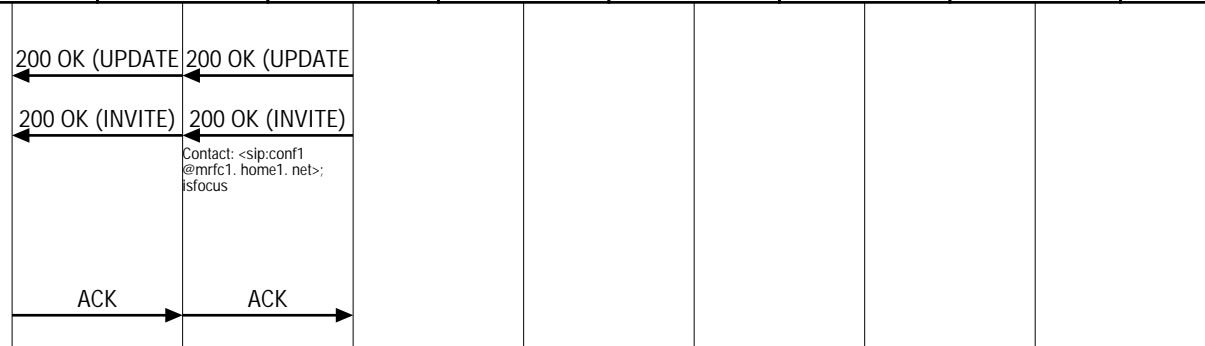| Initiating S-CSCF Interfaces (IMS Conference Call)									
Calling UE	IMS Network							Called UE	**EventStudio System Designer 4.0**
Caller User Equipment	IMS 1		IMS 1 MRF		IMS 2			Called User Equipment	
Conference Initiator	Initiating P-CSCF	Initiating S-CSCF	MRFC-AS	MRFP	Participating I-CSCF	Participating S-CSCF	Participating P-CSCF	Conference Participant	18-May-08 10:40 (Page 1)

This sequence diagram shows an IMS user creating a conference by using a conference-factory URI. The conference is created at a MRFC-AS of the users home network. The steps involved in the conference scenario covered here are:

(1) The conference initiator UE uses the conference factory URI to initiate a conference with the MRFC-AS (Multimedia Resource Function Control/Application Server).

(2) The MRFC-AS assigns a conference URI to the conference and configures the MRFP (Multimeda Resource Function Processor).

(3) The conference call is setup and the RTP data begins flowing between the conference initiating UE and the MRFP.

(4) The conference initiator then uses the refer procedure to add more users to the conference. The new users establish a call to the conference URI passed in the refer message.

(5) When the conference is in progress, RTP media streams are being mixed and propagated to all the participants.

(6) The conference user drops out of the conference. All users are notified for this exit from the conference.

Initiating an IMS conference using the Conference Factory URI

INVITE

...;
Via: <Calling UE IP> :Port, <Orig P-CSCF>,
Route: <S-CSCF address>,
Record-Route: <P-CSCF address>,
...

The P-CSCF forwards the INVITE request to the S-CSCF.

100 Trying

The S-CSCF responds to INVITE with 100 Trying.

INVITE

...;
Via: <Calling UE IP> :Port, <Orig P-CSCF>, <Orig S-CSCF>,
Record-Route: <P-CSCF address>, <S-CSCF address>,
...

The S-CSCF forwards the INVITE request to the MRFC-AS that is indicated in the host part of the Request URI.

100 Trying

The MRF responds to INVITE with 100 Trying.

183 Session Prog 183 Session Prog

The media stream capabilities of the MRFP are returned along the signalling path, in a 183 (Session Progress) provisional response.

PRACK   PRACK

The Conference Initiator UE determines which media flows should be used for this session, and which codecs should be used for each of those media flows. If there is any change, Conference Caller sends a new codec request in PRACK.

200 OK (PRACK) 200 OK (PRACK)

The MRFC-AS acknowledges the PRACK request with a 200 (OK) response.

UPDATE   UPDATE

When the resource reservation is completed, the Conference Initiator UE sends the UPDATE

| Initiating S-CSCF Interfaces (IMS Conference Call)									
Calling UE	IMS Network							Called UE	**EventStudio System Designer 4.0**
Caller User Equipment	IMS 1		IMS 1 MRF		IMS 2			Called User Equipment	
Conference Initiator	Initiating P-CSCF	Initiating S-CSCF	MRFC-AS	MRFP	Participating I-CSCF	Participating S-CSCF	Participating P-CSCF	Conference Participant	18-May-08 10:40 (Page 2)

request towards the MRFC-AS

200 OK (UPDATE | 200 OK (UPDATE

The MRFC-AS acknowledges the UPDATE with a 200 (OK) response.

200 OK (INVITE) | 200 OK (INVITE)

Contact: <sip:conf1 @mrfc1. home1. net>; isfocus

The MRFC-AS sends "200 OK" as a final response to INVITE request. MRFC creates a focus for the newly created conference, assigns it conference URI and returns it in Contact header. On receiving 200 (OK) with isfocus parameter, the Conference initiator stores the Contact header content as the conference URI.

