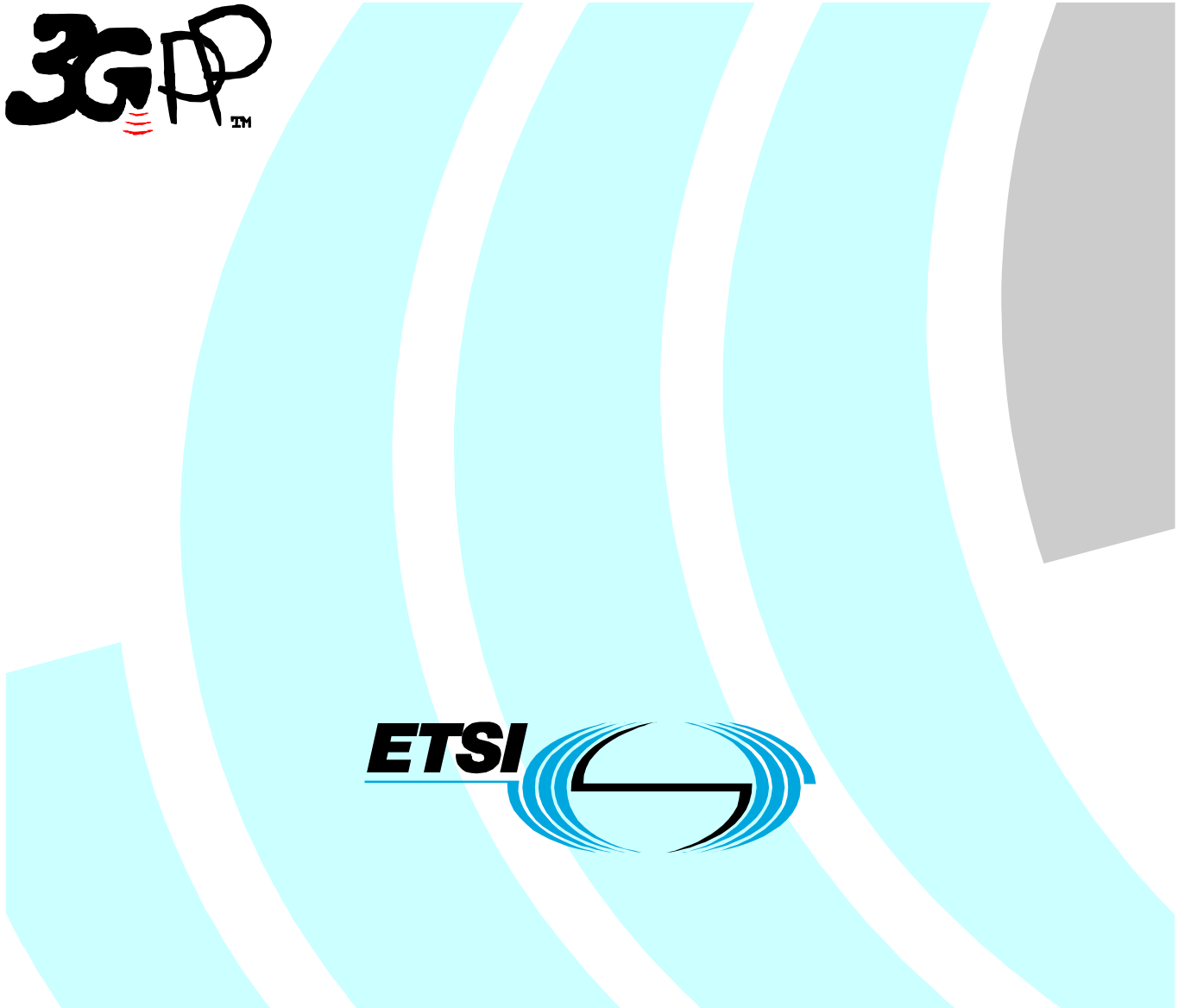
ETSI TS 129 199-12 V7.0.2 (2007-06)

Technical Specification

Universal Mobile Telecommunications System (UMTS);
Open Service Access (OSA);
Parlay X web services;
Part 12: Multimedia conference
(3GPP TS 29.199-12 version 7.0.2 Release 7)



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Foreword

This Technical Specification (TS) has been produced by ETSI 3rd Generation Partnership Project (3GPP).

The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under http://webapp.etsi.org/key/queryform.asp.

Contents

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

3GPP acknowledges the contribution of the Parlay X Web Services specifications from The Parlay Group. The Parlay Group is pleased to see 3GPP acknowledge and publish the present document, and the Parlay Group looks forward to working with the 3GPP community to improve future versions of the present document.

