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Technical Report

Open Service Access (OSA);
Mapping of Parlay X Web Services to Parlay/OSA APIs;
Part 3: Call Notification Mapping;
Sub-part 2: Mapping to Multi-Party Call Control

Reference

DTR/TISPAN-01021-03-02-OSA

Keywords

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Foreword

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

The present document is part 3, sub-part 2 of a multi-part deliverable covering Open Service Access (OSA); Mapping of Parlay X Web Services to Parlay/OSA APIs, as identified below:

Part 1:   "Common Mapping";

Part 2:   "Third Party Call Mapping";

Part 3:   "Call Notification Mapping";

    Sub-part 1:   "Mapping to Generic Call Control";

    Sub-part 2:   "Mapping to Multi-Party Call Control";

Part 4:   "Short Messaging Mapping";

Part 5:   "Multimedia Messaging Mapping";

Part 6:   "Payment Mapping";

Part 7:   "Account Management Mapping";

Part 8:   "Terminal Status Mapping";

Part 9:   "Terminal Location Mapping";

Part 10:   "Call Handling Mapping";

Part 11:   "Audio Call Mapping";

Part 12:   "Multimedia Conference Mapping";

Part 14:   "Presence Mapping".

NOTE: Part 13 has not been provided as there is currently no defined mapping between ES 202 391-13 [4] and the Parlay/OSA APIs. If a mapping is developed, it will become part 13 of this series.

The present document has been defined jointly between ETSI, The Parlay Group (http://www.parlay.org) and the 3GPP.

1 Scope

The present document specifies the mapping of the Parlay X Call Notification Web Service to the Parlay/OSA Multi-Party Call Control Service Capability Feature (SCF).

The Parlay X Web Services provide powerful yet simple, highly abstracted, imaginative, telecommunications functions that application developers and the IT community can both quickly comprehend and use to generate new, innovative applications.

The Open Service Access (OSA) specifications define an architecture that enables application developers to make use of network functionality through an open standardized interface, i.e. the Parlay/OSA APIs.

2 References

For the purposes of this Technical Report (TR), the following references apply:

[1]   ETSI TR 121 905: "Universal Mobile Telecommunications System (UMTS); Vocabulary for 3GPP Specifications (3GPP TR 21.905)".

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

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

[3]   ETSI TR 102 397-1: " Open Service Access (OSA); Mapping of Parlay X Web Services to Parlay/OSA APIs; Part 1: Common Mapping".

[4]   ETSI ES 202 391-13: "Open Service Access (OSA); Parlay X Web Services; Part 13: Address List Management".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 102 397-1 [3] apply.

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TR 102 397-1 [3] apply.

4 Mapping description

The Call Notification capability can be implemented with the Parlay/OSA Multi-Party Call Control SCF.

It is applicable to ETSI OSA 1.x/2.x/3.x, Parlay/OSA 3.x/4.x/5.x and 3GPP Releases 4 to 6.