ACK | ACK

The conference initiator responds to the "200 OK" with an ACK towards MRFC-AS.

User inviting another user to a conference by sending a REFER request
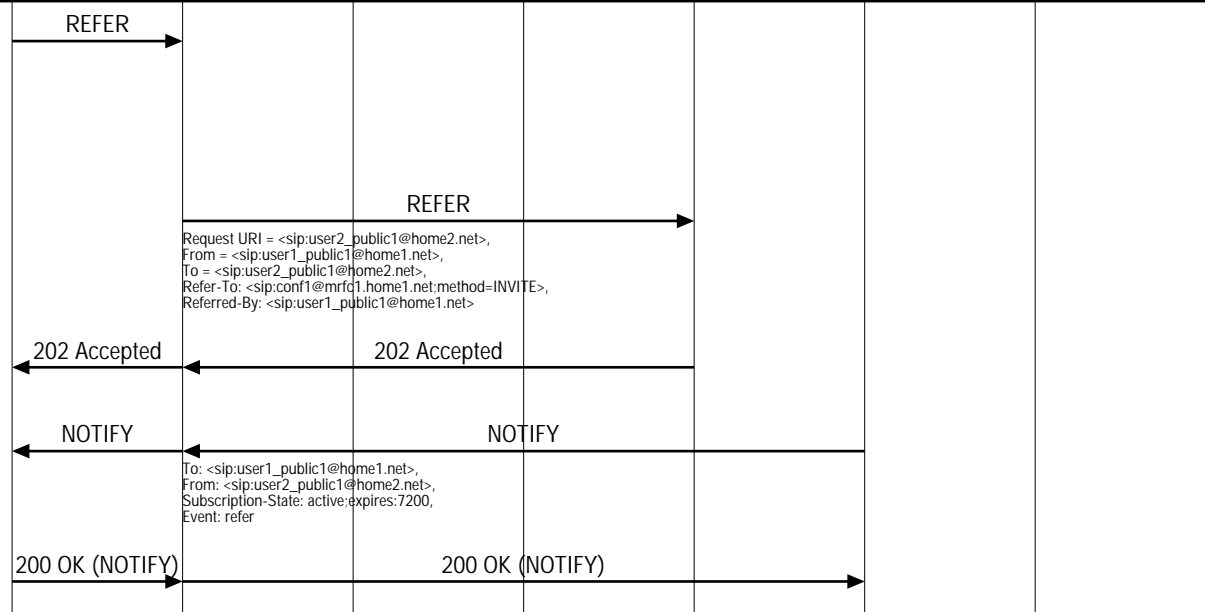
REFER

Conference Caller creates a conference and then sends REFER message with Refer-To containing the conference URI as learned during the conference establishment. Additionally the "method" uri parameter indicates that the other user is requested to send an INVITE request to this conference URI.

REFER

Request URI = <sip:user2_public1@home2.net>,
From = <sip:user1_public1@home1.net>,
To = <sip:user2_public1@home2.net>,
Refer-To: <sip:conf1@mrfc1.home1.net;method=INVITE>,
Referred-By: <sip:user1_public1@home1.net>

The originating S-CSCF performs an analysis of the destination address, determines the terminating I-CSCF and forwards the REFER message to it.
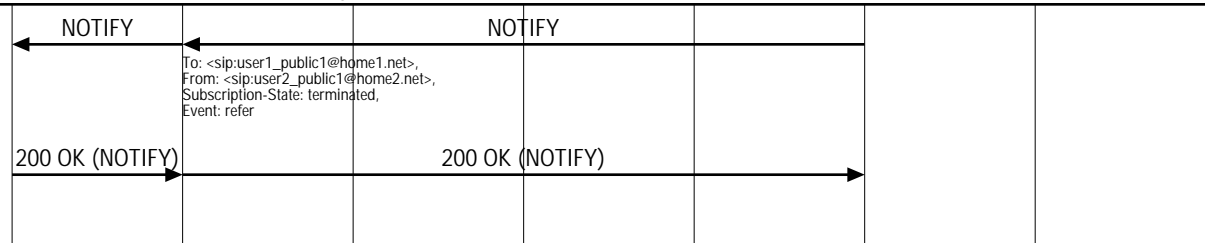
202 Accepted | 202 Accepted

The Called Conference Participant accepts the REFER request by sending a 202 (Accepted) response.

NOTIFY | NOTIFY

To: <sip:user1_public1@home1.net>,
From: <sip:user2_public1@home2.net>,
Subscription-State: active;expires:7200,
Event: refer

The NOTIFY message is sent to inform that the REFER message is being processed.

200 OK (NOTIFY) | 200 OK (NOTIFY)

The "200 OK" Acknowledges the NOTIFY message.