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

Introduction

The present document is part 12 of a multi-part deliverable covering the 3rd Generation Partnership Project; Technical Specification Group Core Network and Terminals; Open Service Access (OSA); Parlay X 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"

1 Scope

The present document is Part 12 of the Stage 3 Parlay X 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 concepts and the functional architecture for the OSA are contained in 3GPP TS 23.198 [3]. The requirements for OSA are contained in 3GPP TS 22.127 [2].

The present document specifies the Multimedia Conference Web Service aspects of the interface. All aspects of the Multimedia Conference Web Service are defined here, these being:

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

The present document has been defined jointly between 3GPP TSG CT WG5, ETSI TISPAN and The Parlay Group.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 22.127: "Service Requirement for the Open Services Access (OSA); Stage 1".

[3] 3GPP TS 23.198: "Open Service Access (OSA); Stage 2".

[4] 3GPP TS 22.101: "Service aspects; Service principles".

[5] W3C Recommendation (2 May 2001): "XML Schema Part 2: Datatypes".

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

[6] 3GPP TS 29.199-1: "Open Service Access (OSA); Parlay X Web Services; Part 1: Common".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TS 29.199-1 [6] apply.

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TS 29.199-1 [6] apply.

4 Detailed service description

The Multimedia Conferencing is a simple Web Service that allows the creation of a multimedia conference and the dynamic management of the participants involved.

The underlying model of the service is based on the following entities:

- **Conference:** a "context" (uniquely identified) to which participants can be added/removed.
- **Participant:** each of the parties involved in the conference. There may exist a participant that is also the "owner" of the conference, i.e. the user who can end the call and/or be the reference user for billing purposes.
- **Media:** the conference can utilize multiple media streams to support the participants' communication. In particular both audio and video streams are available, including the specific stream direction (i.e. in, out, bidirectional).

NOTE: A call session allows the application to avail of other web service features that can add value to the created call session. For example the Audio Call web service can provide multimedia message delivery to call participants in the call session (playXXXMessage operation) and furthermore control of the media streams for the call participants thus enabling conversational multimedia communication including voice, video, chat, and data. Media can be added/removed for participants using the operations **addMediaForParticipants** and **deleteMediaForParticipants** in Audio Call

An application setting up a multimedia conference must initially invoke the **createConference** operation. The result of such invocation is the creation of a "context" that represents a "virtual" room where users can "meet". A unique identifier, a callSessionIdentifier is assigned to the just-created conference. At this stage no participant is connected yet.

Subsequently the application may wish to add participants to the conference. In order to do so the operation **inviteParticipant** can be used. The result of such operation is to alert the user of the incoming connection request (e.g. the user's terminal rings).

If the application wishes to check whether the user has accepted the invitation (i.e. is connected) it can invoke (at a later time) the **getParticipantInfo** operation.

Note that:

- As soon as the first participant connects, the conference becomes "active". The duration of the conference is then measured starting from the moment the conference has became active.
- The initial media set utilized by the participant will depend on the conference type and the media actually supported by the participant's terminal.

During the conference session the application is able to:

- Add (or remove) a specific media stream to a single participant: e.g. adding a video bidirectional stream to a participant that has an audio connection to the conference. This can be obtained by invoking the media control (**addMediaForParticipants** and the **deleteMediaForParticipants)** operations of the Audio Call web service.
- Disconnect a participant from the conference, by invoking the **disconnectParticipant** operation.
- Retrieve information related to the conference and its status, by invoking **getConferenceInfo** and **getParticipants.**

There are different conditions that can determine the end of the conference:

1) The application may invoke the operation **endConference**, that "forces" the termination of the conference and the disconnection of all participants.
2) The owner of the conference (if defined) leaves the conference. If the owner is not defined this condition will apply when all the participants have left the conference (disconnected).
3) The conference duration exceeds a maximum value (specified during the conference creation step).

5 Namespaces

The Multimedia Conference interface uses the namespace:

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

The data types are defined in the namespace:

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

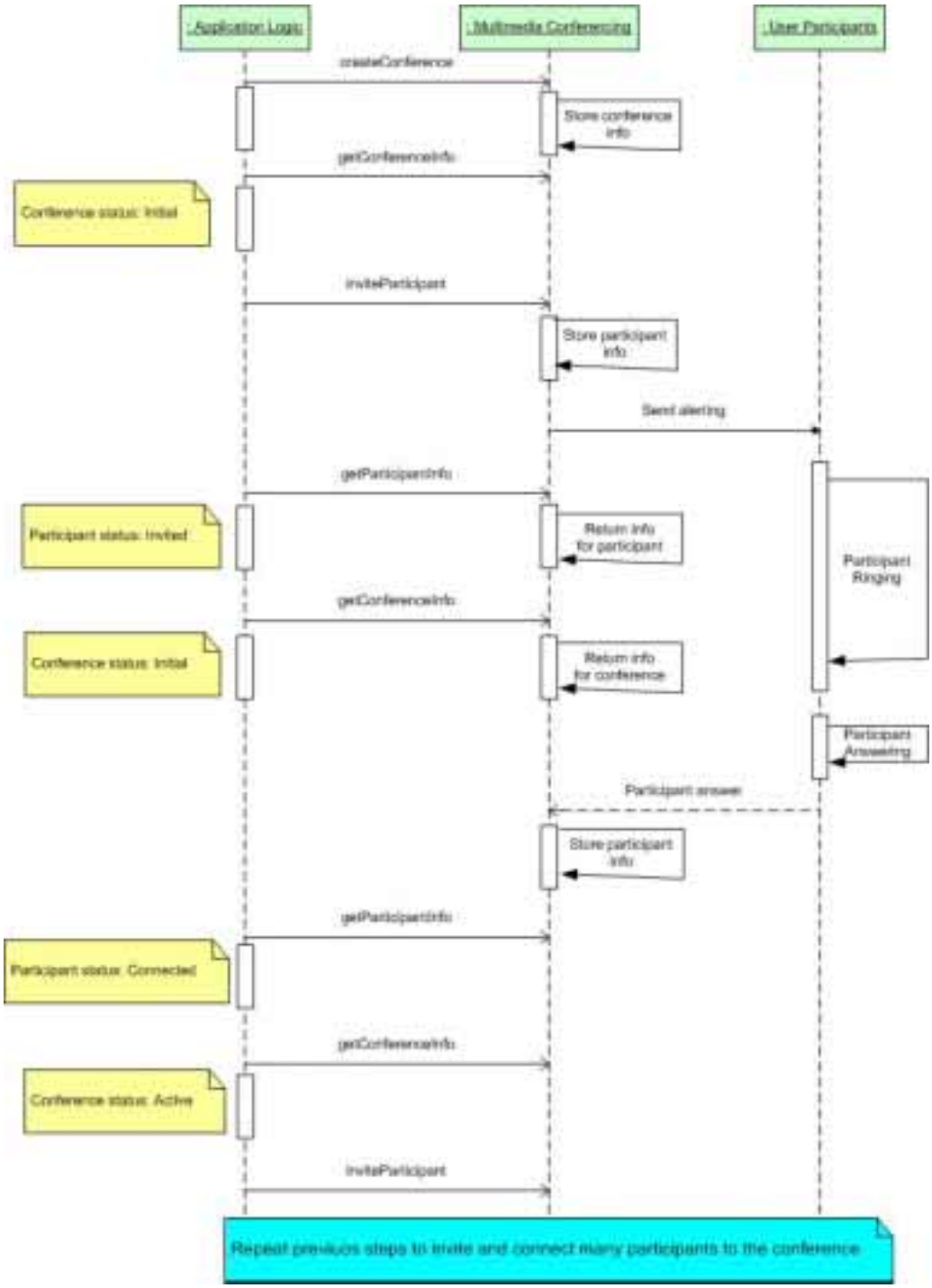
The 'xsd' namespace is used in the present document to refer to the XML Schema data types defined in XML Schema [5]. The use of the name 'xsd' is not semantically significant.

6 Sequence diagrams

The following sequence diagrams illustrate typical scenarios of interaction between an application and the Multimedia Conferencing Web Service.