5 Sequence diagrams

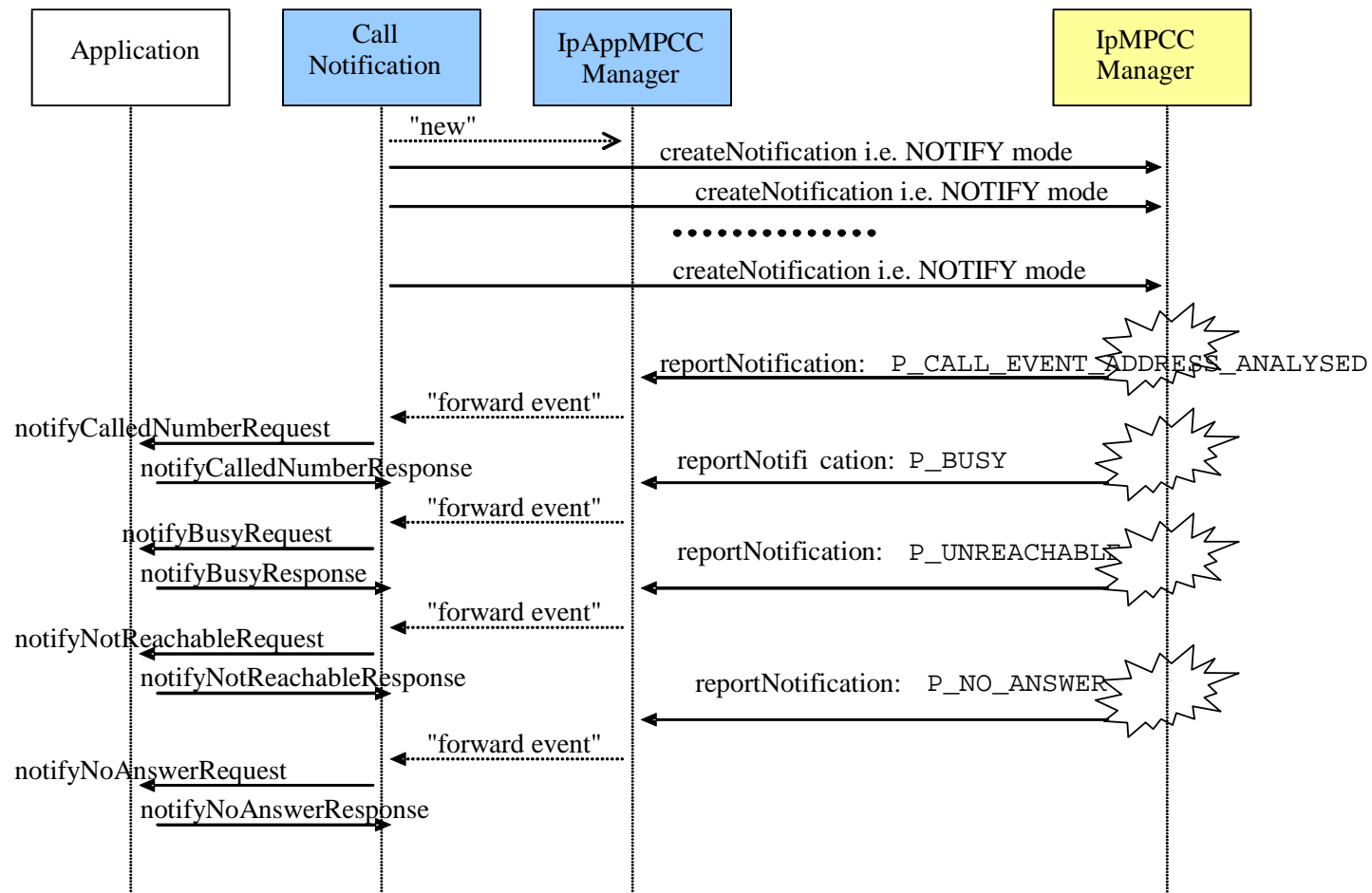## 5.1 Notification of a network-related Call Event

