Push-to-talk over Cellular (PoC) service allows cell phones to 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.
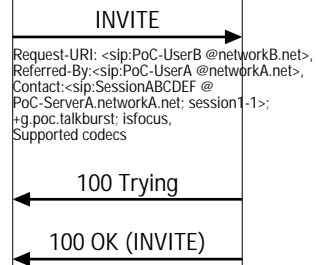
IMS Registration and PoC Session Pre-establishment

IMS Registration and PoC Session Pre-establishment (Click here for details) — PoC Client B registers and pre-establishes the PoC session. Click on the action box to see details.

Invite Client B to a session with SIP REFER

PoC Server A invites PoC Client B

INVITE

Request-URI: <sip:PoC-UserB @networkB.net>,
Referred-By:<sip:PoC-UserA @networkA.net>,
Contact:<sip:SessionABCDEF @ PoC-ServerA.networkA.net; session1-1>;
+g.poc.talkburst; isfocus,
Supported codecs

The IMS Core B forwards the INVITE to PoC Server B.
The IMS Core A resolves the IMS Core B address of the PoC Client B and forwards the SIP INVITE request to the IMS Core B.

100 Trying

The PoC Server B responds to the SIP INVITE request with a SIP 100 Trying provisional response.

100 OK (INVITE)

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

MBCP Connect

protocol = RTCP APP
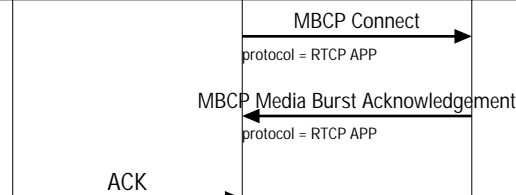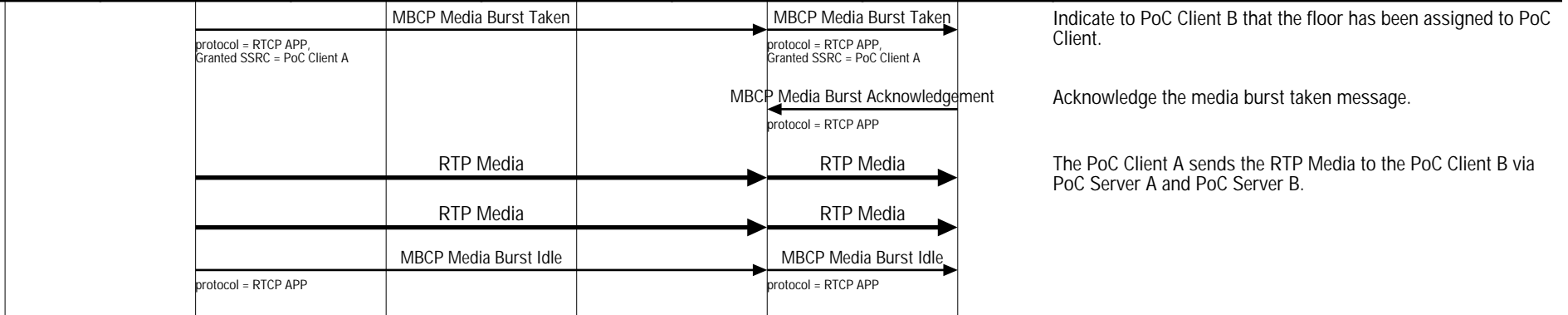
The PoC Server B sends the MBCP Connect to the PoC Client B. The message includes the PoC Session Identity.

MBCP Media Burst Acknowledgement

protocol = RTCP APP

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

ACK

Talk Burst from PoC Client A to B

PoC Server B Interfaces (IMS PoC Client Invitation)						
Wireless Network A	IMS				Wireless Network B	**EventStudio System Designer 4.0**
User Equipment A	IMS Network A		IMS Network B		User Equipment B	
PoC Client A	PoC Server A	IMS Core A	IMS Core B	PoC Server B	PoC Client B	29-Jun-08 11:31 (Page 2)

MBCP Media Burst Taken → MBCP Media Burst Taken
protocol = RTCP APP,
Granted SSRC = PoC Client A   protocol = RTCP APP,
Granted SSRC = PoC Client A

Indicate to PoC Client B that the floor has been assigned to PoC Client.

MBCP Media Burst Acknowledgement
protocol = RTCP APP

Acknowledge the media burst taken message.

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.

RTP Media → RTP Media →

MBCP Media Burst Idle → MBCP Media Burst Idle →
protocol = RTCP APP   protocol = RTCP APP

Talk Burst from PoC Client B to A

MBCP Media Burst Request ← MBCP Media Burst Request
protocol = RTCP APP   protocol = RTCP APP,
MB-Priority

Request the floor for the session.

MBCP Media Burst Granted ← MBCP Media Burst Granted
protocol = RTCP APP   protocol = RTCP APP

The floor is granted.

RTP Media ← RTP Media ←

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

RTP Media ← RTP Media ←

MBCP Media Burst Release ← MBCP Media Burst Release
protocol = RTCP APP   protocol = RTCP APP

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

MBCP Media Burst Idle → MBCP Media Burst Idle →
protocol = RTCP APP   protocol = RTCP APP