6.1 Setting up a conference

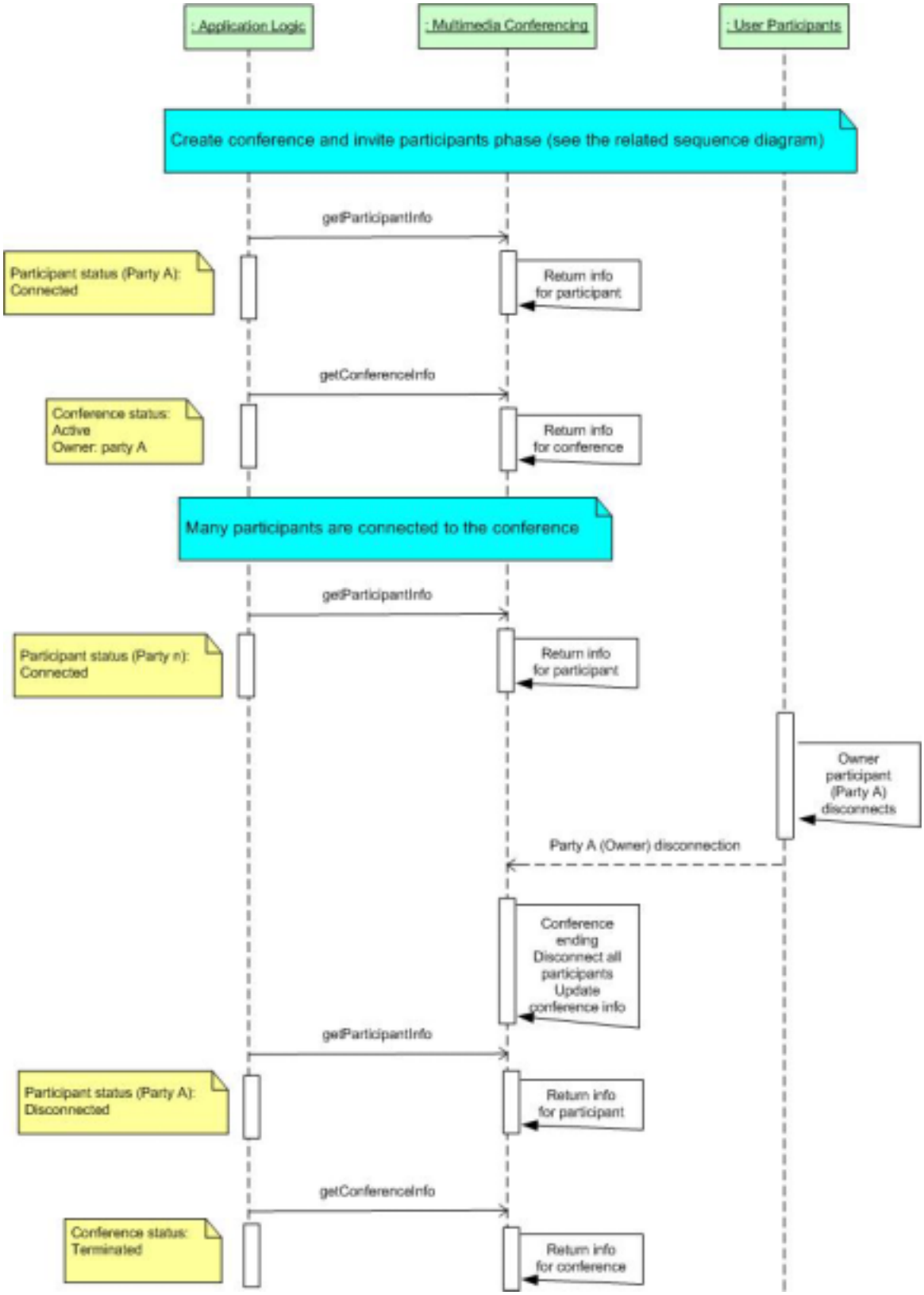
Set up a multimedia conference call.



