP Core A to the PoC Server A)
    The SIP/IP Core A sends the SIP 487 "Request Terminated" response to the PoC Server A.

18. **SIP ACK request (from the PoC Sever A to the SIP/IP Core A)**
The PoC Sever A sends the SIP ACK request to the SIP/IP Core A.

19. **SIP 487 "Request Terminated" response (from the PoC Server A to the SIP/IP Core A)**
The PoC Server A sends the SIP 487 "Request Terminated" response to the SIP/IP Core A.

20. **SIP ACK request (from the SIP/IP Core A to the PoC Server A)**
The SIP/IP Core A sends the SIP ACK request to the PoC Server A.

21. **SIP 487 "Request Terminated" response (from the SIP/IP Core A to the PoC Client A)**
    The SIP/IP Core A sends the SIP 487 "Request Terminated" response to the PoC Client A.

22. **SIP ACK request (from the PoC Client A to the SIP/IP Core A)**
    The PoC Client A sends the SIP ACK request to the 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 14 "*Cancelling a PoC Session establishment, terminating flow*" shows the signalling flow for the scenario.

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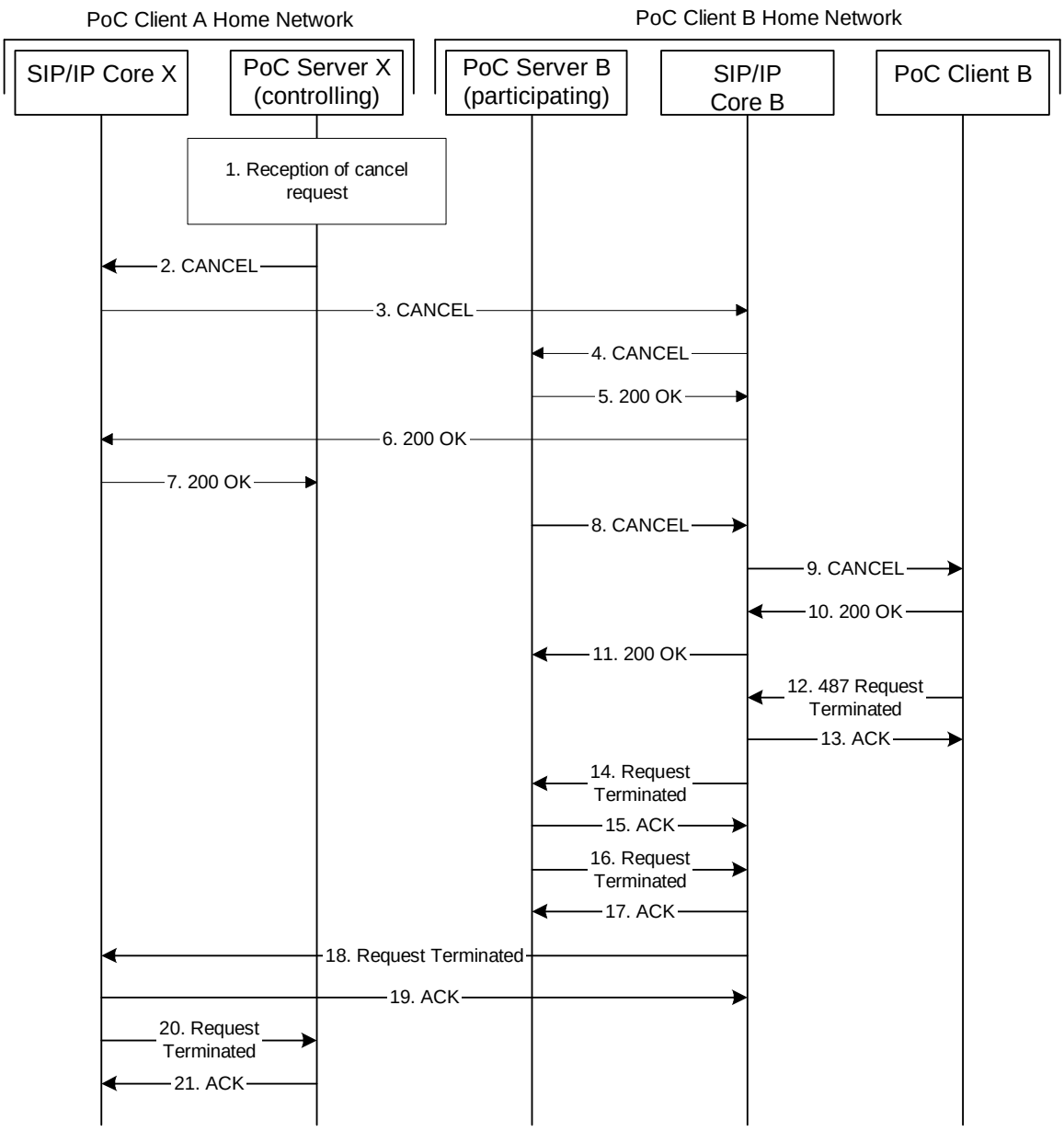

Figure 14: Cancelling a PoC Session establishment, terminating flow.

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 13 "*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)

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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)

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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 15 "*Leaving a PoC Session, originating flow – On-demand Session case*" shows the message flow for the scenario.

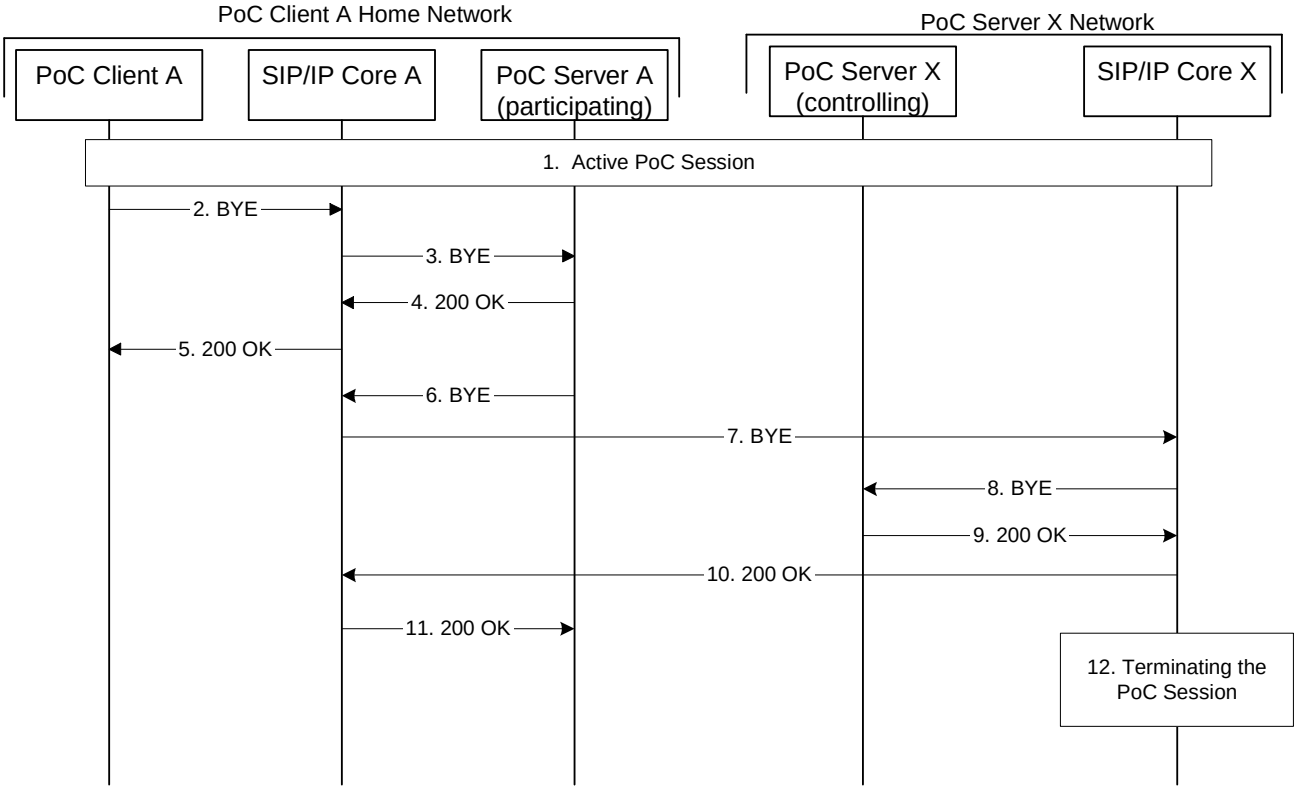

Figure 15: Leaving a PoC Session establishment, originating flow – On-demand Session case.

The steps of the flows are as follows:

1. **On-going PoC Session**
   An on-going PoC Session exists and two or more PoC Participants is connected.**2. SIP BYE request (from the PoC Client A to the SIP/IP Core A)**
   The PoC Client initiates release of the SIP session by sending the SIP BYE request to the SIP/IP Core A.

Request-URI	sip:TokenA%PoC-Session-Identity1@PoC-ServerX.networkX.net%@PoC-ServerA.networkA.net

SIP HEADERS

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Privacy: id

3. **SIP BYE request (from the SIP/IP Core A to the PoC Server A)**
   The SIP/IP Core A sends the SIP BYE request to the PoC Server A

   Request-URI sip:TokenA%PoC-Session-Identity1@PoC-ServerX.networkX.net%@PoC-ServerA.networkA.net

   SIP HEADERS

   Privacy: id

4. **SIP 200 "OK" response (from the PoC Server A to the SIP/IP Core A)**
   The PoC Server A sends the SIP 200 "OK" response to the SIP/IP Core A

5. **SIP 200 "OK" response (from the SIP/IP Core A to the PoC Client A)**
   The SIP/IP Core A sends the SIP 200 "OK" response to the PoC Client A

6. **SIP BYE request (from the PoC Server A to the SIP/IP Core A)**
   The PoC Server A sends the SIP BYE request to the SIP/IP Core A

   Request-URI sip: PoC-Session-Identity1@PoC-ServerX.networkX.net

   SIP HEADERS

   Privacy: id

7. **SIP BYE request (from the SIP/IP Core A to the SIP/IP Core X)**
   The PoC Server A sends the SIP BYE request to SIP/IP Core A

   Request-URI sip: PoC-Session-Identity1@PoC-ServerX.networkX.net

   SIP HEADERS

   Privacy: id

8. **SIP BYE request (from the SIP/IP Core X to the PoC Server X)**
   The SIP/IP Core X sends the SIP BYE request to the PoC Server X

   Request-URI sip: PoC-Session-Identity1@PoC-ServerX.networkX.net

   SIP HEADERS

   Privacy: id

9. **SIP 200 "OK" response (from the PoC Server X to the SIP/IP Core X)**
   The PoC Server X sends the SIP 200 "OK" response to the SIP/IP Core X

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10. **SIP 200 "OK" response (from the SIP/IP Core X to the SIP/IP Core A)**
    The SIP/IP Core X sends the SIP 200 "OK" response to the SIP/IP Core A

11. **SIP 200 "OK" response (from the SIP/IP Core A to the PoC Server A)**
    The SIP/IP Core A sends the SIP 200 "OK" response to the PoC Server A

12. **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 17 "*Disconnecting a PoC Participant from a PoC Session, terminating flow – On-demand Session case*" or Figure 18 "*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 16 "*Leaving a PoC Session, originating flow – Pre-established Session case*" shows the message flow for the scenario.

