Open Service Access (OSA);
Parlay X Web Services;
Part 20: Multimedia Multicast Session Management
(Parlay X 3)
## Contents

Intellectual Property Rights ........................................................................................................... 5
Foreword ........................................................................................................................................... 5

1 Scope ............................................................................................................................................ 7

2 References .................................................................................................................................... 7
2.1 Normative references ............................................................................................................... 7

3 Definitions and abbreviations ..................................................................................................... 8
3.1 Definitions ................................................................................................................................. 8
3.2 Abbreviations ........................................................................................................................... 8

4 Detailed service description ....................................................................................................... 8

5 Namespaces ................................................................................................................................. 9

6 Sequence diagrams ..................................................................................................................... 9
6.1 Create Multicast Session ........................................................................................................ 9
6.2 Delete Multicast Session ......................................................................................................... 10
6.3 Retrieve Multicast Session Information ................................................................................ 10
6.4 Invite Users To Join Session .................................................................................................. 10
6.5 Request Users To Leave Session ............................................................................................ 11
6.6 Retrieve Session Participation Information .......................................................................... 11
6.7 Notification of Channel Presence Information Events ...................................................... 11

7 XML Schema data type definition ............................................................................................ 11
7.1 SessionInformation structure ................................................................................................. 11
7.2 UserInformation structure .................................................................................................... 12
7.3 MultimediaType enumeration ............................................................................................... 12
7.4 UserStatus enumeration ....................................................................................................... 12

8 Web Service interface definition ............................................................................................... 12
8.1 Interface: Multicast ................................................................................................................ 12
8.1.1 Operation: createMulticastSession ............................................................................... 12
8.1.1.1 Input message: createMulticastSessionRequest ....................................................... 12
8.1.1.2 Output message: createMulticastSessionResponse .................................................. 13
8.1.1.3 Referenced faults ......................................................................................................... 13
8.1.2 Operation: deleteMulticastSession ................................................................................ 13
8.1.2.1 Input message: deleteMulticastSessionRequest ....................................................... 13
8.1.2.2 Output message: deleteMulticastSessionResponse .................................................. 13
8.1.2.3 Referenced faults ......................................................................................................... 13
8.1.3 Operation: getMulticastSessionInformation ................................................................ 13
8.1.3.1 Input message: getMulticastSessionInformationRequest ....................................... 13
8.1.3.2 Output message: getMulticastSessionInformationResponse ................................... 13
8.1.3.3 Referenced faults ......................................................................................................... 13
8.1.4 Operation: inviteUsersToJoin .......................................................................................... 14
8.1.4.1 Input message: inviteUsersToJoinRequest .................................................................. 14
8.1.4.2 Output message: inviteUsersToJoinResponse ............................................................. 14
8.1.4.3 Referenced faults ......................................................................................................... 14
8.1.5 Operation: requestUsersToLeave ..................................................................................... 14
8.1.5.1 Input message: requestUsersToLeaveRequest .......................................................... 14
8.1.5.2 Output message: requestUsersToLeaveResponse ....................................................... 15
8.1.5.3 Referenced faults ......................................................................................................... 15
8.1.6 Operation: querySessionParticipants ............................................................................. 15
8.1.6.1 Input message: querySessionParticipantsRequest ..................................................... 15
8.1.6.2 Output message: querySessionParticipantsResponse ............................................... 15
8.1.6.3 Referenced faults ......................................................................................................... 15
8.1.7 Operation: querySessionForUser ..................................................................................... 15
8.1.7.1 Input message: querySessionForUserRequest ............................................................ 16
8.1.7.2 Output message: querySessionForUserResponse .............................................................. 16
8.1.7.3 Referenced faults ................................................................. 16
8.2 Interface: MulticastNotificationManager ................................................................. 16
8.2.1 Operation: startNotification ................................................................. 16
8.2.1.1 Input message: startNotificationRequest ................................................................. 16
8.2.1.2 Output message: startNotificationResponse .............................................................. 16
8.2.1.3 Referenced faults ................................................................. 17
8.2.2 Operation: endNotification ................................................................. 17
8.2.2.1 Input message: endNotificationRequest ................................................................. 17
8.2.2.2 Output message: endNotificationResponse .............................................................. 17
8.2.2.3 Referenced faults ................................................................. 17
8.3 Interface: MulticastNotification ................................................................. 18
8.3.1 Operation: notifyJoinMulticastSession ................................................................. 18
8.3.1.1 Input message: notifyJoinMulticastSessionRequest ................................................................. 18
8.3.1.2 Output message: notifyJoinMulticastSessionResponse .............................................................. 18
8.3.1.3 Referenced faults ................................................................. 18
8.3.2 Operation: notifyLeaveMulticastSession ................................................................. 18
8.3.2.1 Input message: notifyLeaveMulticastSessionRequest ................................................................. 18
8.3.2.2 Output message: notifyLeaveMulticastSessionResponse .............................................................. 18
8.3.2.3 Referenced faults ................................................................. 18
8.3.3 Operation: notifyError ................................................................. 18
8.3.3.1 Input message: notifyErrorResponse ................................................................. 19
8.3.3.2 Output message: notifyErrorResponse ................................................................. 19
8.3.3.3 Referenced faults ................................................................. 19
8.3.4 Operation: notifyEnd ................................................................. 19
8.3.4.1 Input message: notifyEndRequest ................................................................. 19
8.3.4.2 Output message: notifyEndResponse ................................................................. 19
8.3.4.3 Referenced faults ................................................................. 19
9 Fault definitions ................................................................. 19
10 Service policies ................................................................. 20
Annex A (normative): WSDL for Multimedia Multicast Session Management ................................................................. 21
Annex B (informative): Bibliography ................................................................. 22
History ................................................................. 23
Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for ETSI members and non-members, and can be found in ETSI SR 000 314: "Intellectual Property Rights (IPRs): Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (http://webapp.etsi.org/IPR/home.asp).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

