

Parlay X MMTel Extensions

INTERWORK DESCR

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1 Document History

Rev	Date	Sign	Comment
A	2013-04-10	EADAMGR	Document cloned from 2/155 19-CRA 119 2109 rev B. Added support of enhanced third party call.

2 Scope and Purpose

2.1 Scope

How to trigger a HandleCalledNumberRequest based on a SIP INVITE is out of scope for this document.

Authentication and authorization are also out of scope.

2.2 Interface Entities

MTAS can allow an external application server to influence calls. This is done using Parlay X APIs. When using the Parlay X APIs, MTAS can have the role as both client and server depending on the API that is currently used.

This document describes how MTAS deploys this interface.

Any routers or proxies that may be installed between MTAS and the External Parlay X application are excluded from the scope of this document.

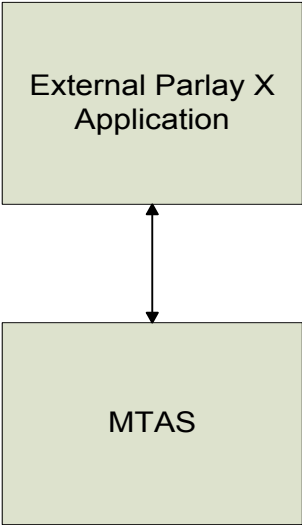


Figure 1 MTAS and External Parlay X application connectivity

2.3 Interface Role

In the context of the Parlay X interface, the role of MTAS can be as a client as well as a server.

For the parts of the Parlay X interface covered by this document, MTAS has the role as client.

2.4 Services

Table 1: Offered Services

Offered Service as Parlay X server	Description
Third Party Call	Setup a call between two participants.

Table 2: Used Services

Used Service as Parlay X client	Description
Call Direction	Determine how a call is to be routed.

2.5 Encapsulation and Addressing

2.5.1 Parlay X Interface

The protocol on the Parlay X interface is defined by 3GPP and is described in [1], [2] and [3].

MTAS supports SOAP version 1.1. On network layer either IPv4 or IPv6 can be used. In HTTP headers and bodies IPv4 and IPv6 addresses can be mixed.

The services used on this interface are listed in Table 2.

The services offered on this interface are listed in Table 1

Only a subset of the services are used/offered by MTAS. The subset is described in Table 3 and Table 4.

2.5.2 HTTP Content-Type

MTAS expects the Content-Type: text/xml for all SOAP messages.

2.5.3 Parlay X port

MTAS opens port 9080, by default, for SOAP messages.

3 Procedures

3.1 Overview

The used service is specified by the operations used on the interface. The used service operation is:

Table 3 Used Operations

Service	Operation
Call Direction	HandleCalledNumber

The offered service is specified by the operations offered on the interface. The offered service operations are:

Table 4 Offered Operations

Service	Operation
Third Party Call	MakeCallSession
Third Party Call	EndCallSession
Third Party Call	GetCallSessionInformation

3.2 Lower Level Procedures

N/A

3.3 HandleCalledNumberRequest

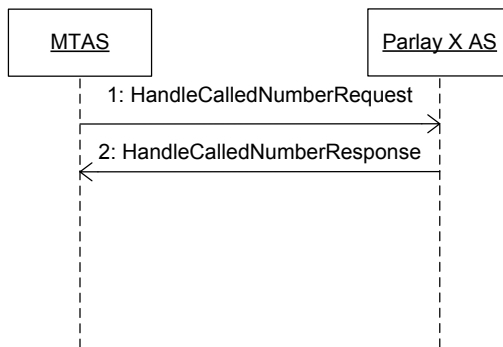


Figure 2 HandleCalledNumberRequest

1. MTAS sends a request on how to handle the call.
2. The Parlay X AS sends information about how the call shall proceed.