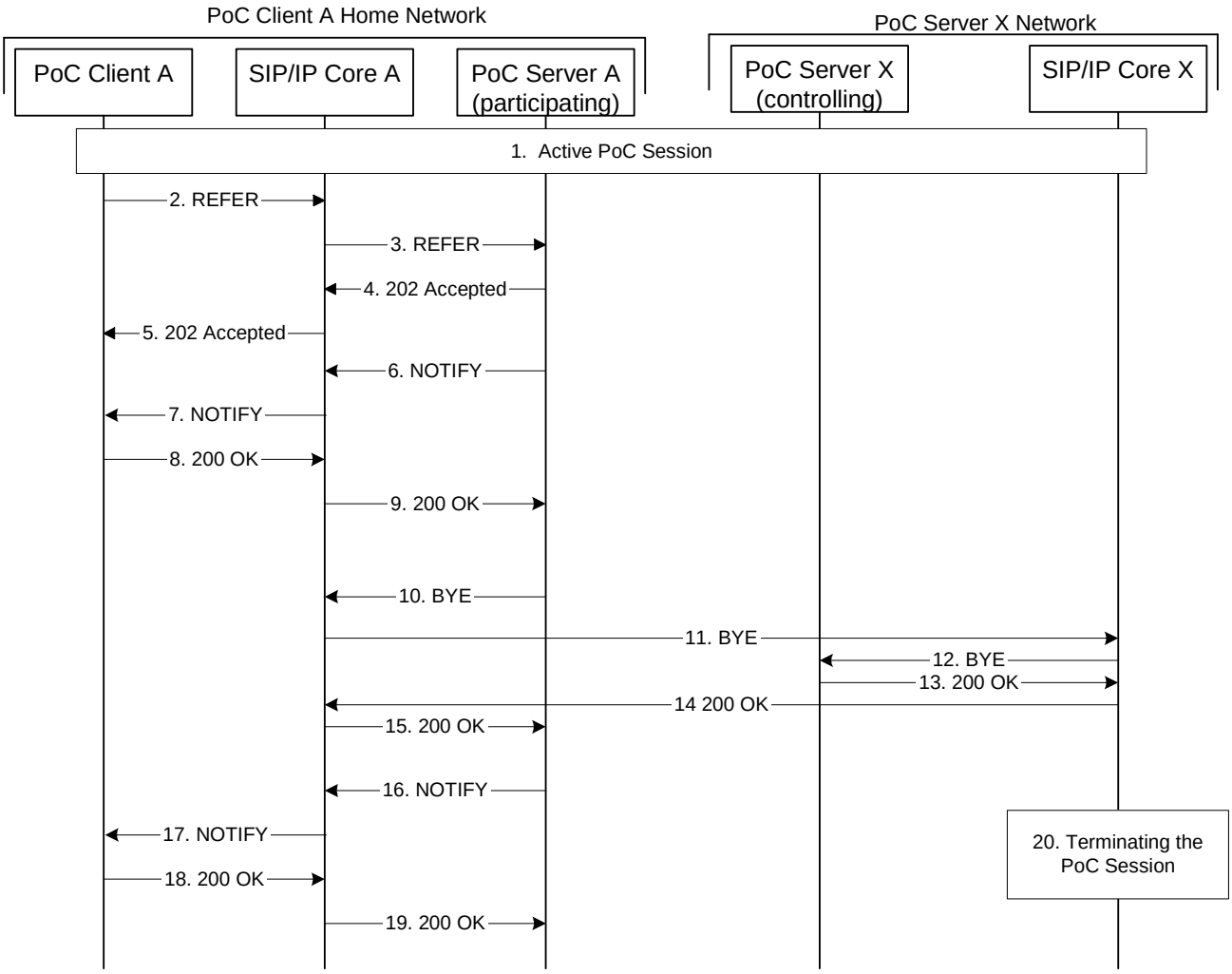

Figure 16: Leaving a PoC Session establishment, originating flow – Pre-established Session case.

The steps of the flows are as follows:

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1. **On-going PoC Session**

An on-going PoC Session exists and two or more PoC Participants is connected.

2. **SIP REFER request (from the PoC Client A to SIP/IP Core A)**
The PoC Client A sends a REFER request to the SIP/IP Core A.

Request-URI	sip:Pre-establishedSessionIdentityA@PoC-ServerA.networkA.net
SIP HEADERS	
Refer-To:	sip:PoC-Session-Identity1@PoC-ServerX.networkX.net;method=BYE
Privacy:	id
Contact	sip:PoC-ClientA@

3. **SIP REFER request (from SIP/IP Core A to the PoC Server A)**
The SIP/IP Core A sends the REFER request to the PoC Server A.

Request-URI	sip:Pre-establishedSessionIdentityA@PoC-ServerA.networkA.net
SIP HEADERS	
Refer-To:	sip:PoC-Session-Identity1@PoC-ServerX.networkX.net;method=BYE
Privacy:	id
Contact	sip:PoC-ClientA@

4. **SIP 202 “Accepted” response (from the PoC Server A to SIP/IP Core A)**
The PoC Server A sends a SIP 202 “Accepted” response to the SIP/IP Core A.

5. **SIP 202 “Accepted” response (from SIP/IP Core A to the PoC Client A)**
The SIP/IP Core A sends the SIP 202 “Accepted” response to the PoC Client A.

6. **SIP NOTIFY request (from the PoC Server A to SIP/IP Core A)**The PoC Server sends a SIP NOTIFY request towards the PoC Client A and at the same time a SIP BYE request (see step 10) towards the PoC Server performing the Controlling PoC Function.

Request-URI	sip:PoCClientA@networkA.net
SIP HEADERS	
Subscription-State	active

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Content-Type	message/sipfrag;version=2.0

MIME BODY

SIP/2.0 100 Trying

7. **SIP NOTIFY request (from SIP/IP Core A to the PoC Client A)**
   The SIP/IP Core A sends the NOTIFY request to the PoC Client A.

Request-URI	sip:PoCClientA@networkA.net

SIP HEADERS

Subscription-State	active
Content-Type	message/sipfrag;version=2.0

MIME BODY

SIP/2.0 100 Trying

8. **SIP 200 “OK” response (from the PoC Client A to SIP/IP Core A)**
   The PoC Client A sends the SIP 200 “OK” response to the SIP/IP Core A.
9. **SIP 200 “OK” response (from SIP/IP Core A to the PoC Server A)**
   The SIP/IP Core A sends the SIP 200 “OK” response to the PoC Server A.
10. **SIP BYE request (from the PoC Server A to SIP/IP Core A)**
    The PoC Server A sends a SIP BYE request to the SIP/IP Core A.

Request-URI	sip:PoC-Session-Identity1@PoC-ServerX.networkX.net

11. **SIP BYE request (from SIP/IP Core A to SIP/IP Core X)**
    The SIP/IP Core A sends the SIP BYE request to the SIP/IP Core X.

Request-URI	sip:PoC-Session-Identity1@PoC-ServerX.networkX.net

12. **SIP BYE request (from SIP/IP Core X to the PoC Server X)**
    The SIP/IP Core X sends the SIP BYE request to the PoC Server X.

Request-URI	sip:PoC-Session-Identity1@PoC-ServerX.networkX.net

13. **SIP 200 “OK” response (from the PoC Server X to SIP/IP Core X)**
    The PoC Server X sends the SIP 200 “OK” response to SIP/IP Core X.
14. **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.

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15. **SIP 200 "OK" response (from SIP/IP Core A to the PoC Server A)**
    The SIP/IP Core A sends the SIP 200 "OK" response to the PoC Server A.

16. **SIP NOTIFY request (from the PoC Server A to the SIP/IP Core A)**
    The PoC Server A sends a SIP NOTIFY request towards the PoC Client A.

Request-URI	sip:PoCClientA@networkA.net

SIP HEADERS

Content-Type:	message/sipfrag;version=2.0
Subscription-State:	terminated;reason=noresource

MIME BODY

SIP/2.0 200 OK

17. **SIP NOTIFY request (from the SIP/IP Core A to the PoC Client A)**
    The SIP/IP Core A sends the NOTIFY request to the PoC Client A.

Request-URI	sip:PoCClientA@networkA.net

SIP HEADERS

Content-Type:	message/sipfrag;version=2.0
Subscription-State:	terminated;reason=noresource

MIME BODY

SIP/2.0 200 OK

18. **SIP 200 "OK" response (from the PoC Client A to the SIP/IP Core A)**
    The PoC Client A sends the SIP 200 "OK" response to the SIP/IP Core A.

19. **SIP 200 "OK" response (from the SIP/IP Core A to the PoC Server A)**
    The SIP/IP Core A sends the SIP 200 "OK" response to the PoC Server A.

20. **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 17 "*Disconnecting a PoC Participant from a PoC Session, terminating flow – On-demand Session case.*" or Figure 18 "*Disconnecting a PoC Participant from a PoC Session, 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 on-going 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 17 "*Disconnecting a PoC Participant from a PoC Session, terminating flow – On-demand Session case*" shows the signalling flow for the scenario.