6.2 Void

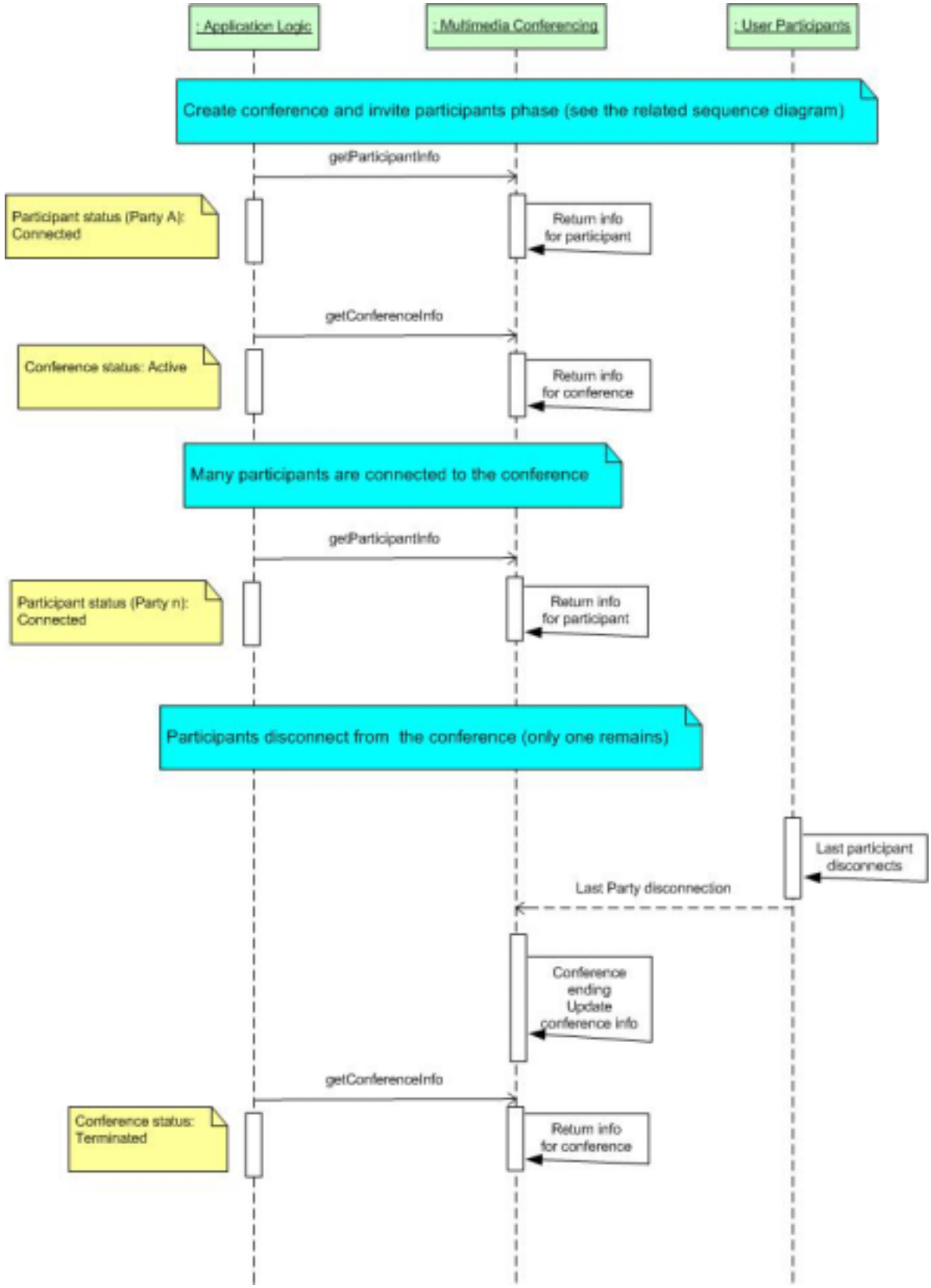
6.3 Conference owner disconnects

During a conference call, the conference owner disconnects.



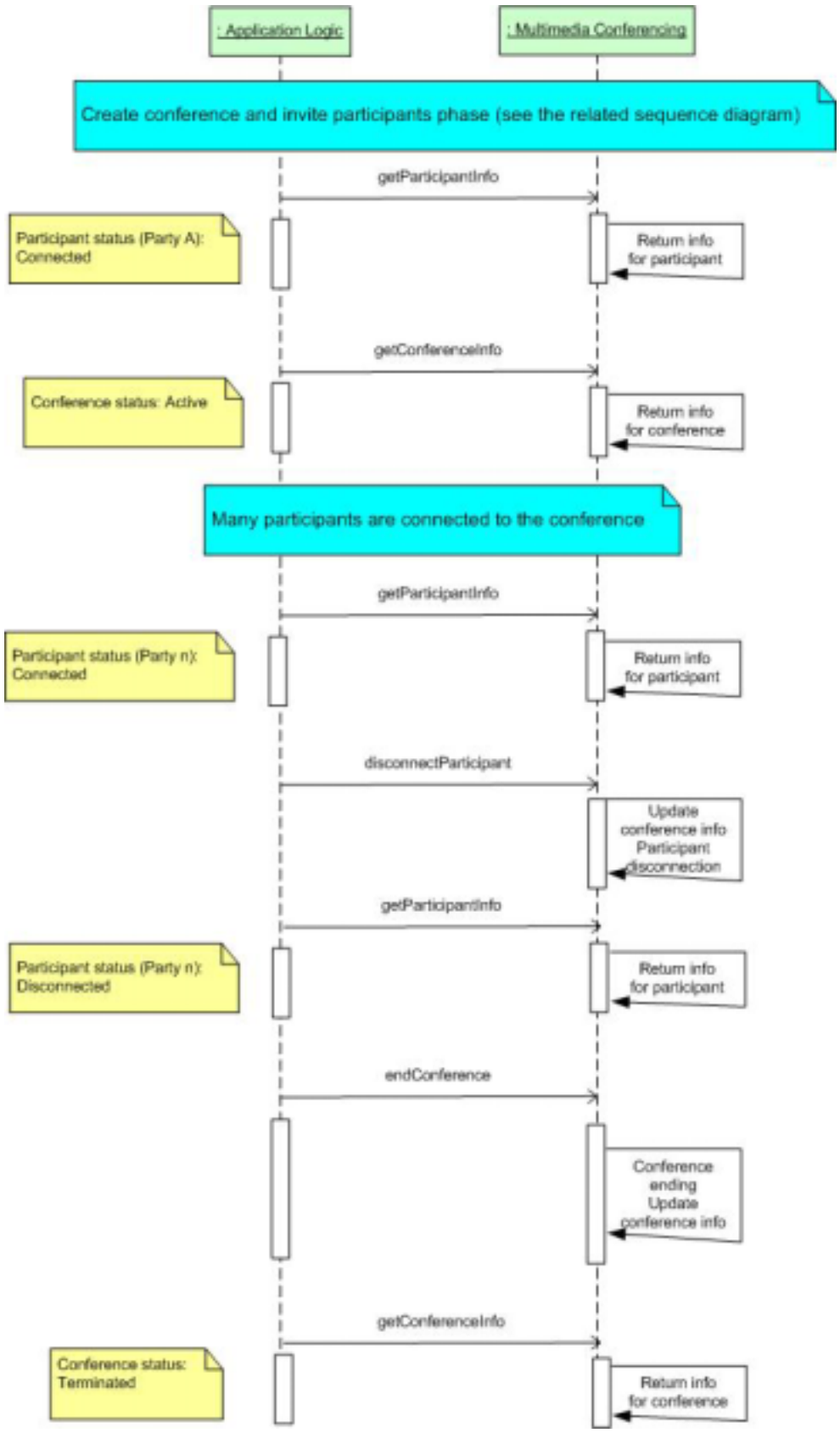
6.4 All participants disconnect

End of conference call processing when all participants disconnect.