This ETSI Standard (ES) has been produced by ETSI Technical Committee Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN).

The present document is part 20 of a multi-part deliverable covering Open Service Access (OSA); Parlay X 3 Web Services, as identified below:

Part 1: "Common";
Part 2: "Third Party Call";
Part 3: "Call Notification";
Part 4: "Short Messaging";
Part 5: "Multimedia Messaging"
Part 6: "Payment";
Part 7: "Account Management";
Part 8: "Terminal Status";
Part 9: "Terminal Location";
Part 10: "Call Handling";
Part 11: "Audio Call";
Part 12: "Multimedia Conference";
Part 13: "Address List Management";
Part 14: "Presence";
Part 15: "Message Broadcast";
Part 16: "Geocoding";
Part 17: "Application-driven Quality of Service (QoS)"
Part 18: "Device Capabilities and Configuration";
Part 19: "Multimedia Streaming Control";

Part 20: "Multimedia Multicast Session Management".
The present document has been defined jointly between ETSI, The Parlay Group (http://www.parlay.org) and the 3GPP.

The present document forms part of the Parlay X 3.0 set of specifications.

The present document is equivalent to 3GPP TS 29.199-20 V7.0.2 (Release 7).
1 Scope

The present document is part 20 of the Stage 3 Parlay X 3 Web Services specification for Open Service Access (OSA).

The OSA specifications define an architecture that enables application developers to make use of network functionality through an open standardized interface, i.e. the OSA APIs.

The present document specifies the Multimedia Multicast Session Management Web Service. The following are defined here:

- Name spaces.
- Sequence diagrams.
- Data definitions.
- Interface specification plus detailed method descriptions.
- Fault definitions.
- Service Policies.
- WSDL Description of the interfaces.

2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific.

- For a specific reference, subsequent revisions do not apply.
- Non-specific reference may be made only to a complete document or a part thereof and only in the following cases:
  - if it is accepted that it will be possible to use all future changes of the referenced document for the purposes of the referring document;
  - for informative references.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

For online referenced documents, information sufficient to identify and locate the source shall be provided. Preferably, the primary source of the referenced document should be cited, in order to ensure traceability. Furthermore, the reference should, as far as possible, remain valid for the expected life of the document. The reference shall include the method of access to the referenced document and the full network address, with the same punctuation and use of upper case and lower case letters.