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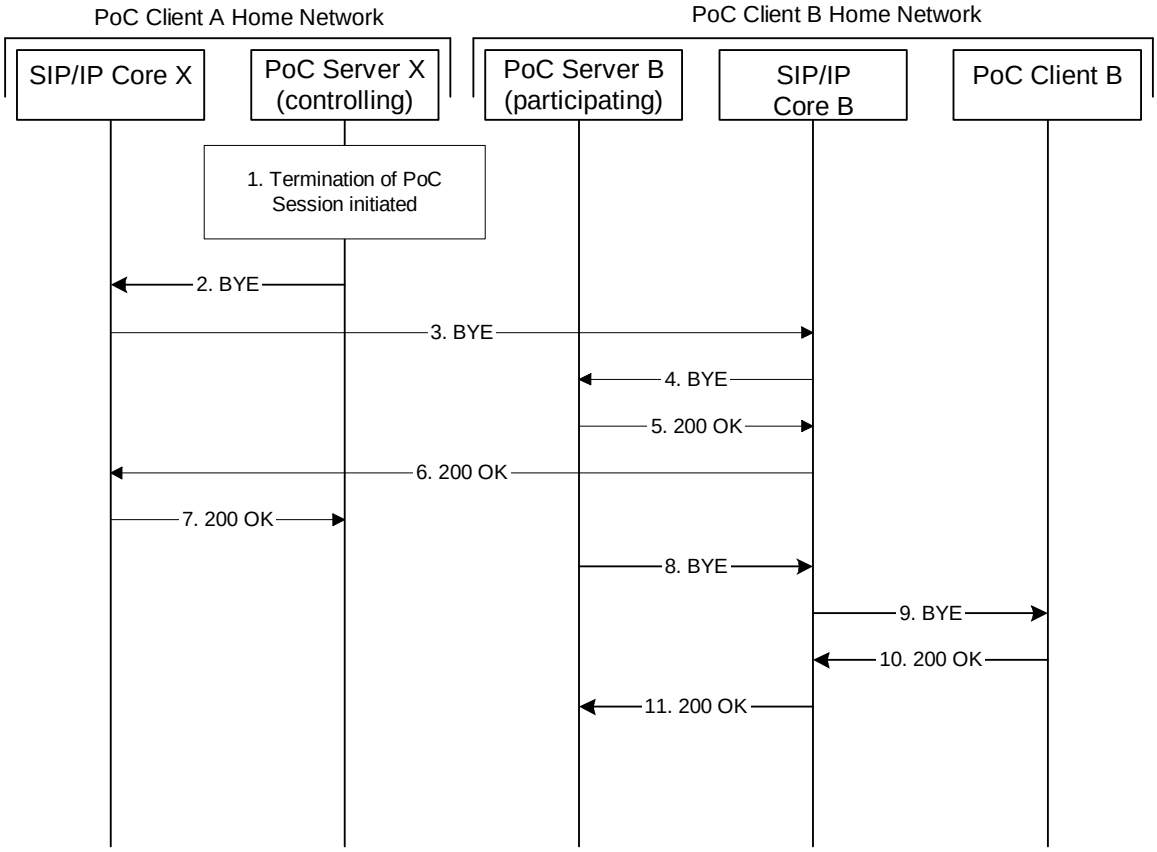

Figure 17: Disconnecting a PoC Participant from a PoC Session, terminating flow – On-demand Session case.

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 15 "*Leaving a PoC Session establishment, originating flow*" Figure 16 "*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 the SIP/IP Core X)**
   The PoC Server X sends the SIP BYE request to SIP/IP Core X.

   Request-URI sip:xyz@PoC-ServerB.networkB.net

3. **SIP BYE request (from the SIP/IP Core X to the SIP/IP Core B)**
   The SIP/IP Core X sends the SIP BYE request to SIP/IP Core B

   Request-URI sip:xyz@PoC-ServerB.networkB.net

4. **SIP BYE request (from the SIP/IP Core B to the PoC Server B)**
   The SIP/IP Core B sends SIP BYE request to the PoC Server B.

   Request-URI sip:xyz@PoC-ServerB.networkB.net

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5. **SIP 200 "OK" response (from the PoC Server B to the SIP/IP Core B)**
   The PoC Server B sends the 200 "OK" response to SIP/IP Core B.

6. **SIP 200 "OK" response (from the SIP/IP Core B to the SIP/IP Core X)**
   The SIP/IP Core B sends the 200 "OK" response to SIP/IP Core X.

7. **SIP 200 "OK" response (from the SIP/IP Core X to the PoC Server X)**
   The SIP/IP Core X sends the 200 "OK" response to the PoC Server X.

8. **SIP BYE request (from the PoC Server B to the SIP/IP Core B)**
   The PoC Server B sends the SIP BYE request to SIP/IP Core B.

   Request-URI sip:PoCClientB@networkB.net

9. **SIP BYE request (from the SIP/IP Core B to the PoC Client B)**
   The SIP/IP Core B sends the SIP BYE request to the PoC Client B.

   Request-URI sip:PoCClientB@networkB.net

10. **SIP 200 "OK" response (from the PoC Client B to the SIP/IP Core B)**
    The PoC Client B sends the 200 "OK" response to SIP/IP Core B.

11. **SIP 200 "OK" response (from the SIP/IP Core B to the PoC Server B)**
    The SIP/IP Core B sends the 200 "OK" response 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 on-going 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 18 "*Disconnecting a PoC Participant from a PoC Session, terminating flow – Pre-established Session case*" shows the signalling flow for the scenario.

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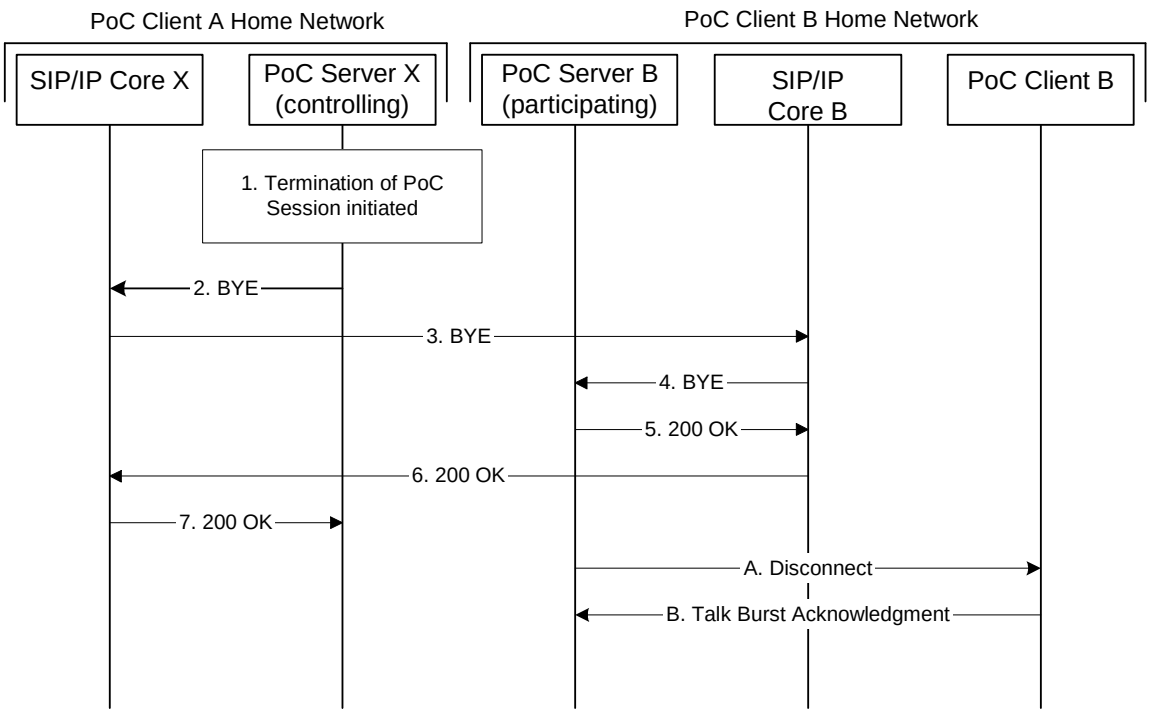

Figure 18: Disconnecting a PoC Participant from a PoC Session, terminating flow – Pre-established Session case.

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 Participants leaves the PoC Session. Figure 15 "*Leaving a PoC Session establishment, originating flow – On-demand Session case*" or Figure 16 "*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 the SIP/IP Core X)**
   The PoC Server X sends the SIP BYE request to the SIP/IP Core X.

   Request-URI sip:PoC-UserB-1@PoCServerB.networkB.net

3. **SIP BYE request (from the SIP/IP Core X to the SIP/IP Core B)**
   The SIP/IP Core X sends the SIP BYE request to the SIP/IP Core B.

   Request-URI sip:PoC-UserB-1@PoCServerB.networkB.net

4. **SIP BYE request (from the SIP/IP Core B to the PoC Server B)**

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The SIP/IP Core B sends the SIP BYE request to the PoC Server B.

Request-URI sip:PoC-UserB-1@PoCServerB.networkB.net

5. **SIP 200 “OK” response (from the PoC Server B to the SIP/IP Core B)**
   The PoC Server B sends the SIP 200 “OK” response to the SIP/IP Core B.

6. **SIP 200 “OK” response (from the SIP/IP Core B to the SIP/IP Core X)**
   The SIP/IP Core B sends the SIP 200 “OK” response to the SIP/IP Core X.

7. **SIP 200 “OK” response (from the SIP/IP Core X to the PoC Server X)**
   The SIP/IP Core X sends the SIP 200 “OK” response to the PoC Server X.**A. TBCP Disconnect message (from the PoC Server B to the PoC Client B)**
   The PoC Server B sends the TBCP Disconnect message to the PoC Client B.

B. TBCP Talk Burst Acknowledgment message (from the PoC Client B to the PoC Server B)
The PoC Client B sends the TBCP Talk Burst Acknowledgment message to the PoC Server B

Reason Code Accepted

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 19 *"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.

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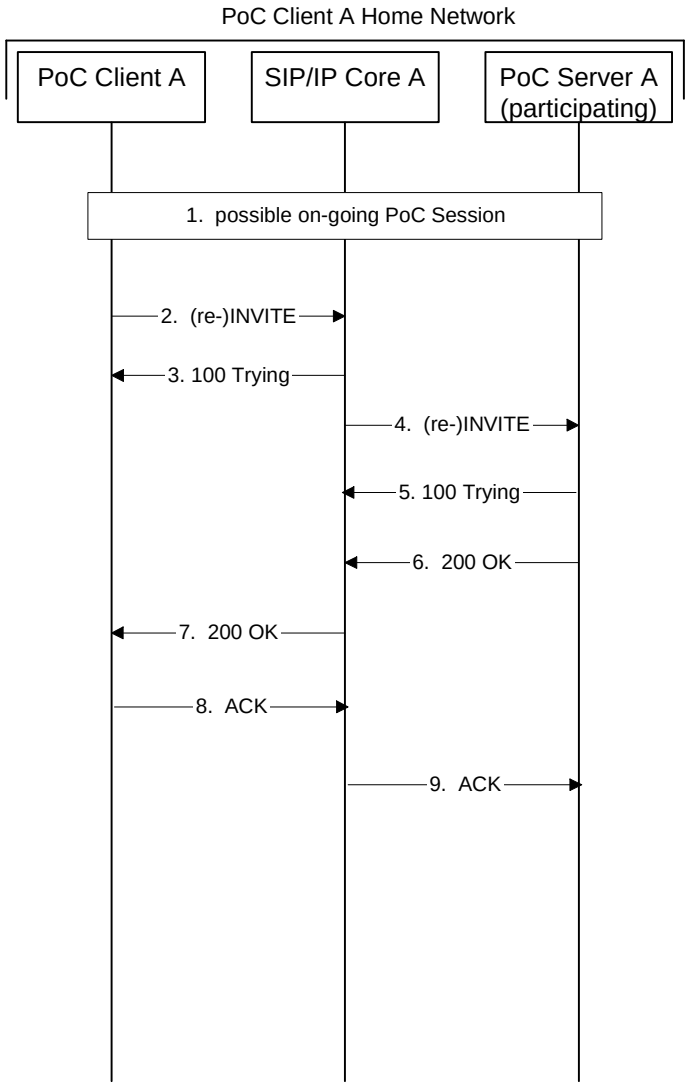

Figure 19: PoC Client A modifies the Simultaneous PoC Session parameters

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)**

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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 20 *"Placing media on or off hold"* shows the signalling flow for the scenario.

