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 (Multimedia 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>, <Orig S-CSCF>,
Route: <S-CSCF address>,
Record-Route: <P-CSCF address>,

100 Trying

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

100 Trying

183 Session Prog

PRACK

183 Session Prog

PRACK

200 OK (PRACK)

UPDATE

UPDATE
```

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

The S-CSCF responds to INVITE with 100 Trying.

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

The MRFP responds to INVITE with 100 Trying.

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

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.

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

When the resource reservation is completed, the Conference Initiator UE sends the UPDATE.
### Initiating S-CSCF Interfaces (IMS Conference Call)

#### Calling UE
- **Equipment**: Caller User Equipment
- **Interface**: Initiating P-CSCF
- **Network**: IMS 1
- **Initiator**: Conference Initiator

#### IMS 1 MRF
- **Network**: IMS 1
- **MRFC-AS**: Initiating S-CSCF
- **MRFP**: Participating S-CSCF
- **I-CSCF**: Participating P-CSCF
- **Participant**: Called User Equipment

#### IMS 2
- **Network**: IMS 2
- **MRFC-AS**: Initiating S-CSCF
- **MRFP**: Participating S-CSCF
- **I-CSCF**: Participating P-CSCF
- **Participant**: Conference Participant

#### Called UE
- **Equipment**: Called User Equipment

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

1. **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>`

2. **202 Accepted**

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

4. **200 OK (NOTIFY)**

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

5. **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**:

1. **NOTIFY**
   - To: `<sip:user1_public1@home1.net>`
   - From: `<sip:user2_public1@home2.net>`
   - Subscription-State: terminated
   - Event: refer

2. **200 OK (NOTIFY)**

   The "200 OK" Acknowledges the NOTIFY message.

---

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

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.

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

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The 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.

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

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

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

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Request towards the MRFC-AS.
### Initiating S-CSCF Interfaces (IMS Conference Call)

<table>
<thead>
<tr>
<th>Calling UE</th>
<th>IMS Network</th>
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<tr>
<td>Caller User Equipment</td>
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<td>IMS 1 MRF</td>
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<td>Conference Initiator</td>
<td>Initiating P-CSCF</td>
<td>Initiating S-CSCF</td>
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</table>

**Conference in progress**

**Conference Caller leaving the Conference**

The conference initiator is also notified about a user dropping out of the conference.

```
200 OK (NOTIFY) 200 OK (NOTIFY)
```

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