Figure 1

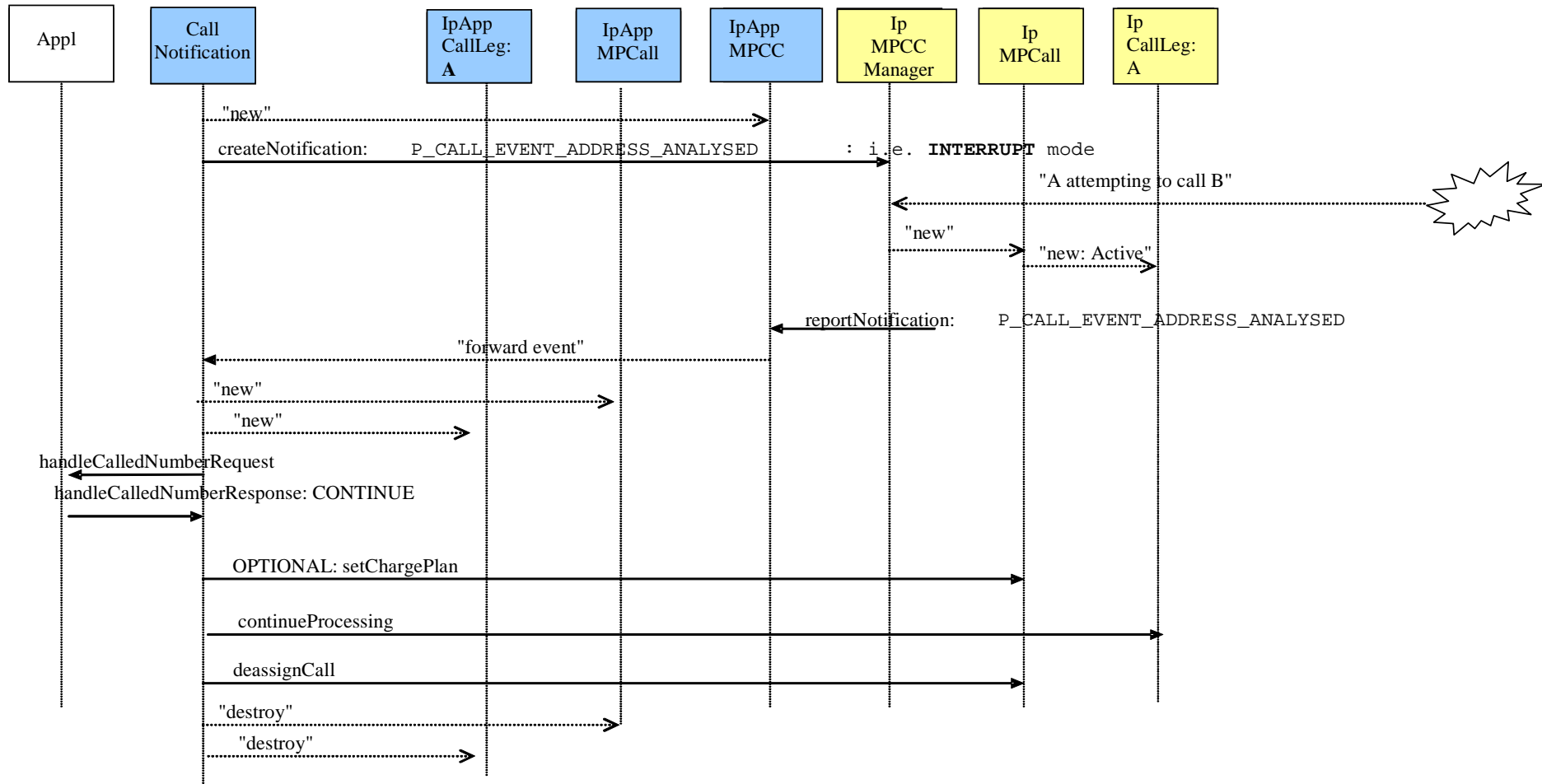## 5.2   Handling a network-related call event - Action: Continue