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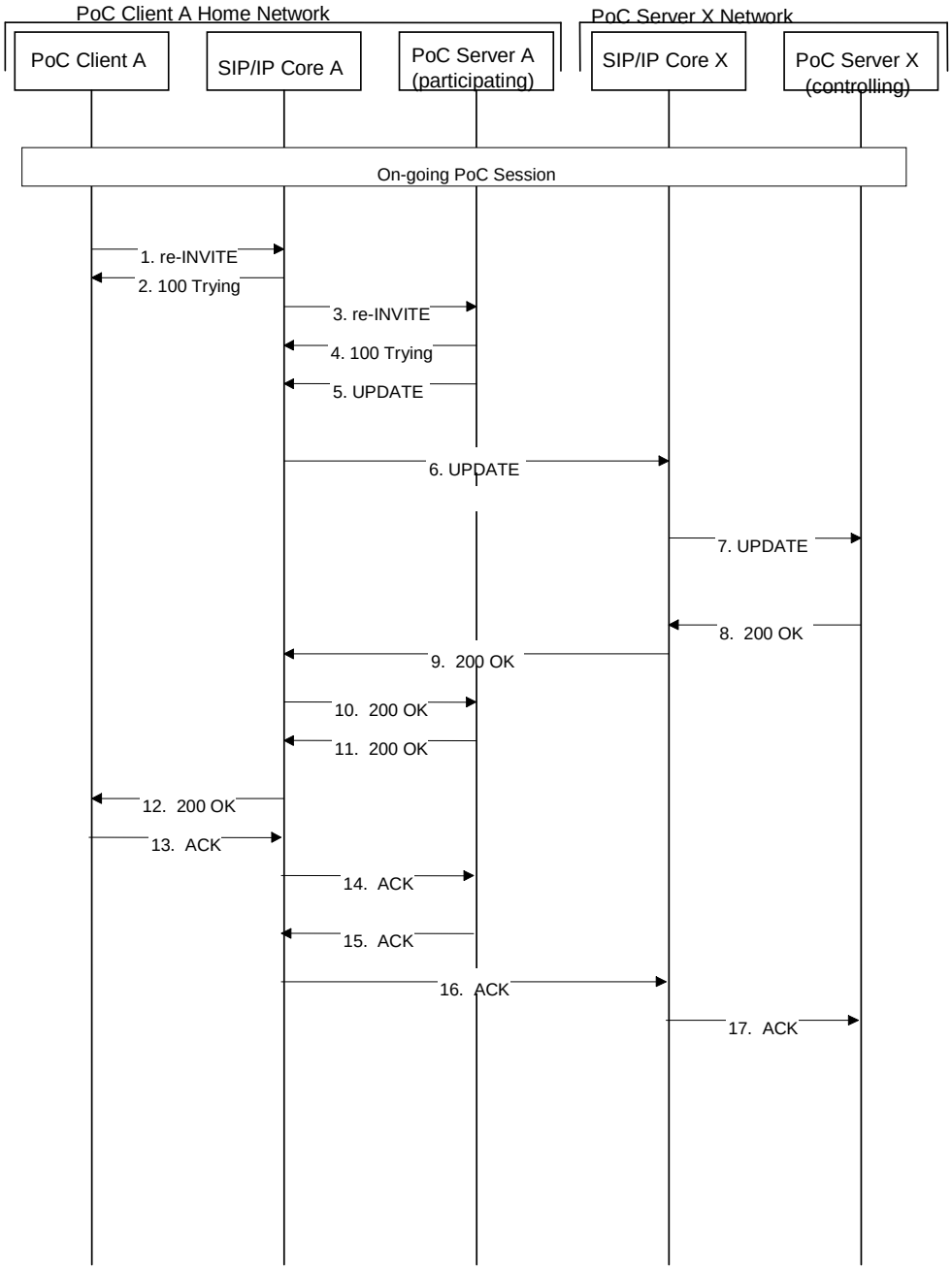

Figure 20: Placing media on or off hold.

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 100 "Trying" response (SIP/IP Core A to PoC Client A)

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The SIP/IP Core A responds to the SIP re-INVITE request with a SIP 100 "Trying" provisional response.

3. 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.

4. SIP 100 “Trying” response (from PoC Server A to SIP/IP Core A)

The SIP/IP Core A responds to the SIP re-INVITE request with a SIP 100 "Trying" provisional response.

5. 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.

6. 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.

7. 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.

8. 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.

9. 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.

10. 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.

11. 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.

12. 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.

13. 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.

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14. SIP ACK request (from SIP/IP Core A to PoC Server A)

The SIP/IP Core A forwards the SIP ACK request sent to the PoC Server A.

15. SIP ACK request (from PoC Server A to SIP/IP Core A)

The PoC Server A forwards the SIP ACK request sent to the SIP/IP Core A.

16. SIP ACK request (from SIP/IP Core A to SIP/IP Core X)

The SIP/IP Core A forwards the SIP ACK request sent to the SIP/IP Core X.

17. SIP ACK request (from SIP/IP Core X to PoC Server X)

The SIP/IP Core X forwards the SIP ACK request sent to the PoC Server X.

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 21 *"PoC Session modifications"* shows the message flow for the scenario.

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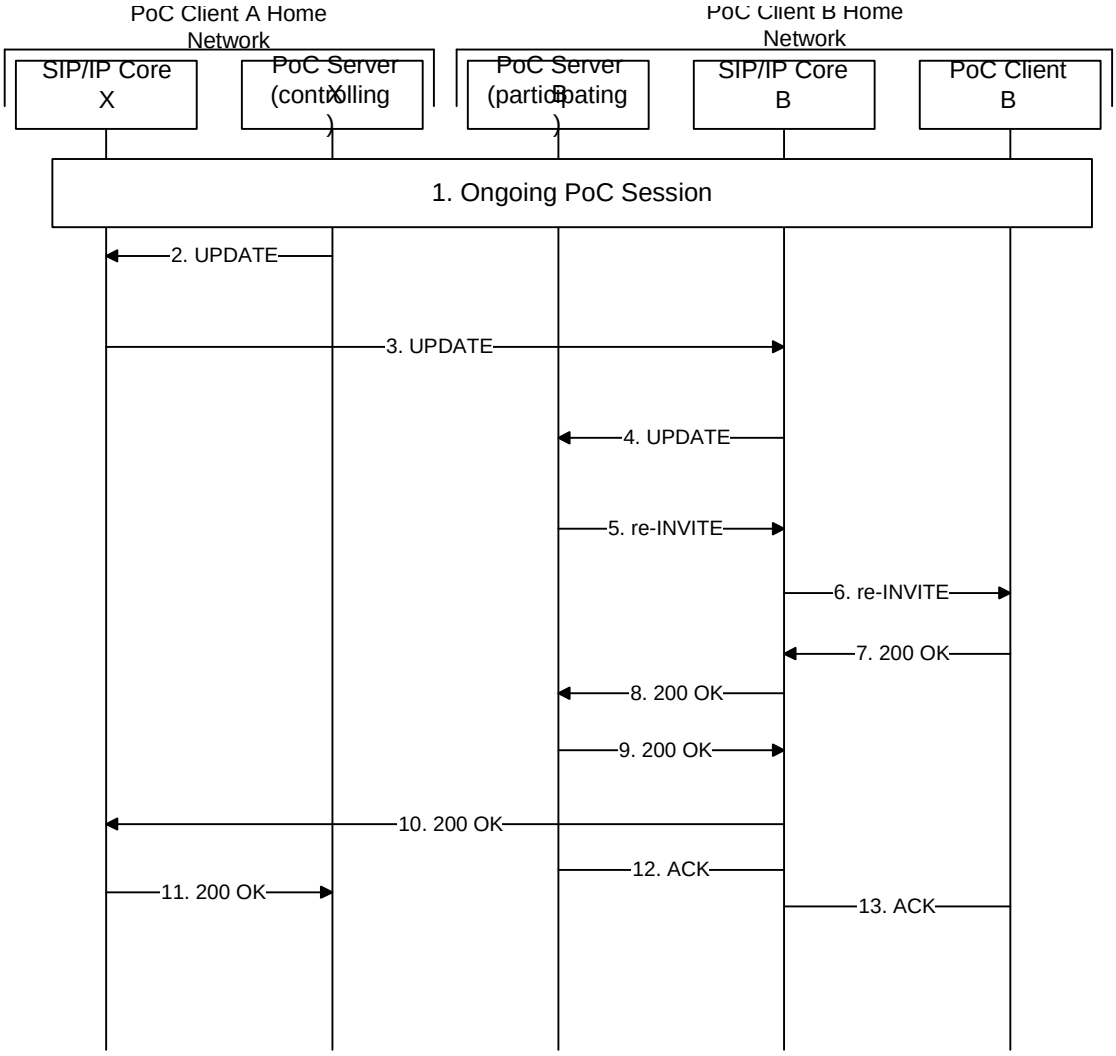

Figure 21: PoC Session modifications

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)

The SIP/IP Core X forwards the SIP UPDATE request to the SIP/IP Core B.

4. SIP UPDATE request (from SIP/IP Core B to PoC Server B)

The SIP/IP Core B forwards the SIP UPDATE request to the PoC Server B.

5. SIP re-INVITE request (from PoC Server B to SIP/IP Core B)

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The PoC Server B sends a SIP re-INVITE request to the SIP/IP Core B.

6. SIP re-INVITE request (from SIP/IP Core B to PoC Client B)

The SIP/IP Core B forwards the SIP re-INVITE request to the PoC Client B.

7. SIP 200 “OK” response (from PoC Client B to SIP/IP Core B)

The PoC Client B acknowledge the SIP re-INVITE request with a SIP 200 “OK” response to the SIP/IP Core B.

