IP Multimedia Subsystem (IMS) provides a framework and building blocks for building advanced telecom services. One such service is network wide publication and subscription of presence information. Users can subscribe to presence information for their contacts. If the contact accepts their request, the subscriber will be registered for presence notification. Whenever the friend publishes presence information, the IMS presence framework will notify the subscribed users.

IMS presence information communication can put a lot of load on the network. One way to reduce this load is to predefine the list of friends and family. When you subscribe to the "friends and family" list, a Resource List Server (RLS) in the IMS subscribes to the individual subscribers (presentities) on your behalf. Once the RLS completes the registrations, it collates the individual presence status into a single NOTIFY message.

User subscribes to the Resource List Server (RLS)

To initiate a subscription to the RLS, the UE generates a SUBSCRIBE request indicating support for "eventlist", together with an indication of the length of time this periodic subscription should last.

```
SUBSCRIBE
Event = presence,
Request URI = Resource List SIP URI,
Expires = 7200,
Route = <Watcher S-CSCF>,
From = Watcher URI
```

The P-CSCF looks up the serving network information for the Watcher's public user identity that was stored during the registration procedure. The SUBSCRIBE request is forwarded to S-CSCF.

```
200 (OK)
```

If all privacy conditions are met, PS sends a 200 (OK) response to the I-CSCF. 200 (OK) is passed all the way to Watcher.

```
NOTIFY
Subscription state,
To = Watcher URI,
From = Resource List SIP URI,
Route = <Watcher S-CSCF>
```

The Watcher acknowledges the NOTIFY request with a 200 (OK) to the P-CSCF. The 200 (OK) is passed to RLS.

Watcher S-CSCF performs an analysis of the Presentity URI and forwards the SUBSCRIBE request directly to the Presence PUA1's home network's CSCF i.e. I-CSCF in the destination network.

```
SUBSCRIBE
Event = presence,
Request URI = Presentity1 URI,
Expires = 7200,
Route = <Home RLS>, <Watcher S-CSCF>,
From = Watcher URI
```

The PS1 detects that Presentity1's UE has been switched off which modifies it presence state information.

```
NOTIFY
To = Home RLS,
From = Presentity1 URI,
Route = <Watcher S-CSCF>,
Event = presence,
Presence information
```

PS sends a NOTIFY request with the current state of the presentity's presence information that the watcher has subscribed and been authorized to.
### Processor Interfaces (IMS Presence Subscription to a Resource List)

<table>
<thead>
<tr>
<th>Watcher UE</th>
<th>Watcher IMS Network</th>
<th>Presentity IMS Networks</th>
<th>EventStudio System Designer 4.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watcher User Equipment</td>
<td></td>
<td></td>
<td>12-Apr-08 09:28 (Page 2)</td>
</tr>
</tbody>
</table>

The Home RLS generates a 200 (OK) response to the NOTIFY request. The message is passed to PS as shown.

The Resource List Server initiates a subscription request to the second user in the Resource List.

If all privacy conditions are met, PS sends a 200 (OK) response to the S-CSCF. 200 (OK) is passed all the way to Watcher.

The presence server for the second user generates a NOTIFY request to update the subscription status.

The Home RLS generates a 200 (OK) response to the NOTIFY request. The message is passed to PS as shown.

Collate the subscription responses and notify the Watcher UE

The Home RLS copies the body of the incoming NOTIFY request(s) into the body of the outgoing NOTIFY request to Watcher.

The Watcher acknowledges the NOTIFY request with a 200 (OK) to the P-CSCF. The 200 (OK) is passed to RLS.