Figure 2

5.3 Handling a network-related call event - Action: Route

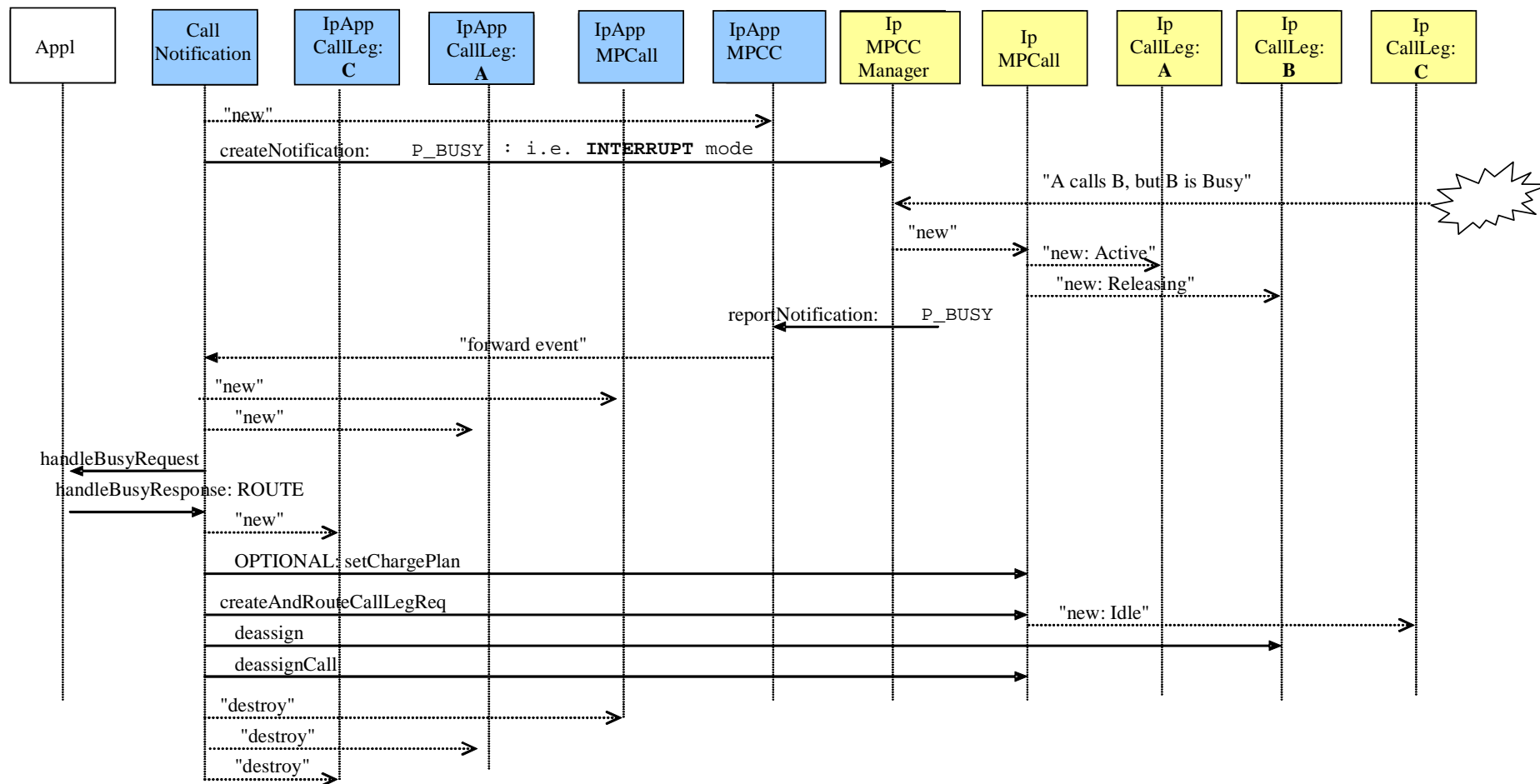**Figure 3**

5.4   Handling a network-related call event - Action: End Call
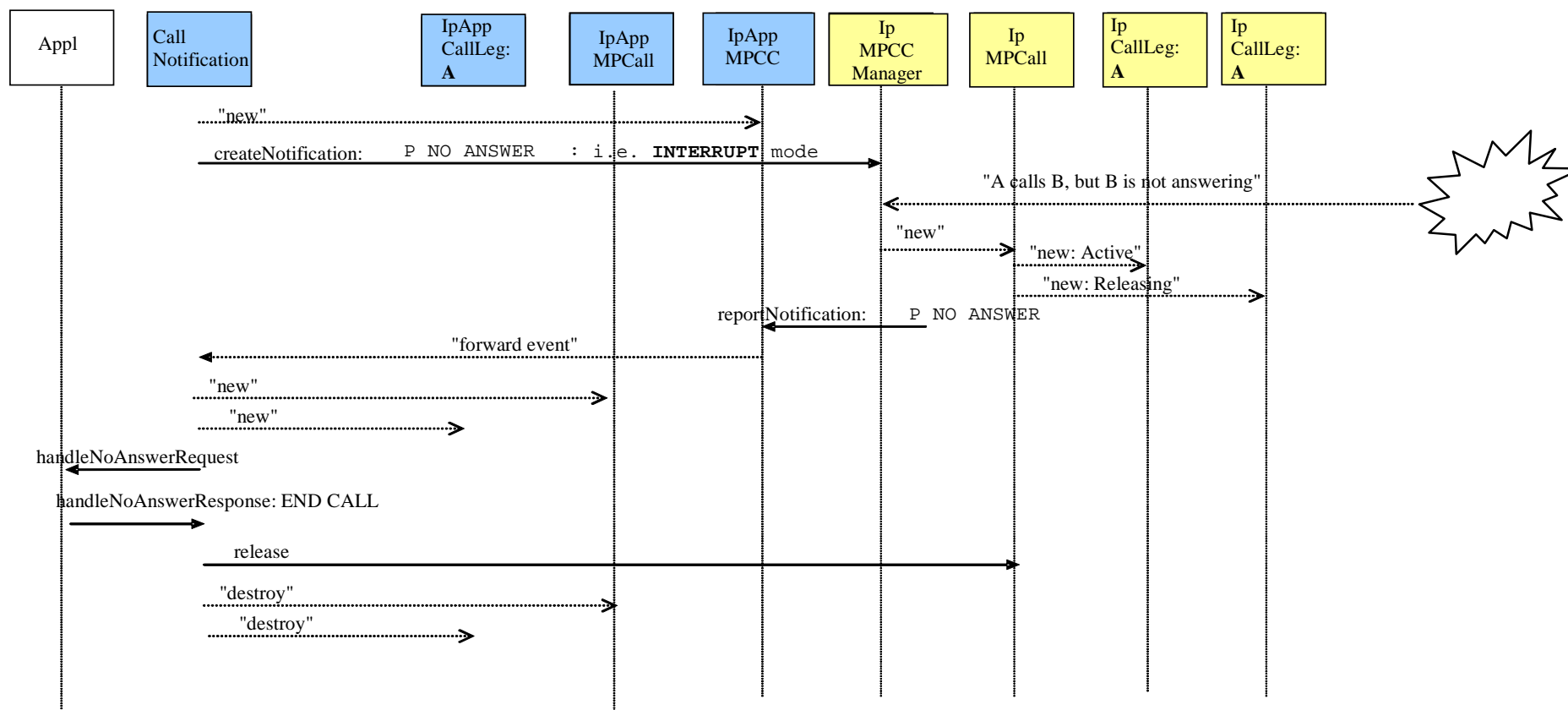

Figure 4

6   Detailed mapping information

6.1   Operations

6.1.1   notifyXXX

The sequence diagram in clause 5.1 illustrates the flow for any of the **notifyXXX** operations, namely:

- notifyCalledNumber;

- notifyBusy;

- notifyNotReachable;

- notifyNoAnswer.

Each **notifyXXX** operation is mapped from the Parlay/OSA method:
`IpAppMultiPartyCallControlManager.reportNotification`.

6.1.1.1   Mapping from `IpAppMultiPartyCallControlManager.reportNotification`

The `IpAppMultiPartyCallControlManager.reportNotification` method is invoked with the following parameters.

Name	Type	Comment
callReference	TpMultiParty CallIdentifier	Specifies the reference to the call interface to which the notification relates. Since the notification is in NOTIFY mode, this parameter should be ignored by the Call Notification web service; and is is not mapped to the **notifyXXXRequest** message.
callLegReferenceSet	TpCallLegIdentifierSet	Specifies the set of all call leg references associated with the call. Since the notification is in NOTIFY mode, this parameter should be ignored by the Call Notification web service; and is is not mapped to the **notifyXXXRequest** message.
notificationInfo	TpCallNotificationInfo	Specifies event-related data, which is mapped to the **notifyXXXRequest** message as described in clause 6.1.1.2.
assignmentID	TpAssignmentID	Specifies the assignment id returned after an earlier invocation of `IpMultiPartyCallControlManager.createNotification` method, when the criteria associated with this call-related event were activated in the network. It is used internally by the Call Notification web service to correlate the Parlay/OSA callbacks.