8. SIP 200 “OK” response (from SIP/IP Core B to PoC Server B)

The SIP/IP Core B forwards the SIP 200 "OK" response to PoC Server B.

9. SIP 200 “OK” response (from PoC Server B to SIP/IP Core B)

The PoC Server B forwards the SIP 200 "OK" response to SIP/IP Core B.

10. SIP 200 “OK” response (from SIP/IP Core B to SIP/IP Core X)

The SIP/IP Core B forwards the SIP 200 "OK" response to SIP/IP Core X.

11. SIP 200 “OK” response (from SIP/IP Core X to PoC Server X)

The SIP/IP Core X forwards the SIP 200 "OK" response to PoC Server X.

12. SIP ACK request (from PoC Server B to SIP/IP Core B)

The PoC Server B acknowledges the SIP 200 "OK" response with a SIP ACK request sent to the SIP/IP Core B.

13. SIP ACK request (from SIP/IP Core B to PoC Client B)

The SIP/IP Core B forwards the SIP ACK request 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.

In this example the PoC Server A acts as a proxy according to [RFC3261] and is not allowed to change the value of the headers User-Agent and Server, as specified in [RFC3428].

The flow is as shown in Figure 22 *"PoC Client A sends an Instant Personal Alert to PoC Client B"*.

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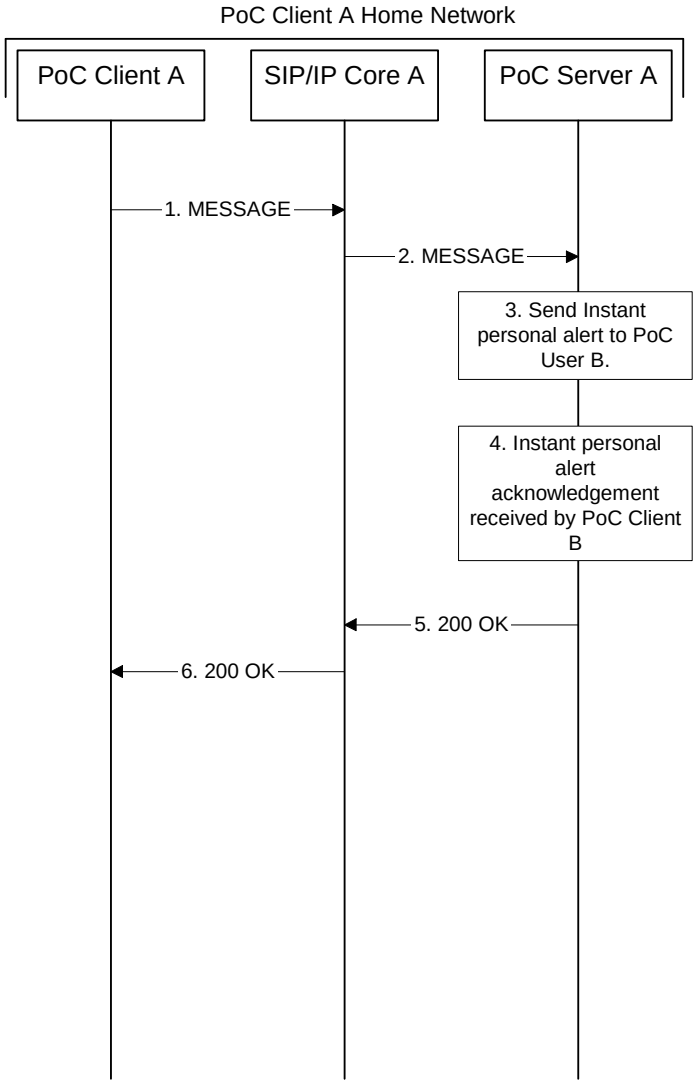

NOTE: Authorization of the Instant Personal Alert in the PoC Server A is optional and included in the Figure for completeness.

Figure 22: PoC Client A sends an Instant Personal Alert to PoC Client B

The steps of the flows are as follows:

1. SIP MESSAGE request (from PoC Client A to SIP/IP Core A)

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 PoC 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>

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Accept-Contact: *;+g.poc.talkburst; require;explicit

User-Agent: PoC-client/OMA1.0 Acme-Talk5000/v1.01

2. SIP MESSAGE request (from SIP/IP Core A to PoC Server A)

The SIP/IP Core A sends the SIP MESSAGE request to the PoC Server A based on the PoC 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 Sending of Instant Personal Alert (from PoC Server A to PoC Client B Network)

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 Receival of Instant Personal Alert acknowledgement (from PoC Client B Network to PoC Server A)

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. SIP 200 “OK” response (from PoC Server A to SIP/IP Core A)

A SIP 200 "OK" response is sent by the PoC Server A to SIP/IP Core A. The PoC server A forwards the value of the Server header received from PoC Client B Network.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ClientB@networkB.net>

Server: PoC-client/OMA1.0 Acme-Talk5000/v1.01

6. SIP 200 “OK” response (from SIP/IP Core A to PoC Client A)

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-client/OMA1.0 Acme-Talk5000/v1.01

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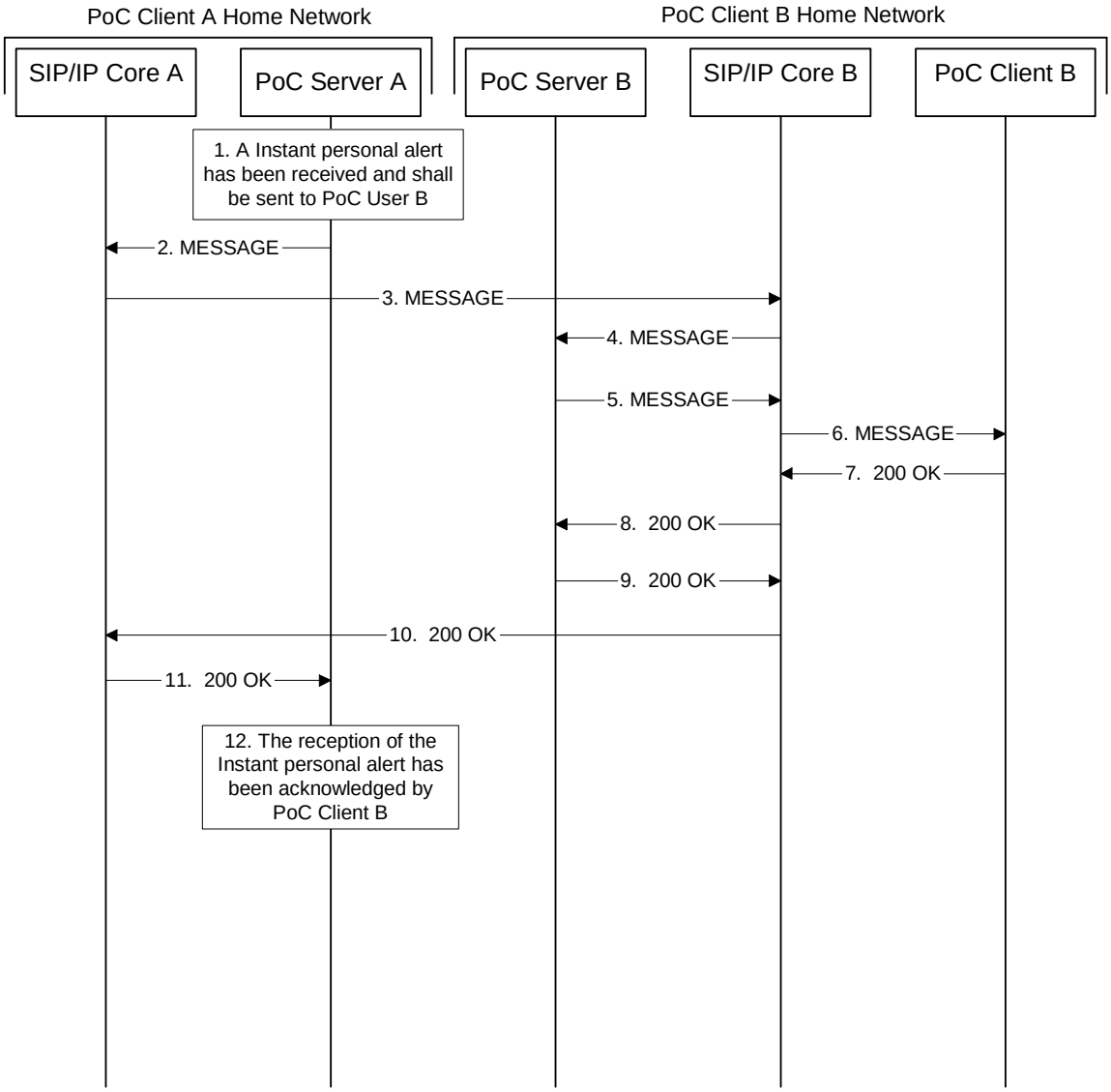
F.13.2 Terminating flow

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.

In this example the PoC Server B acts as a proxy according to [RFC3261] and is not allowed to change the value of the headers User-Agent and Server, as specified in [RFC3428].

The flow is as shown in Figure 23 *"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 23: PoC Client B receives an Instant Personal Alert from PoC Client A

The steps of the flows are as follows:

1. The receiving and sending of Instant Personal Alert

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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. **SIP MESSAGE request (from PoC Server A to SIP/IP Core A)**

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 PoC 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-client/OMA1.0 Acme-Talk5000/v1.01

3. **SIP MESSAGE request (from SIP/IP Core A to SIP/IP Core B)**

The SIP/IP Core A 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-client/OMA1.0 Acme-Talk5000/v1.01

4. **SIP MESSAGE request (from SIP/IP Core B to PoC Server B)**

The SIP/IP Core B sends the SIP MESSAGE request to the PoC Server B based on the PoC 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-client/OMA1.0 Acme-Talk5000/v1.01

5. **SIP MESSAGE request (from PoC Server B to SIP/IP Core B)**

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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-client/OMA1.0 Acme-Talk5000/v1.01

6. SIP MESSAGE request (from SIP/IP Core B to PoC Client B)

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-client/OMA1.0 Acme-Talk5000/v1.01

7. SIP 200 “OK” response (from PoC Client B to SIP/IP Core B)

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 200 “OK” response (from SIP/IP Core B to PoC Server B)

The SIP/IP Core B forwards the SIP 200 "OK" response to the PoC Server B.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ClientB@networkB.net>

Server: PoC-client/OMA1.0 Acme-Talk5000/v1.01

9. SIP 200 “OK” response (from PoC Server B to SIP/IP Core B)

The PoC Server B forwards the SIP 200 "OK" response to the SIP/IP Core B.