NOTE: While any hyperlinks included in this clause were valid at the time of publication ETSI cannot guarantee their long term validity.

2.1 Normative references

The following referenced documents are indispensable for the application of the present document. For dated references, only the edition cited applies. For non-specific references, the latest edition of the referenced document (including any amendments) applies.


NOTE: Available at http://www.w3.org/TR/2001/REC-xmlschema-2-20010502/.
3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in ES 202 504-1 [2] and the following apply:

Multicast joining: the process by which a user joins a multicast group

Multicast session: The group for providing the same multicast service. The end user joins the multicast session to become the member of the multicast session.

Multicast service: A unidirectional point-to-multipoint service in which data is efficiently transmitted from a single source to a multicast group in the associated multicast service area. Multicast services can only be received by such members that are subscribed to the specific multicast service and have joined the multicast group associated with the specific service.

Member: the user becomes a member of a multicast group after he/she joined to the multicast group

Channel presence information: consists of a set of attributes that characterize a multicast session such as user identifiers and the multicast session in which they are participating

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in ES 202 504-1 [2] and the following apply:

- BM-SC Broadcast Multicast Service Centre
- GGSN Gateway GPRS Support Node
- IPTV Internet Protocol Television
- MBMS Multimedia Broadcast/Multicast Service
- SGSN Serving GPRS Support Node

4 Detailed service description

The Multimedia Multicast Session Management Web Service allows for a third party (e.g. application) to control a multicast session, its members and multimedia stream, and obtain channel presence information.

The Multimedia Multicast Session Management is a simple Web Service consisting of three interfaces:

- Multicast: the management of sessions and user participation in sessions
- Multicast Notification: delivering channel presence information events to the application, as users join or leave multicast sessions
- Multicast Notification Manager: providing on-line set up and tear down of notifications for channel presence information events

NOTE: For control of a multimedia stream associated with a multicast session (e.g. start/stop/pause/resume), a third party (e.g. application) invokes the appropriate operations defined in ES 202 504-19 [3].
The GPRS Packet network or IP Multicast Network delivers multimedia multicast streams from a multimedia source to users who are already participating in multicast sessions. The basic scenario is as follows:

An application creates a multicast session for personal broadcasting and plays the multicast stream. A unique identifier (i.e. multicast address) is assigned to the just-created multicast session. The user participating in the multicast session for personal broadcasting may wish to invite their friends to participate in the session. If the invited friends accept this invitation request, they see the same program for personal broadcasting on their terminals. They usually communicate with each other by using a multimedia over IP while they are participating in the same session. Furthermore the application monitors user participation status (i.e. joining or leaving the multicast session) using a notification mechanism. For example, if a friend has left the session, the application is notified.

5 Namespaces

The Multicast interface uses the namespace:

http://www.csapi.org/wsdl/parlayx/multicast/v3_0

The MulticastNotificationManager interface uses the namespace:

http://www.csapi.org/wsdl/parlayx/multicast/notification_manager/v3_0

The MulticastNotification interface uses the namespace:

http://www.csapi.org/wsdl/parlayx/multicast/notification/v3_0

The data types are defined in the namespace:

http://www.csapi.org/schema/parlayx/multicast/v3_0

The 'xsd' namespace is used in the present document to refer to the XML Schema data types defined in XML Schema [1]. The use of the name 'xsd' is not semantically significant.

