Push-to-talk over Cellular (PoC) service allows cell phones to be used as walkie-talkies. A group of users in a PoC session can communicate by simply pressing a button and speaking when the phone indicates it is OK to do so. The user releases the button when he or she is done speaking.

When a user begins to speak, the PoC server allocates resources and notifies other users in the PoC session that the user is speaking. The PoC server then delivers the speech packets to all the users in the session.

PoC is resource efficient as it allocates resources only when a user is actually speaking. This makes it suitable for applications where there are long gaps between individual session participants speaking.

This flows covers the case where PoC Client A invites PoC Client B to a Pre-established Session by sending SIP REFER request to PoC Server A.

The IMS Core A forwards the REFER to Participating and Controlling PoC server A.

The PoC Server A indicates that it has received the SIP REFER request by sending a SIP 202 Accepted response.

The PoC Server A invites the PoC Client B, who is indicated in the Refer-To header of the received SIP REFER request.

The PoC Client A acknowledges the NOTIFY with 200 OK towards PoC Server A.

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 IMS Core B. The SIP 200 (OK) response is sent along the signaling 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 Media Burst Control Protocol.
Media Burst Control Protocol (MBCP) Session Setup using RTCP Port

ACK
NOTIFY

200 (OK)

The PoC Server A sends a SIP NOTIFY request via the IMS Core A towards the PoC Client A to inform about the progress of the session request.

The PoC Client A acknowledges the NOTIFY with 200 OK towards PoC Server A.

MBCP Connect message
protocol = RTCP APP

The PoC Server A sends the MBCP Connect message to the PoC Client A and informs the PoC session identity.

MBCP Media Burst Acknowledgement
protocol = RTCP APP

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

allocate
PoC Floor

Talk Burst from PoC Client A to B

MBCP Media Burst Granted
protocol = RTCP APP

MBCP Media Burst Taken

protocol = RTCP APP
Granted SSRC = PoC Client A

RTP Media

RTP Media

RTP Media

RTP Media

The PoC Client A sends the RTP Media to the PoC Client B via PoC Server A and PoC Server B.

MBCP Media Burst Release
protocol = RTCP APP

The controlling PoC server allocates the floor to PoC Client A.

MBCP Media Burst Idle
protocol = RTCP APP

Free PoC Floor

MBCP Media Burst Idle

Talk Burst from PoC Client B to A

MBCP Media Burst Request
protocol = RTCP APP

allocate
PoC Floor

Request the floor for the session.

The controlling PoC server allocates the floor to PoC Client B.
The floor is granted.

The PoC Client B sends the RTP Media to the PoC Client A via PoC Server B and PoC Server A.

The burst release is passed to the controlling PoC Server (PoC Server A).

The controlling PoC server free the floor as PoC Client B relinquishes the floor.

PoC Server A informs all users in the PoC session that the floor is available for another user to speak.