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SIP HEADERS

P-Asserted-Identity: <sip:PoC-ClientB@networkB.net>

Server: PoC-client/OMA1.0 Acme-Talk5000/v1.01

10. SIP 200 “OK” response (from SIP/IP Core B to SIP/IP Core A)

The SIP/IP Core B forwards the SIP 200 "OK" response to the SIP/IP Core A.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ClientB@networkB.net>

Server: PoC-client/OMA1.0 Acme-Talk5000/v1.01

11. “OK” response (from SIP/IP Core A to PoC Server A)

The SIP/IP Core A forwards the SIP 200 "OK" response to the PoC Server A.

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ClientB@networkB.net>

Server: PoC-client/OMA1.0 Acme-Talk5000/v1.01

12. The sending of the acknowledgement (from PoC Server A to PoC Client A)

The PoC Server A sends the acknowledgment to the PoC Client A as shown in Figure 22 "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 24 *"A Participant at the PoC Client A subscribes to event information"*.

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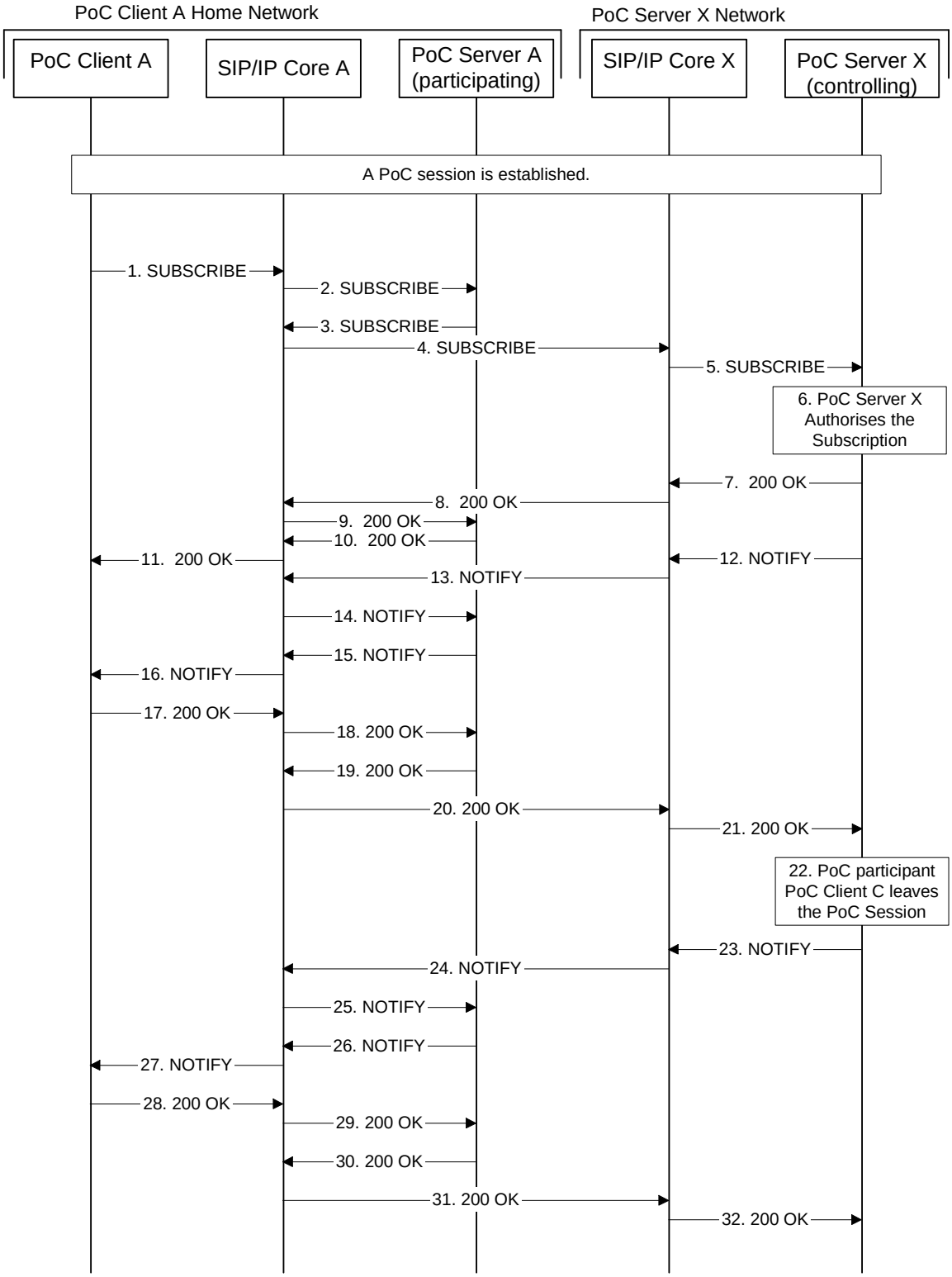

Figure 24: A Participant at the PoC Client A subscribes to event information

The steps of the flows are as follows:

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1. **SIP SUBSCRIBE request (from PoC Client A to SIP/IP Core A)**

   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 PoC 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. **SIP SUBSCRIBE request (from SIP/IP Core A to PoC Server A)**

   The SIP/IP Core A sends the SIP SUBSCRIBE request to the PoC Server A performing the Particpating PoC Function based on the PoC 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. **SIP SUBSCRIBE request (from PoC Server A to SIP/IP Core A)**

   The PoC Server A performing the Particpating PoC Function does not recognise the PoC Group Identity as its own and sends the SIP SUBSCRIBE request to the SIP/IP Core A.

Request-URI	sip:OMA-Golf-buddies@networkX.net

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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. SIP SUBSCRIBE request (from SIP/IP Core A to SIP/IP Core X)

The SIP/IP Core A 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. SIP SUBSCRIBE request (from SIP/IP Core X to PoC Server X)

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 PoC 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-serv/OMA1.0
Accept-Contact:	*;+g.poc.talkburst; require;explicit

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Contact: <sip:PoC-ServerA@networkA.net>

Event: conference

Subscription-State: active;expires=3600

6. **The authorization (PoC Server X)**

   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. **SIP 200 “OK” response (from PoC Server X to SIP/IP Core X)**

   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

Supported: norefersub

8. **SIP 200 “OK” response (from SIP/IP Core X to SIP/IP Core A)**

   The SIP/IP Core X forwards the SIP 200 "OK" response to the SIP/IP Core A

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerX@networkX.net>

Server: PoC-serv/OMA1.0

Supported: norefersub

9. **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 the PoC Server A

SIP HEADERS

P-Asserted-Identity: <sip:PoC-ServerX@networkX.net>

Server: PoC-serv/OMA1.0

Supported: norefersub

10. **SIP 200 “OK” response (from PoC Server A to SIP/IP Core A)**

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The PoC Server A forwards the SIP 200 "OK" response to the SIP/IP Core A

SIP HEADERS

P-Asserted-Identity:	<sip:PoC-ServerX@networkX.net>
Server:	PoC-serv/OMA1.0
Supported:	norefersub

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 the PoC Client A

SIP HEADERS

P-Asserted-Identity:	<sip:PoC-ServerX@networkX.net>
Server:	PoC-serv/OMA1.0
Supported:	norefersub

12 SIP NOTIFY request (from PoC Server X to SIP/IP Core X)

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 state event package) in a SIP NOTIFY request to the 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-info xmlns="urn:ietf:params:xml:ns:conference-
info"

      xmlns:xsi="http://www.w3.org/2001/XMLSchema-
```

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instance"

xsi:schemaLocation="urn:ietf:params:xml:ns: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>

</endpoint>

</user>

-<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>

</endpoint>

</user>

-<user entity="sip: anonymous3@anonymous.invalid" state="full">

-<display-text>Anonymous User</display-text>

-<endpoint entity="sip: anonymous3@anonymous.invalid">

-<status>connected</status>

</endpoint>

</user>

</users>

</conference-info>

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13. SIP NOTIFY request (from SIP/IP Core X to SIP/IP Core A)

The 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-info 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"

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>

</endpoint>

 </user>
```

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-<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>

</endpoint>

</user>

-<user entity="sip: anonymous3@anonymous.invalid" state="full">

-<display-text>Anonymous User</display-text>

-<endpoint entity="sip: anonymous3@anonymous.invalid">

-<status>connected</status>

</endpoint>

</user>

</users>

</conference-info>

14. **SIP NOTIFY request (from SIP/IP Core A to PoC Server A)**

The SIP/IP Core A forwards the SIP NOTIFY request to the 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-info xmlns="urn:ietf:params:xml:ns:conference-

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```
info"

      xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"

      xsi:schemaLocation="urn:ietf:params:xml:ns: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>

</endpoint>

 </user>


-<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>

</endpoint>

 </user>


-<user entity="sip: anonymous3@anonymous.invalid"
state="full">

-<display-text>Anonymous User</display-text>

-<endpoint entity="sip: anonymous3@anonymous.invalid">

-<status>connected</status>

</endpoint>

 </user>


</users>
```


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</conference-info>

15. **SIP NOTIFY request (from PoC Server A to SIP/IP Core A)**

The PoC Server A forwards the SIP NOTIFY request to the 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-info 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"

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>

</endpoint>

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```
 </user>

-<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>
</endpoint>
 </user>

-<user entity="sip: anonymous3@anonymous.invalid"
state="full">
-<display-text>Anonymous User</display-text>
-<endpoint entity="sip: anonymous3@anonymous.invalid">
-<status>connected</status>
</endpoint>
 </user>

</users>
</conference-info>
```

16. **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	
Contact	<sip:PoC-ServerA@networkA.net >
Event:	conference
Content-Type:	application/conference-info+xml
Subscription-State:	active;expires=3600
XML MIME BODY	

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```
<?xml version="1.0" encoding="UTF-8"?>

  <conference-info 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"

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>

</endpoint>

 </user>

-<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>

</endpoint>

 </user>

-<user entity="sip: anonymous3@anonymous.invalid"
state="full">

-<display-text>Anonymous User</display-text>

-<endpoint entity="sip: anonymous3@anonymous.invalid">

-<status>connected</status>

</endpoint>
```


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```
</user>

</users>
</conference-info>
```

17. **SIP 200 “OK” response (from PoC Client A to SIP/IP Core A)**

The PoC Client A sends the SIP 200 "OK" response to the SIP NOTIFY request to the SIP/IP Core A.

18. **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 the PoC Server A.

19. **SIP 200 “OK” response (from PoC Server A to SIP/IP Core A)**

The PoC Server A forwards the SIP 200 "OK" response to the SIP/IP Core A.

20. **SIP 200 “OK” response (from SIP/IP Core A to SIP/IP Core X)**

The SIP/IP Core A forwards the SIP 200 "OK" response to the SIP/IP Core X.