Called Conference Participant enters Conference

Notify Conference Initiator that the user has successfully entered the conference

NOTIFY | NOTIFY

To: <sip:user1_public1@home1.net>,
From: <sip:user2_public1@home2.net>,
Subscription-State: terminated,
Event: refer

200 OK (NOTIFY) | 200 OK (NOTIFY)

			IMS Network						Called UE	EventStudio System Designer 4.0
Calling UE										
Caller User Equipment	IMS 1		IMS 1 MRF		IMS 2			Called User Equipment		
Conference Initiator	Initiating P-CSCF	Initiating S-CSCF	MRFC-AS	MRFP	Participating I-CSCF	Participating S-CSCF	Participating P-CSCF	Conference Participant	18-May-08 10:40 (Page 3)

Initiating S-CSCF Interfaces (IMS Conference Call)

Conference in progress

Conference Caller leaving the Conference

NOTIFY ← NOTIFY

To: <sip:user1_public1@home1.net>,
From: <sip:conf1@mrfc1.home1.net>,
Subscription -State: terminated,
Event: conference,
Conference status information of all conference participants

200 OK (NOTIFY) → 200 OK (NOTIFY) →
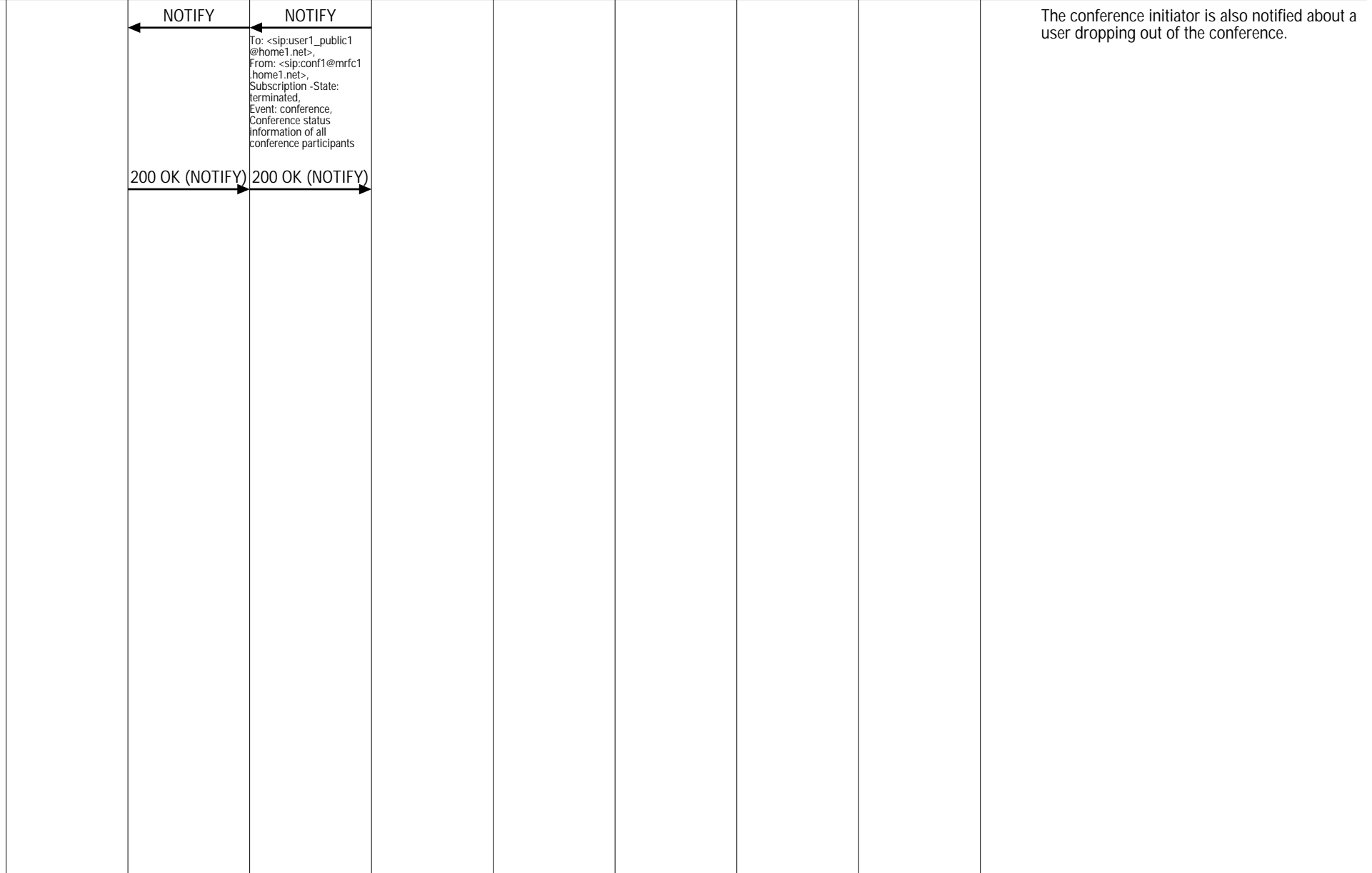
The conference initiator is also notified about a user dropping out of the conference.