The result from `IpAppMultiPartyCallControlManager.reportNotification` is of type `TpAppMultiPartyCallBack`, but is null (`P_APP_CALLBACK_UNDEFINED`) for event notifications in NOTIFY mode.

6.1.1.2   Mapping from `TpCallNotificationInfo` to notifyXXXRequest

The elements of the `TpCallNotificationInfo` data type are mapped to the parts of the **notifyXXXRequest** message as follows.

Name	Type	Comment
CallNotification ReportScope	TpCallNotification ReportScope	Specifies the destination address and originating address of the call, which are mapped to the URIs provided in the **CalledParty** part and **CallingParty** part, respectively, of **notifyXXXRequest**, as described in TR 102 397-1 [3].
CallAppInfo	TpCallAppInfoSet	Not mapped.
CallEventInfo	TpCallEventInfo	Contains the event which is reported, which is mapped to the **notifyXXXRequest** message as described in the following table.

The elements of the `TpCallEventInfo` data type are mapped to the parts of the **notifyXXXRequest** message as follows.

Name	Type	Comment
CallEventType	TpCallEventType	Defines the specific **notifyXXXRequest** message to send, i.e.: **XXX= CalledNumber** for `P_CALL_EVENT_ADDRESS_ANALYSED`; **XXX= Busy**, **NotReachable** or **NoAnswer** for `P_CALL_EVENT_TERMINATING_RELEASE`.
AdditionalCallEvent Info	TpCallAdditionalEvent Info	For `P_CALL_EVENT_ADDRESS_ANALYSED` this element contains the called address, which is redundant her and ignored. For `P_CALL_EVENT_TERMINATING_RELEASE`, this element contains the terminating release cause, `P_BUSY`, `P_NO_ANSWER`, or `P_NOT_REACHABLE`, and identifies the specific **notifyXXXRequest** message to send.
CallMonitorMode	TpCallMonitorMode	Not mapped. This element has a value of "`P_CALL_MONITOR_MODE_NOTIFY`".
CallEventTime	TpDateAndTime	Not mapped.

6.1.2   handleXXX

The sequence diagrams in clauses 5.2 through 5.4 illustrates the flow for any of the **handleXXX** operations.

A **handleXXX** operation is synchronous from the Call Notification Web Service"s point of view.

As defined for the **notifyXXXrequest** message in clause 6.1.1, each **handleXXXrequest** message is mapped from the Parlay/OSA method: `IpAppMultiPartyCallControlManager.reportNotification`. However in this case the `notificationInfo.CallEventInfo.CallMonitorMode` element has a value of "`P_CALL_MONITOR_MODE_INTERRUPT`".

The **handleXXXresponse** message is mapped to one or more of the following Parlay/OSA methods, depending on the value of the **Action** part:

- `IpMultiPartyCall.createAndRouteCallLegReq`, if the **ActionToPerform** parameter of the **Action** part = **Route.**

- `IpMultiPartyCall.setChargePlan`, if:

  - the optional **Charging** parameter of the **Action** part is present; and

  - the **ActionToPerform** parameter of the **Action** part = **Route or Continue.**

- `IpCallLeg.continueProcessing`, if the **ActionToPerform** parameter of the **Action** part = **Continue.**

- `IpMultiPartyCall.deassignCall`, if the **ActionToPerform** parameter of the **Action** part = **Route or Continue.**

- `IpMultiPartyCall.release`, if the **ActionToPerform** parameter of the **Action** part = **EndCall.**

6.1.2.1   Mapping to `IpMultiPartyCall.createAndRouteCallLegReq`

The `IpMultiPartyCall.createAndRouteCallLegReq` method is invoked with the following parameters.