6 Sequence diagrams

6.1 Create Multicast Session

![Sequence diagram for Create Multicast Session]
6.2 Delete Multicast Session

6.3 Retrieve Multicast Session Information

6.4 Invite Users To Join Session
6.5 Request Users To Leave Session

6.6 Retrieve Session Participation Information

6.7 Notification of Channel Presence Information Events

7 XML Schema data type definition

7.1 SessionInformation structure

Data type for describing multicast session information.
### 7.2 UserInformation structure

<table>
<thead>
<tr>
<th>Element Name</th>
<th>Element Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>user</td>
<td>xsd:anyURI</td>
<td>No</td>
<td>Identifies an end user</td>
</tr>
<tr>
<td>status</td>
<td>UserStatus</td>
<td>No</td>
<td>the status of the user</td>
</tr>
</tbody>
</table>

### 7.3 MultimediaType enumeration

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video</td>
<td>Video</td>
</tr>
<tr>
<td>Audio</td>
<td>Audio</td>
</tr>
<tr>
<td>Data</td>
<td>Data</td>
</tr>
</tbody>
</table>

### 7.3 UserStatus enumeration

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>User invited but has not joined the session yet</td>
<td>InvitedToJoin</td>
</tr>
<tr>
<td>User has joined the session</td>
<td>Joined</td>
</tr>
<tr>
<td>User has rejected the invitation</td>
<td>Rejected</td>
</tr>
<tr>
<td>User requested to leave, but has not left the session yet</td>
<td>RequestedToLeave</td>
</tr>
<tr>
<td>User is not, or is no longer, participating in the session</td>
<td>NotParticipating</td>
</tr>
</tbody>
</table>

### 8 Web Service interface definition

#### 8.1 Interface: Multicast

This interface is used by the application to manage:

- multicast sessions
- user participation in sessions

#### 8.1.1 Operation: createMulticastSession

The application invokes this operation to create a multicast session using the information it provides. If successful, the application receives the session address (i.e. the IP address) of a newly created session.

#### 8.1.1.1 Input message: createMulticastSessionRequest

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sessionInformation</td>
<td>SessionInformation</td>
<td>No</td>
<td>Multicast session information</td>
</tr>
</tbody>
</table>
8.1.1.2 Output message: createMulticastSessionResponse

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>result</td>
<td>xsd:string</td>
<td>No</td>
<td>Multicast session address: i.e. the IP address.</td>
</tr>
</tbody>
</table>

8.1.1.3 Referenced faults

ServiceException from ES 202 504-1 [2]:
- SVC0001: Service error.
- SVC0002: Invalid input value.

PolicyException from ES 202 504-1 [2]:
- POL0001: Policy error.

8.1.2 Operation: deleteMulticastSession

The application invokes this operation to delete an existing multicast session.

8.1.2.1 Input message: deleteMulticastSessionRequest

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sessionAddress</td>
<td>xsd:string</td>
<td>No</td>
<td>Multicast Session Address, i.e. the IP address</td>
</tr>
</tbody>
</table>

8.1.2.2 Output message: deleteMulticastSessionResponse

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8.1.2.3 Referenced faults

ServiceException from ES 202 504-1 [2]:
- SVC0001: Service error.
- SVC0002: Invalid input value.

PolicyException from ES 202 504-1 [2]:
- POL0001: Policy error.

8.1.3 Operation: getMulticastSessionInformation

The application invokes this operation to retrieve information for an existing multicast session.

8.1.3.1 Input message: getMulticastSessionInformationRequest

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sessionAddress</td>
<td>xsd:string</td>
<td>No</td>
<td>Multicast Session Address, i.e. the IP address</td>
</tr>
</tbody>
</table>

8.1.3.2 Output message: getMulticastSessionInformationResponse

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>result</td>
<td>SessionInformation</td>
<td>No</td>
<td>Multicast session information</td>
</tr>
</tbody>
</table>
8.1.3.3 Referenced faults

ServiceException from ES 202 504-1 [2]:
- SVC0001: Service error.
- SVC0002: Invalid input value.

PolicyException from ES 202 504-1 [2]:
- POL0001: Policy error.

8.1.4 Operation: inviteUsersToJoin

The application invokes this operation to invite users to join an existing multicast session.