6.5 Conference ended by application

End of conference call processing when the conference is ended by the application.



7 XML Schema data type definition

7.1 ConferenceStatus enumeration

Element name	Description
Initial	The conference has been created but no participant is connected yet
Active	The conference is active, i.e. at least one user has connected
Terminated	The conference was terminated

7.2 ConferenceInfo structure

Name	Type	Optional	Description
Status	ConferenceStatus	No	Status of the conference
StartTime	xsd:dateTime	No	The time at which the conference was created
Duration	xsd:int	No	The duration of the conference so far (in seconds)
Owner	xsd:anyURI	No	Conference owner
NumberOfParticipants	xsd:int	No	Current number of connected participants
MaximumNumberOfParticipants	xsd:int	No	Maximum number of participants
ConferenceIdentifier	xsd:string	No	Conference identifier
ConferenceDescription	xsd:string	No	Conference description

7.3 ParticipantInfo structure

Name	Type	Optional	Description
Participant	xsd:anyURI	No	Participant identifier
MediaInfo	common: MediaInfo[1..unbounded]	No	Media information currently used
StartTime	xsd:dateTime	No	Time this participant joined the conference
Status	ParticipantStatus	No	Status of participant

7.4 ParticipantStatus enumeration

Element name	Description
Invited	Participant invited but not connected yet
Connected	Participant connected
Disconnected	Participant disconnected

7.5 Void

7.6 Void

7.7 Void

8 Web Service interface definition

8.1 Interface: MultimediaConference

The MultimediaConference interface can be used by an application for creating a multimedia conference call and for dynamically managing the participants involved in the call.

8.1.1 Operation: createConference

The invocation of **createConference** requests to create a multi-media conference with initially no participants connected. The reference to the new multimedia conference is returned in the output parameter.

The conference termination can be driven either by a user action or by the expiring of a maximum duration. In particular, three possible situations are considered. In the first scenario, the concept of the "conference owner" is used. This user that has the control of the call and when the conference owner leaves the conference, all users are disconnected (such a user could be for instance the reference for the conference billing). In this scenario, the optional parameter **conferenceOwner** is present in the method call.

In the second scenario, the conference is terminated when the last participant abandons (in this case the parameter **conferenceOwner** is not present).

A third case is when the optional parameter **maximumDuration** is present: in this situation, when the maximum duration is reached, the conference is terminated.

The selection of the scenario depends on the presence of the optional parameters; if no optional parameter is present, the conference end condition is the disconnection of the last user in conference, if both are present, the conference is terminated when the duration expires (this case could happen if the information concerning the conference owner is needed for billing purposes).

The values **maximumDuration** and **maximumNumberOfParticipants** must not exceed the corresponding service policies otherwise a policy exception is raised.

8.1.1.1 Input message: createConferenceRequest

Part name	Part type	Optional	Description
ConferenceType	xsd:string	Yes	Conference type, i.e. one of a list of operator-specific identifiers that indicates how the conference is rendered on the terminals
ConferenceDescription	xsd:string	No	A text describing the conference
Charging	common:ChargingInformation	Yes	If present, defines the charge per unit of time consumed on the conference call. If the service does not support charging, a PolicyException (POL0008) will be returned.
MaximumDuration	xsd:int	Yes	If present it represents the maximum duration of the multimedia conference in seconds. If this parameter is present, it represents the end condition of the conference.
MaximumNumberOfParticipants	xsd:int	No	Maximum number of participants allowed
ConferenceOwner	xsd:anyURI	Yes	It is the address of the multimedia conference owner. If this parameter is present, and the maximumDuration is not present, the conference is terminated when this user disconnects, else this information can be used for billing or other purpose

8.1.1.2 Output message: createConferenceResponse

Part name	Part type	Optional	Description
result	xsd:string	No	Call session identifier, the identifier for the created Conference

8.1.1.3 Referenced faults

ServiceException from 3GPP TS 29.199-1 [6]:

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

PolicyException from 3GPP TS 29.199-1 [6]:

- POL0001: Policy error.
- POL0008: Charging not supported.
- POL0240: Too many participants.
- POL0242: Maximum duration exceeded.