Name	Type	Comment
callSessionID	TpSessionID	Not mapped: derived from the `callReference` parameter of `IpAppMultiPartyCallControlManager.reportNotification`.
eventsRequested	TpCallEventRequest Set	Not mapped. [Requests NO call-related event reports].
targetAddress	TpAddress	Specifies the destination leg to which the call should be routed. It is constructed based on the URI provided in the **RoutingAddress** parameter of the **Action** part of the **handleXXXResponse** message, mapped as described in TR 102 397-1 [3].
originatingAddress	TpAddress	Not mapped: derived from the `notificationInfo` parameter of `IpAppMultiPartyCallControlManager.reportNotification`.
appInfo	TpCallAppInfoSet	Not mapped: derived from the `notificationInfo` parameter of `IpAppMultiPartyCallControlManager.reportNotification`.
appLegInterface	IpAppCallLegRef	Not mapped.

The result from `IpMultiPartyCall.createAndRouteCallLegReq` is of type `TpCallLegIdentifier` and is not mapped to the Parlay X interface.

Parlay exceptions thrown by `IpMultiPartyCall.createAndRouteCallLegReq` are not mapped to Parlay X exceptions.

6.1.2.2   Mapping to `IpMultiPartyCall.setCallChargePlan`

The `IpMultiPartyCall.setCallChargePlan` method is invoked with the following parameters.

Name	Type	Comment
callSessionID	TpSessionID	Not mapped: derived from the `callReference` parameter of `IpAppMultiPartyCallControlManager.reportNotification`.
callChargePlan	TpCallChargePlan	Specifies the charge plan to use. It is constructed based on the values provided in the optional **Charging** parameter of the **Action** part of the **handleXXXResponse** message. See the following table for details.

The `callChargePlan` parameter is constructed as follows.

Name	Type	Comment
ChargeOrderType	TpCallChargeOrderCategory	Not mapped.
TransparentCharge	TpOctetSet	Specifies an operator-specific charge plan. It is constructed using the value of the **ChargingInformation.contract** element provided in the **Charging** parameter.
ChargePlan	TpInt32	Not mapped.
AdditionalInfo	TpOctetSet	Descriptive string sent to billing system. It is constructed using the value of the **ChargingInformation.description** element provided in the **Charging** parameter. (May optionally include values of other elements of the **Charging** parameter.)
PartyToCharge	TpCallPartyToChargeType	Not mapped.
PartyToCharge AdditionalInfo	TpCallPartyToChargeAdditional Info	Not mapped.

Parlay exceptions thrown by `IpMultiPartyCall.setCallChargePlan CallChargePlan` are not mapped to Parlay X exceptions.

6.1.2.3   Mapping to `IpCallLeg.continueProcessing`

The `IpCallLeg.continueProcessing` method is invoked with the following parameters.

Name	Type	Comment
callLegSessionID	TpSessionID	Not mapped: derived from the `callLegReferenceSet` parameter of `IpAppMultiPartyCallControlManager.reportNotification`.

Parlay exceptions thrown by `IpCallLeg.continueProcessing` are not mapped to Parlay X exceptions.

6.1.2.4   Mapping to `IpMultiPartyCall.deassignCall`

The `IpMultiPartyCall.deassignCall` method is invoked with the following parameters.

Name	Type	Comment
callSessionID	TpSessionID	Not mapped: derived from the `callReference` parameter of `IpAppMultiPartyCallControlManager.reportNotification`.

Parlay exceptions thrown by `IpMultiPartyCall.deassignCall` are not mapped to Parlay X exceptions.

6.1.2.5   Mapping to `IpMultiPartyCall.release`

The `IpMultiPartyCall.release` method is invoked with the following parameters.

Name	Type	Comment
callSessionID	TpSessionID	Not mapped: derived from the `callReference` parameter of `IpAppMultiPartyCallControlManager.reportNotification`.
cause	TpReleaseCause	Not mapped. Value should indicate application-directed termination of the call attampt: default is `P_UNDEFINED`.

Parlay exceptions thrown by `IpMultiPartyCall.release` are not mapped to Parlay X exceptions.

6.2   Exceptions

For the present document, the mapping of Parlay/OSA API method exceptions to Parlay X Web Service exceptions is null.

7   Additional notes

No additional notes are provided.

History

Document history		
V1.1.1	August 2005	Publication