8.1.4.1 Input message: inviteUsersToJoinRequest

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sessionAddress</td>
<td>xsd:string</td>
<td>No</td>
<td>Multicast Session Address, i.e. the IP address</td>
</tr>
<tr>
<td>users</td>
<td>xsd:anyURI</td>
<td>[1…unbounded]</td>
<td>The User(s) or user group(s) that are invited to join the multicast session.</td>
</tr>
</tbody>
</table>

8.1.4.2 Output message: inviteUsersToJoinResponse

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>result</td>
<td>UserInformation</td>
<td>No</td>
<td>The participation status of the user(s) who were invited to join the multicast session.</td>
</tr>
</tbody>
</table>

8.1.4.3 Referenced faults

ServiceException from ES 202 504-1 [2]:
- SVC0001: Service error.
- SVC0002: Invalid input value.

PolicyException from ES 202 504-1 [2]:
- POL0001: Policy error.
- POL0006: Groups not allowed
- POL0007: Nested groups not allowed

8.1.5 Operation: requestUsersToLeave

The application invokes this operation to request users to leave an existing multicast session.

8.1.5.1 Input message: requestUsersToLeaveRequest

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sessionAddress</td>
<td>xsd:string</td>
<td>No</td>
<td>Multicast Session Address, i.e. the IP address</td>
</tr>
<tr>
<td>users</td>
<td>xsd:anyURI</td>
<td>[1…unbounded]</td>
<td>The User(s) or user group(s) that are requested to leave the multicast session.</td>
</tr>
</tbody>
</table>
8.1.5.2 Output message: requestUsersToLeaveResponse

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>result</td>
<td>UserInformation</td>
<td>No</td>
<td>The participation status of the user(s) who were requested to leave the multicast session.</td>
</tr>
</tbody>
</table>

8.1.5.3 Referenced faults

ServiceException from ES 202 504-1 [2]:
- SVC0001: Service error.
- SVC0002: Invalid input value.

PolicyException from ES 202 504-1 [2]:
- POL0001: Policy error.
- POL0006: Groups not allowed
- POL0007: Nested groups not allowed

8.1.6 Operation: querySessionParticipants

The application invokes this operation to request the set of users who are currently participating in an existing multicast session.

8.1.6.1 Input message: querySessionParticipantsRequest

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sessionAddress</td>
<td>xsd:string</td>
<td>No</td>
<td>Multicast Session Address, i.e. the IP address</td>
</tr>
</tbody>
</table>

8.1.6.2 Output message: querySessionParticipantsResponse

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>result</td>
<td>xsd:anyURI</td>
<td>Yes</td>
<td>The users, if any, that are participating in the specified session i.e. with a UserStatus value of Joined or Requested ToLeave.</td>
</tr>
</tbody>
</table>

8.1.6.3 Referenced faults

ServiceException from ES 202 504-1 [2]:
- SVC0001: Service error.
- SVC0002: Invalid input value.

PolicyException from ES 202 504-1 [2]:
- POL0001: Policy error.

8.1.7 Operation: querySessionForUser

The application invokes this operation to request the address of the multicast session in which the specified user is currently participating.
8.1.7.1 Input message: querySessionForUserRequest

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>user</td>
<td>xsd:anyURI</td>
<td>No</td>
<td>The user participating in a multicast session.</td>
</tr>
</tbody>
</table>

8.1.7.2 Output message: querySessionForUserResponse

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>result</td>
<td>xsd:string</td>
<td>Yes</td>
<td>The (IP) address of the Multicast Session, if any, in which the specified user is participating: i.e. with a UserStatus value of <strong>Joined</strong> or <strong>Requested ToLeave</strong></td>
</tr>
</tbody>
</table>

8.1.7.3 Referenced faults

ServiceException from ES 202 504-1 [2]:
- SVC0001: Service error.
- SVC0002: Invalid input value.

PolicyException from ES 202 504-1 [2]:
- POL0001: Policy error.

8.2 Interface: MulticastNotificationManager

8.2.1 Operation: startNotification

The notification pattern with correlation is used in order to correlate the notification events with the request.

The application sets a notification trigger on changes associated with the specified user(s) participation in a multicast session. If the specified user address is a group address, the application will receive an individual notification for each member of the group whose session participation changes.