21. **SIP 200 “OK” response (from SIP/IP Core X to PoC Server X)**

The SIP/IP Core X forwards the SIP 200 "OK" response to the PoC Server X.

NOTE: The steps 22-32 only happen if the subscription is active.

22**. The Participant PoC Client C leaves the PoC Session**.

23. **SIP NOTIFY request (from PoC Server X to SIP/IP Core X)**

The PoC Server X performing the Controlling PoC Function sends a SIP NOTIFY request to the SIP/IP Core X. This time only information about the Participant leaving the PoC Session is sent (referred to by the conference state 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

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Subscription-State: active;expires=3600

XML MIME BODY


```
<?xml version="1.0" encoding="UTF-8"?>

  <conference-info 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"

entity=

"sip：OMA-Golf-buddies@networkX.net "  state="partial" version="1">

<users state="partial">

<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>

</endpoint>

 </user>

</users>

</conference-info>
```


24. **SIP NOTIFY request (from SIP/IP Core X to SIP/IP Core A)**

The SIP/IP Core X forwards the SIP NOTIFY request to the SIP/IP Core A.

Request-URI sip:PoC-ServerA@networkA.net

SIP HEADERS

Contact <sip:PoC-ServerX@networkX.net >

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Event: conference

Content-Type: application/conference-info+xml

Subscription-State: active;expires=3600

XML MIME BODY


```
<?xml version="1.0" encoding="UTF-8"?>

  <conference-info 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"

entity=
"sip：OMA-Golf-buddies@networkX.net "  state="partial" version="1">
<users state="partial">
<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>
</endpoint>

 </user>
</users>
</conference-info>
```


25. **SIP NOTIFY request (from SIP/IP Core A to PoC Server A)**

The SIP/IP Core A forwards the SIP NOTIFY request to the PoC Server A.

Request-URI sip:PoC-ServerA@networkA.net

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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-info 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"


entity=

"sip：OMA-Golf-buddies@networkX.net ＂  state="partial"
version="1">

<users state="partial">

<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>

</endpoint>


 </user>

</users>

</conference-info>
```

26. **SIP NOTIFY request (from PoC Server A to SIP/IP Core A)**

The PoC Server A forwards the SIP NOTIFY request to the SIP/IP Core A.

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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-info 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"

entity=

"sip：OMA-Golf-buddies@networkX.net "  state="partial"
version="1">

<users state="partial">

<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>

</endpoint>

</user>

</users>

</conference-info>
```

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27. **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

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-info 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"

entity=

"sip：OMA-Golf-buddies@networkX.net ＂  state="partial"
version="1">

<users state="partial">

<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>

</endpoint>

 </user>
```

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```
</users>
</conference-info>
```

28. **SIP 200 “OK” response (from PoC Client A to SIP/IP Core A)**

The PoC Client A sends the SIP 200 "OK" response to the SIP NOTIFY request to the SIP/IP Core A.

29. **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 the PoC Server A.

30. **SIP 200 “OK” response (from PoC Server A to SIP/IP Core A)**

The PoC Server A forwards the SIP 200 "OK" response to the SIP/IP Core A.

31. **SIP 200 “OK” response (from SIP/IP Core A to SIP/IP Core X)**

The SIP/IP Core A forwards the SIP 200 "OK" response to the SIP/IP Core X.

32. **SIP 200 “OK” response (from SIP/IP Core X to PoC Server X)**

The SIP/IP Core X forwards the SIP 200 "OK" response to the 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.

In this example the PoC Server A acts as proxy according to [RFC3261] and is not allowed to change the value of the headers User-Agent and Server, as specified in [RFC3428].

The flow is as shown in Figure 25 *"PoC Client A sends a Group Advertisement to a PoC Group"*.

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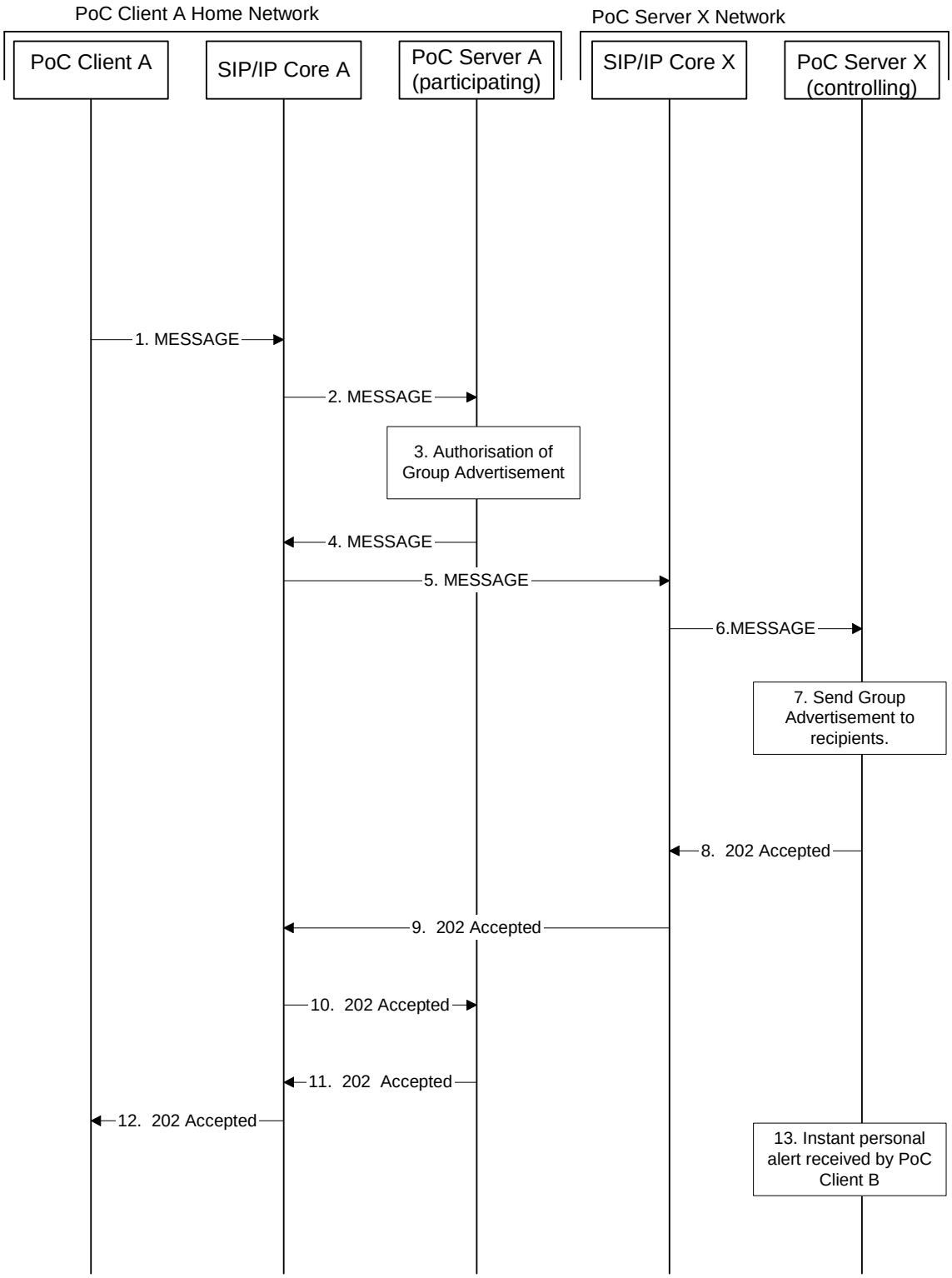

Figure 25: PoC Client A sends a Group Advertisement to a PoC Group

The steps of the flows are as follows:

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1. SIP MESSAGE request (from PoC Client A to SIP/IP Core A)

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 PoC 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.group-advertisement+xml

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>

<group-advertisement
    xmlns="urn:oma:xml:poc:group-advertisement"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="urn:oma:xml: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. **SIP MESSAGE request (from SIP/IP Core A to PoC Server A)**

The SIP/IP Core A forwards the SIP MESSAGE request to the PoC Server A based on the PoC feature tag '+g.poc.groupad' in the Accept-Contact header.

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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.group-advertisement+xml

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>

<group-advertisement
    xmlns="urn:oma:xml:poc:group-advertisement"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="urn:oma:xml: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 authorization (PoC Server A)

The PoC Server A authorizes the PoC User A at the PoC Client A to send a Group Advertisement.

4. **MESSAGE request (from PoC Server A to SIP/IP Core A)**

The PoC Server A forwards the SIP MESSAGE request to SIP/IP Core A.

Request-URI sip:OMA-Golf-buddies@networkX.net

SIP HEADERS

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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.group-advertisement+xml

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>

<group-advertisement
    xmlns="urn:oma:xml:poc:group-advertisement"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="urn:oma:xml: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. **SIP MESSAGE request (from SIP/IP Core A to SIP/IP Core X)**

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.group-advertisement+xml

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XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>

<group-advertisement
    xmlns="urn:oma:xml:poc:group-advertisement"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="urn:oma:xml: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. **SIP MESSAGE request (from SIP/IP Core X to PoC Server X)**