8.1.2 Operation: getConferenceInfo

The invocation of **getConferenceInfo** requests the information concerning the current status of the multi-media conference call identified by **callSessionIdentifier**.

8.1.2.1 Input message: getConferenceInfoRequest

Part name	Part type	Optional	Description
CallSessionIdentifier	xsd:string	No	Call session identifier; the Conference identifier

8.1.2.2 Output message: getConferenceInfoResponse

Part name	Part type	Optional	Description
result	ConferenceInfo	No	Status of the conference

8.1.2.3 Referenced faults

ServiceException from 3GPP TS 29.199-1 [6]:

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

PolicyException from 3GPP TS 29.199-1 [6]:

- POL0001: Policy error.

8.1.3 Operation: endConference

The invocation of **endConference** requests to terminate the multi-media conference call identified by **callSessionIdentifier**.

8.1.3.1 Input message: endConferenceRequest

Part name	Part type	Optional	Description
CallSessionIdentifier	xsd:string	No	Call session identifier; the Conference identifier

8.1.3.2 Output message: endConferenceResponse

Part name	Part type	Optional	Description
None			

8.1.3.3 Referenced faults

ServiceException from 3GPP TS 29.199-1 [6]:

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

PolicyException from 3GPP TS 29.199-1 [6]:

- POL0001: Policy error.

8.1.4 Operation: inviteParticipant

The invocation of **inviteParticipant** requests to add a new participant specified by **participant** to the multi-media conference call identified by **callSessionIdentifier**. The media used for the initial connection of the new participant depends on the conference type and the participant's supported media.

The operation will fail if the conference has already reached the maximum number of participants (as specified in the creation operation).

8.1.4.1 Input message: inviteParticipantRequest

Part name	Part type	Optional	Description
CallSessionIdentifier	xsd:string	No	Call session identifier; the Conference identifier
Participant	xsd:anyURI	No	New participant invited

8.1.4.2 Output message: inviteParticipantResponse

Part name	Part type	Optional	Description
None			

8.1.4.3 Referenced faults

ServiceException from 3GPP TS 29.199-1 [6]:

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

PolicyException from 3GPP TS 29.199-1 [6]:

- POL0001: Policy error.
- POL0240: Too many participants.

8.1.5 Operation: disconnectParticipant

The invocation of **disconnectParticipant** requests to disconnect the participant specified by **participant** from the multi-media conference call identified by **callSessionIdentifier**.

8.1.5.1 Input message: disconnectParticipantRequest

Part name	Part type	Optional	Description
CallSessionIdentifier	xsd:string	No	Call session identifier; the Conference identifier
Participant	xsd:anyURI	No	Participant

8.1.5.2 Output message: disconnectParticipantResponse

Part name	Part type	Optional	Description
None			

8.1.5.3 Referenced faults

ServiceException from 3GPP TS 29.199-1 [6]:

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

PolicyException from 3GPP TS 29.199-1 [6]:

- POL0001: Policy error.

8.1.6 Operation: getParticipantInfo

The invocation of **getParticipantInfo** requests information concerning the current status of the participant specified by **participant**, in the multi-media conference call identified by **callSessionIdentifier**.

8.1.6.1 Input message: getParticipantInfoRequest

Part name	Part type	Optional	Description
CalSessionIdentifier	xsd:string	No	Call session identifier; the Conference identifier
Participant	xsd:anyURI	No	Participant

8.1.6.2 Output message: getParticipantInfoResponse

Part name	Part type	Optional	Description
result	ParticipantInfo	No	Status of the participant

8.1.6.3 Referenced faults

ServiceException from 3GPP TS 29.199-1 [6]:

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

PolicyException from 3GPP TS 29.199-1 [6]:

- POL0001: Policy error.

8.1.7 Operation: getParticipants

The invocation of **getParticipants** requests information concerning the current status of each participant of the multi-media conference call identified by **callSessionIdentifier**. The output includes participants already disconnected from the conference (if any).

8.1.7.1 Input message: getParticipantsRequest

Part name	Part type	Optional	Description
CallSessionIdentifier	xsd:string	No	Call session identifier; the Conference identifier

8.1.7.2 Output message: getParticipantsResponse

Part name	Part type	Optional	Description
result	ParticipantInfo [0..unbounded]	Yes	Array containing status information for each participant

8.1.7.3 Referenced faults

ServiceException from 3GPP TS 29.199-1 [6]:

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

PolicyException from 3GPP TS 29.199-1 [6]:

- POL0001: Policy error.

8.1.8 Void

8.1.9 Void

9 Fault definitions

9.1 PolicyException

9.1.1 POL0240: Too many participants

Too many participants.

Name	Description
Message Id	POL0240
Text	Too many participants
Variables	None

9.1.2 Void

The fault code (POL0241) is reserved and shall not be used.