Note that the **SimpleReference** structure contains the **correlator** string used in subsequent messages to the **MulticastNotification** interface.

8.2.1.1 Input message: startNotificationRequest

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sessionAddress</td>
<td>xsd:string</td>
<td>No</td>
<td>Multicast Session Address, i.e. the IP address</td>
</tr>
<tr>
<td>users</td>
<td>xsd:anyURI [1…unbounded]</td>
<td>No</td>
<td>The user(s) or group(s) that the application wants to monitor for joining or leaving events</td>
</tr>
<tr>
<td>reference</td>
<td>common:SimpleReference</td>
<td>No</td>
<td>Defines the <strong>MulticastNotification</strong> interface</td>
</tr>
<tr>
<td>frequency</td>
<td>common:TimeMetric</td>
<td>No</td>
<td>Maximum frequency of notifications (can also be considered minimum time between notifications)</td>
</tr>
<tr>
<td>duration</td>
<td>common:TimeMetric</td>
<td>Yes</td>
<td>Length of time notifications occur for; do not specify to use default notification time defined by service policy</td>
</tr>
<tr>
<td>count</td>
<td>xsd:int</td>
<td>Yes</td>
<td>Maximum number of notifications. For no maximum, either do not specify this part or specify a value of zero.</td>
</tr>
</tbody>
</table>

8.2.1.2 Output message: startNotificationResponse

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
8.2.1.3 Referenced faults

ServiceException from ES 202 504-1 [2]:

- SVC0001: Service error.
- SVC0002: Invalid input value.
- SVC0004: No valid addresses.
- SVC0005: Duplicate correlator.
- SVC0006: Invalid group.

PolicyException from ES 202 504-1 [2]:

- POL0001: Policy error.
- POL0003: Too many addresses.
- POL0004: Unlimited notifications not supported.
- POL0005: Too many notifications requested.
- POL0006: Groups not allowed
- POL0007: Nested groups not allowed.
- POL0009: Invalid frequency requested.

8.2.2 Operation: endNotification

The application may end a notification using this operation.

Until this operation returns, notifications may continue to be received by the application.

An end of notification (notifyEndRequest) message will not be delivered to the application for a notification ended using this operation.

8.2.2.1 Input message: endNotificationRequest

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>correlator</td>
<td>xsd:string</td>
<td>No</td>
<td>The notification the application wants to end.</td>
</tr>
</tbody>
</table>

8.2.2.2 Output message: endNotificationResponse

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8.2.2.3 Referenced faults

ServiceException from ES 202 504-1 [2]:

- SVC0001: Service error.
- SVC0002: Invalid input value.

PolicyException from ES 202 504-1 [2]:

- POL0001: Policy error.
8.3 Interface: MulticastNotification

Notification interface to which notifications relating to changes in channel presence information are delivered.

8.3.1 Operation: notifyJoinMulticastSession

This asynchronous operation is invoked to notify the application that the end user has joined the multicast session.

8.3.1.1 Input message: notifyJoinMulticastSessionRequest

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>correlator</td>
<td>xsd:string</td>
<td>No</td>
<td>Identifies the notification request</td>
</tr>
<tr>
<td>user</td>
<td>xsd:anyURI</td>
<td>No</td>
<td>The User who has joined the multicast session.</td>
</tr>
</tbody>
</table>

8.3.1.2 Output message: notifyJoinMulticastSessionResponse

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8.3.1.3 Referenced faults

None

8.3.2 Operation: notifyLeaveMulticastSession

This asynchronous operation is invoked to notify the application that the end user has left the multicast session.