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.group-advertisement+xml

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>

<group-advertisement
    xmlns="urn:oma:xml:poc:group-advertisement"
```

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```
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="urn:oma:xml: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 sending of the Group Advertisement (PoC Server X)**

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. **SIP 202 "Accepted" response (from PoC Server X to SIP/IP Core X)**

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 202 "Accepted" response (from SIP/IP Core X to SIP/IP Core A)**

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 202 "Accepted" response (from SIP/IP Core A to PoC Server A)**

SIP/IP Core A forwards the SIP 202 "Accepted" response to PoC Server A.

SIP HEADERS

P-Asserted-Identity:	<sip:PoC-ServerX@networkX.net>

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Server: PoC-serv/OMA1.0

11. **SIP 202 “Accepted” response (from PoC Server A to SIP/IP Core A)**

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 202 “Accepted” response (from SIP/IP Core A to PoC Client A)**

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 receival of an acknowledgment (from PoC Client B Network to PoC Server X)**

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.

In this example the PoC Server B acts as proxy according to [RFC3261] and is not allowed to change the value of the headers User-Agent and Server, as specified in [RFC3428].

The flow is as shown in Figure 26 *"PoC Client B receives a Group Advertisement from PoC Client A"*.

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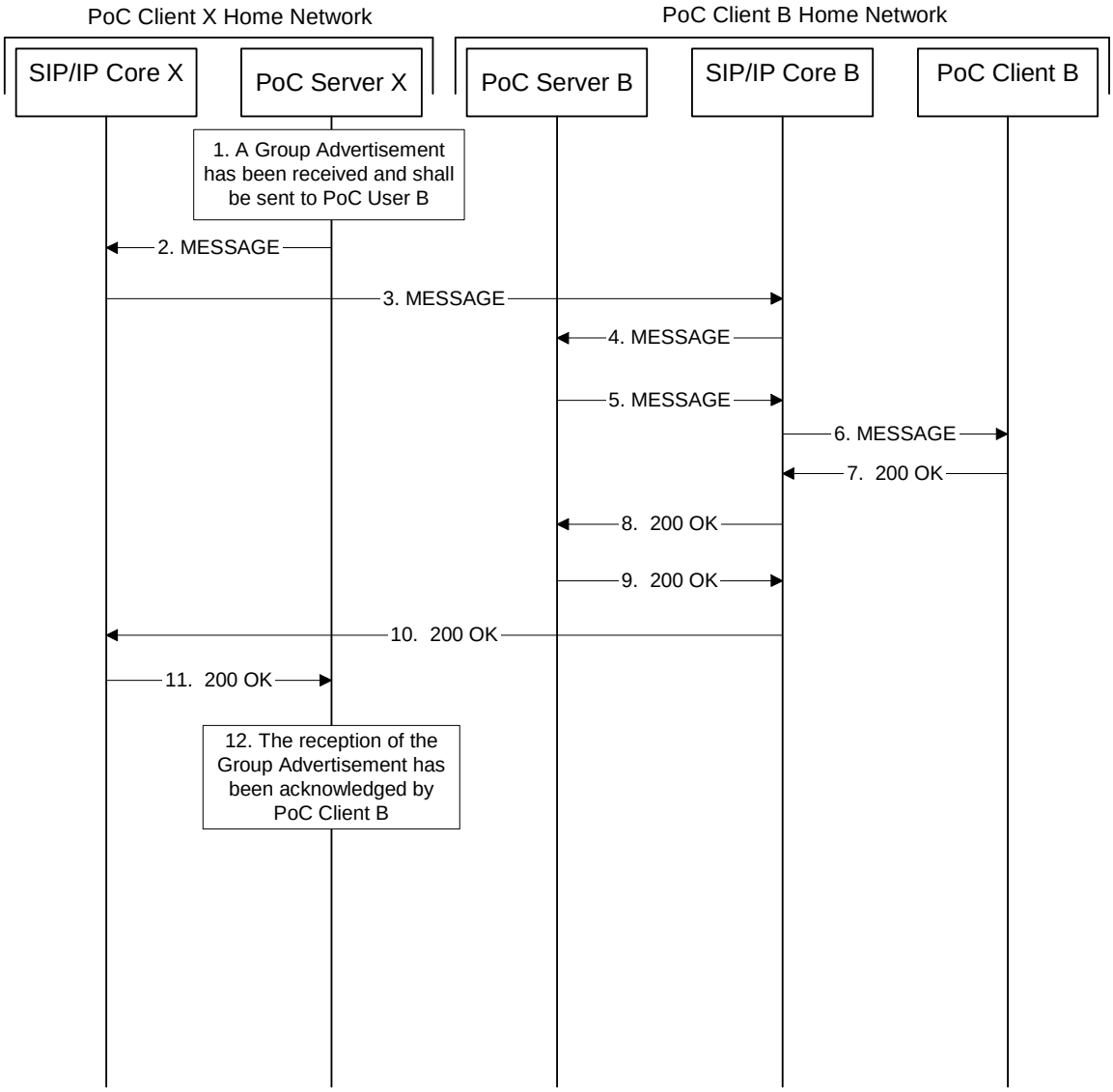

Figure 26: PoC Client B receives a Group Advertisement from PoC Client A

The steps of the flows are as follows:

1. **The receival of a Group Advertisement (PoC Server X)**

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. **SIP MESSAGE request (from PoC Server X to SIP/IP Core X)**

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 PoC feature tag '+g.poc.groupad'.

Request-URI sip:PoC-UserB@networkB.net

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SIP HEADERS

P-Asserted-Identity: "PoC User A" <sip:PoC-UserA@networkA.net>

Accept-Contact: *;+g.poc.groupad; require;explicit

User-Agent: PoC-serv/OMA1.0

Content-Type: application/vnd.poc.group-advertisement+xml

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>

<group-advertisement
    xmlns="urn:oma:xml:poc:group-advertisement"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="urn:oma:xml: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. **SIP MESSAGE request (from SIP/IP Core X to SIP/IP Core B)**

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/OMA1.0

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Content-Type: application/vnd.poc.group-advertisement+xml

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>

<group-advertisement
    xmlns="urn:oma:xml:poc:group-advertisement"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="urn:oma:xml: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. **SIP MESSAGE request (from SIP/IP Core B to PoC Server B)**

The SIP/IP Core B sends the SIP MESSAGE request to the PoC Server B based on the PoC 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/OMA1.0

Content-Type: application/vnd.poc.group-advertisement+xml

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>
```

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```
<group-advertisement
    xmlns="urn:oma:xml:poc:group-advertisement"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="urn:oma:xml: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. **SIP MESSAGE request (from PoC Server B to SIP/IP Core B)**

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/OMA1.0
Content-Type:	application/vnd.poc.group-advertisement+xml

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>

<group-advertisement
    xmlns="urn:oma:xml:poc:group-advertisement"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="urn:oma:xml:poc:group-
advertisement">
```

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```
    <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. **SIP MESSAGE request (from SIP/IP Core B to PoC Client B)**

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/OMA1.0

Content-Type: application/vnd.poc.group-advertisement+xml

XML MIME BODY

```
<?xml version="1.0" encoding="UTF-8"?>

<group-advertisement
    xmlns="urn:oma:xml:poc:group-advertisement"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="urn:oma:xmls: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>
```

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```
</group>
</group-advertisement>
```

7. **SIP 200 “OK” response (from PoC Client B to SIP/IP Core B)**

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 200 “OK” response (from SIP/IP Core B to PoC Server B)**

The 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. **SIP 200 “OK” response (from PoC Server B to SIP/IP Core B)**

The 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-client/OMA1.0 Acme-Talk5000/v1.01

10. . **SIP 200 “OK” response (from SIP/IP Core B to SIP/IP Core X)**

The 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-client/OMA1.0 Acme-Talk5000/v1.01

11. **SIP 200 “OK” response (from SIP/IP Core to PoC Server X)**

The SIP/IP Core X forwards the SIP 200 "OK" response to PoC Server X.

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SIP HEADERS

P-Asserted-Identity: "PoC User B" <sip:PoC-ClientB@networkB.net>

Server: PoC-client/OMA1.0 Acme-Talk5000/v1.01

12. **The sending of the acknowledgement (PoC Server X to PoC Client A)**

The PoC Server X sends the acknowledgment to the PoC Client A as shown in Figure 25 *"PoC Client A sends a Group Advertisement to a PoC Group*".

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Appendix G. Change History (Informative)

G.1 Approved Version History

Reference	Date	Description
OMA-TS-PoC-ControlPlane-V1_0-20060609-A	09 Jun 2006	Status changed to Approved by TP: OMA-TP-2006-0201R02-ERP_PoCv1_0_for_Final_Approval
OMA-TS-PoC_ControlPlane-V1_0_1-20061128-A	28 Nov2006	Includes agreed CRs: OMA-POC-POCv1-2006-0117 OMA-POC-POCv1-2006-0126 OMA-POC-POCv1-2006-0127R01 OMA-POC-POCv1-2006-0128R01 OMA-POC-POCv1-2006-0131 OMA-POC-POCv1-2006-0136R02 OMA-POC-POCv1-2006-0138R05 OMA-POC-POCv1-2006-0139R01 OMA-POC-POCv1-2006-0140 OMA-POC-POCv1-2006-0141 OMA-POC-POCv1-2006-0145 OMA-POC-POCv1-2006-0148 OMA-POC-POCv1-2006-0149 OMA-POC-POCv1-2006-0161 OMA-POC-POCv1-2006-0163R01 OMA-POC-POCv1-2006-0164 OMA-POC-POCv1-2006-0165R02 OMA-POC-POCv1-2006-0166
OMA-TS-PoC_ControlPlane-V1_0_2-20070905-A	05 Sep 2007	Inclusion of CRs: OMA-POC-POCv1-2006-0053R02 OMA-POC-POCv1-2006-0151 OMA-POC-POCv1-2006-0174R01 OMA-POC-POCv1-2006-0175 OMA-POC-POCv1-2006-0176 OMA-POC-POCv1-2006-0180 OMA-POC-POCv1-2006-0181 OMA-POC-POCv1-2007-0004R02 OMA-POC-POCv1-2007-0005 OMA-POC-POCv1-2007-0015 OMA-POC-POCv1-2007-0017 OMA-POC-POCv1-2007-0021 OMA-POC-POCv1-2007-0024R02 OMA-POC-POCv1-2007-0036 OMA-POC-POCv1-2007-0040 OMA-POC-POCv1-2007-0041 OMA-POC-POCv1-2007-0044 OMA-POC-POCv1-2007-0045R01 OMA-POC-POCv1-2007-0048R01 OMA-POC-POCv1-2007-0052 OMA-POC-POCv1-2007-0055R01 OMA-POC-POCv1-2007-0056 OMA-POC-POCv1-2007-0063 OMA-POC-POCv1-2007-0066R03 OMA-POC-POCv1-2007-0069R01 OMA-POC-POCv1-2007-0073 Editorial changes to References section. Editorial clean-up of styles and formatting. Editorial changes to two internal references to section 6.1.1.2.
OMA-TS-PoC_ControlPlane-V1_0_3-20090720-D	20 Jul 2009	Inclusion of CRs: OMA-POC-POCv1-2007-0076R01 OMA-POC-POCv1-2008-0001R03 OMA-POC-POCv1-2008-0002R01

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Reference	Date	Description
		OMA-POC-POCv1-2008-0003R01 OMA-POC-POCv1-2008-0004R02 OMA-POC-POCv1-2008-0005R01 OMA-POC-POCv1-2008-0007 OMA-POC-POCv1-2008-0008R01 OMA-POC-POCv1-2008-0014 OMA-POC-POCv1-2008-0015 OMA-POC-POCv1-2008-0017 OMA-POC-POCv1-2009-0001
OMA-TS-PoC_ControlPlane-V1_0_3-20090907-D	07 Sep 2009	Updated 20 Jul 2009 history box row after re-classification of applied CRs: OMA-POC-POCv1-2008-0001R02 became OMA-POC-POCv1-2008-0001R03 OMA-POC-POCv1-2008-0002 became OMA-POC-POCv1-2008-0002R01
OMA-TS-PoC_ControlPlane-V1_0_3-20090922-A	22 Sep 2009	Notified to TP: OMA-TP-2009-0396R01-INP_POCv1_0_3_for_notification

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