9.1.3 POL0242: Maximum duration exceeded

Name	Description
Message Id	POL0242
Text	Maximum duration exceeded. Maximum allowed is %1 seconds.
Variables	%1 – maximum duration set by service policy

9.2 ServiceException

9.2.1 Void

The fault code (SVC0210) is reserved and shall not be used.

9.2.2 Void

The fault code (SVC0211) is reserved and shall not be used.

10 Service policies

Name	Type	Description
MaximumDuration	common:TimeMetric	Maximum duration for which a conference may be set up.
MaximumParticipants	xsd:int	Maximum number of participants for which a conference may be set up.
ChargingSupported	xsd:boolean	Indicates whether charging is supported for the createConference operation

Annex A (normative): WSDL for Multimedia conference

The document/literal WSDL representation of this interface specification is compliant to 3GPP TS 29.199-1 [6] and is contained in text files (contained in archive 29199-12-700-doclit.zip) which accompanies the present document.

Annex B (informative): Description of Parlay X Web Services Part 12: Multimedia conference for 3GPP2 cdma2000 networks

This annex is intended to define the OSA Parlay X Web Services Stage 3 interface definitions and it provides the complete OSA specifications. It is an extension of OSA Parlay X Web Services specifications capabilities to enable operation in cdma2000 systems environment. They are in alignment with 3GPP2 Stage 1 requirements and Stage 2 architecture defined in:

[1] 3GPP2 X.S0011-D: 'cdma2000 Wireless IP Network Standard ", Version 1.1

[2] 3GPP2 S.R0037-0: "IP Network Architecture Model for cdma2000 Spread Spectrum Systems", Version 3.0

[3] 3GPP2 X.S0013-A: "All-IP Core Network Multimedia Domain"

These requirements are expressed as additions to and/or exclusions from the 3GPP Release 7 specification.
The information given here is to be used by developers in 3GPP2 cdma2000 network architecture to interpret the 3GPP OSA specifications.

B.1 General Exceptions

The terms 3GPP and UMTS are not applicable for the cdma2000 family of standards. Nevertheless these terms are used (3GPP TR 21.905) mostly in the broader sense of "3G Wireless System". If not stated otherwise there are no additions or exclusions required.

CAMEL mappings are not applicable for cdma2000 systems.

B.2 Specific Exceptions

B.2.1 Clause 1: Scope

There are no additions or exclusions.

B.2.2 Clause 2: References

There are no additions or exclusions.

B.2.3 Clause 3: Definitions and abbreviations

There are no additions or exclusions.

B.2.4 Clause 4: Detailed service description

There are no additions or exclusions.

B.2.5 Clause 5: Namespaces

There are no additions or exclusions.

B.2.6 Clause 6: Sequence diagrams

There are no additions or exclusions.

B.2.7 Clause 7: XML Schema data type definition

There are no additions or exclusions.

B.2.8 Clause 8: Web Service interface definition

There are no additions or exclusions.

B.2.9 Clause 9: Fault definitions

There are no additions or exclusions.

B.2.10 Clause 10: Service policies

There are no additions or exclusions.

B.2.11 Annex A (normative): WSDL for Multimedia conference

There are no additions or exclusions.

Annex C (informative): Change history

Change history								
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Cat**	**Old**	**New**
Sep 2004	CN_25	NP-040360	--	--	Draft v100 submitted to TSG CN#25 for Approval.	--	1.0.0	6.0.0
Jun 2005	CT_28	CP-050221	0001	--	Optionals for Part 12	F	6.0.0	6.1.0
Dec 2005	CT_30	CP-050577	0002	--	Inconsistent part naming in PX response messages	F	6.1.0	6.2.0
Jun 2006	CT_32	CP-060195	0003	--	Change reference to OSA Stage 2 from 23.127 to 23.198	F	6.2.0	6.3.0
Dec 2006	CT_34	CP-060593	0004	--	Add missing ServiceExceptions to Multimedia Conference Web Service	F	6.3.0	6.4.0
Dec 2006	CT_34	CP-060593	0005	--	Correct the ParticipantInfo structure of Multimedia Conference Web Service	F	6.3.0	6.4.0
Mar 2007	CT_35	CP-070045	0006	--	Add OSA Parlay Web Services support for 3GPP2 networks	F	6.4.0	6.5.0
Mar 2007	CT_35	CP-070045	0007	--	Corrections to namespace version numbers	F	6.4.0	6.5.0
Mar 2007	CT_35	CP-070048	0008	--	Move support for add/delete media out of Multimedia conference	C	6.5.0	7.0.0
Mar 2007	--	--	--	--	Editorial: Aligned 5 Namespaces	--	7.0.0	7.0.1
Jun 2007	--	--	--	--	Renamed in Introduction Part 18:"Device management" to "Device Capabilities and Configuration"	--	7.0.1	7.0.2

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V7.0.2	June 2007	Publication