8.3.2.1 Input message: notifyLeaveMulticastSessionRequest

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>correlator</td>
<td>xsd:string</td>
<td>No</td>
<td>Identifies the notification request</td>
</tr>
<tr>
<td>user</td>
<td>xsd:anyURI</td>
<td>No</td>
<td>The User who has left the multicast session.</td>
</tr>
</tbody>
</table>

8.3.2.2 Output message: notifyLeaveMulticastSessionResponse

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8.3.2.3 Referenced faults

None

8.3.3 Operation: notifyError

The error message is sent to the application to indicate that the notification for a user, or for the whole notification, is being cancelled by the Web Service.
8.3.3.1 Input message: notifyErrorRequest

<table>
<thead>
<tr>
<th>Part name</th>
<th>Part type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>correlator</td>
<td>xsd:string</td>
<td>No</td>
<td>Correlator provided in request to set up this notification.</td>
</tr>
<tr>
<td>user</td>
<td>xsd:anyURI</td>
<td>Yes</td>
<td>The user to which the error applies. If not specified the error applies to all users associated with this notification.</td>
</tr>
<tr>
<td>reason</td>
<td>common:ServiceError</td>
<td>No</td>
<td>The reason the notification is being discontinued.</td>
</tr>
</tbody>
</table>

8.3.3.2 Output message: notifyErrorResponse

<table>
<thead>
<tr>
<th>Part name</th>
<th>Part type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8.3.3.3 Referenced faults

None.

8.3.4 Operation: notifyEnd

The notifications have ended for this correlator. This operation will be invoked when the duration or count of notifications has been attained. This operation will not be invoked in the case of an error ending the notifications or deliberate ending of the notification (using endNotification).

8.3.4.1 Input message: notifyEndRequest

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>correlator</td>
<td>xsd:string</td>
<td>No</td>
<td>Identifies the notification request</td>
</tr>
</tbody>
</table>

8.3.4.2 Output message: notifyEndResponse

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Type</th>
<th>Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8.3.4.3 Referenced faults

None

9 Fault definitions

There are no service-specific fault definitions for this service.
## 10 Service policies

Service policies for this service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MaximumNotificationAddresses</td>
<td>xsd:int</td>
<td>Maximum number of addresses for which a notification can be set up</td>
</tr>
<tr>
<td>MaximumNotificationFrequency</td>
<td>common:TimeMetric</td>
<td>Maximum rate of notification delivery (also can be considered minimum time between notifications)</td>
</tr>
<tr>
<td>MaximumNotificationDuration</td>
<td>common:TimeMetric</td>
<td>Maximum amount of time a notification may be set up for</td>
</tr>
<tr>
<td>MaximumCount</td>
<td>xsd:int</td>
<td>Maximum number of notifications that may be requested</td>
</tr>
<tr>
<td>UnlimitedCountAllowed</td>
<td>xsd:boolean</td>
<td>Allowed to specify unlimited notification count (i.e. either by not specifying the optional Count message part in startNotificationRequest or by specifying a value of zero)</td>
</tr>
<tr>
<td>GroupSupport</td>
<td>xsd:boolean</td>
<td>Groups URIs may be used</td>
</tr>
<tr>
<td>NestedGroupSupport</td>
<td>xsd:boolean</td>
<td>Are nested groups supported in group definitions</td>
</tr>
</tbody>
</table>
Annex A (normative):
WSDL for Multimedia Multicast Session Management

The document/literal WSDL representation of this interface specification is compliant to ES 202 504-1 [2] and is contained in text files (contained in archive es_20250420v010101p0.zip) which accompany the present document.
Annex B (informative):
Bibliography

ETSI TR 121 905: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Vocabulary for 3GPP Specifications (3GPP TR 21.905)".

3GPP TS 22.146: "Multimedia Broadcast/Multicast Service (MBMS), Stage 1".  

3GPP TS 23.246: "Multimedia Broadcast/Multicast Service (MBMS), Architecture and functional description ".  

IETF RFC 2236 Internet Group Management Protocol (IGMP), Version 2  
http://www.ietf.org/rfc/rfc2236.txt
# History

## Document history

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Type</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1.1.1</td>
<td>February</td>
<td>Membership Approval Procedure</td>
<td>MV 20080425: 2008-02-26 to 2008-04-25</td>
</tr>
<tr>
<td>V1.1.1</td>
<td>May 2008</td>
<td>Publication</td>
<td></td>
</tr>
</tbody>
</table>