3.4 MakeCallSessionRequest

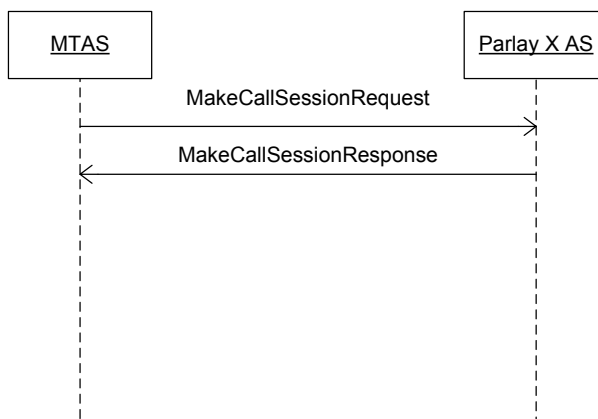


Figure 3 MakeCallSessionRequest

1. MTAS receives a request for a third party call setup.
2. MTAS sends a response.

3.5 EndCallSessionRequest

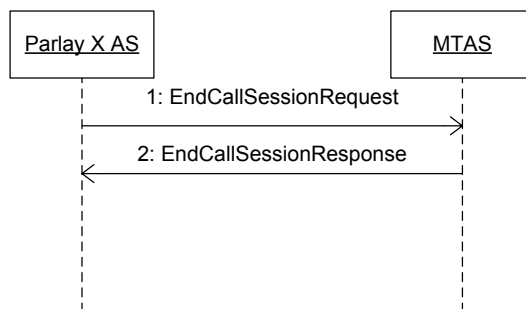


Figure 4 EndCallSessionRequest

1. MTAS receives a request to end a call session.
2. MTAS sends a response.

3.6 GetCallSessionInformationRequest

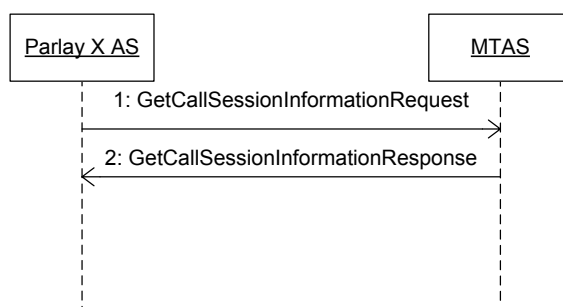


Figure 5 GetCallSessionInformationRequest

1. MTAS receives a request for information about a call session.
2. MTAS sends a response.

4 Information Model

4.1 General

This section describes the request that is sent by MTAS and the responses received by MTAS.

4.2 Call Direction Service

4.2.1 HandleCalledNumber

MTAS uses the following parameters in the HandleCalledNumberRequest:

Table 5 Parameters for HandleCalledNumberRequest

Parameter	M/O	Comment
Correlator	M	MTAS uses the same value as in the CalledParticipant element.
CallingParticipant	M	A normalized E.164 phone number.
CallingParticipantName	O	Not used by MTAS.
CalledParticipant	M	A normalized E.164 phone number.
CallSessionIdentifier	O	Not used by MTAS.

M=Mandatory, O=Optional

MTAS expects the following parameters in the HandleCalledNumberResponse:

Table 6 Parameters for HandleCalledNumberResponse

Parameter	M/O	Comment
Action	M	See Table 7 for details on the Action structure.

M=Mandatory, O=Optional

Table 7 Parameters for Action structure

Parameter	M/O	Comment
ActionToPerform	M	See Table 8 for details on the ActionValues enumeration.
RoutingAddress	O	Used by MTAS as Req-URI when routing the call further when the ActionToPerform is ActionValues::Route.
Charging	O	See Table 17 for details on the ChargingInformation structure.
MediaInfo	O	Not used by MTAS.

M=Mandatory, O=Optional

The ActionValues data type is an enumeration with the following values:

Table 8 Values for the ActionValues enumeration

Values
Route
Continue
EndCall

4.3 Third Party Call Service

4.3.1 MakeCallSession

MTAS supports the following parameters in the MakeCallSessionRequest:

Table 9 Parameters for MakeCallSession request

Parameter	M/O	Comment
CallParticipants	M	MTAS considers the first participant in the list as the A party and the second participant as B party.
CallingParticipantName	O	If set, Parlay X Third Party Call service enters enhanced mode. This parameter is considered as A party who pays for call but doesn't take part in it, the second participant as B party and the third participant as C party are taken from CallParticipants parameter. The value of this parameter must be an asserted PUI. It is used as P-Asserted-Identity and a user with this default Public User Identity must exist in the HSS.
Charging	O	See Table 17 for details on the ChargingInformation structure.
MediaInfo	O	Not supported by MTAS. Audio + video capabilities are always used.
ChangeMediaNotAllowed	M	Only the value false is supported.

M=Mandatory, O=Optional

MTAS sends the following parameters in the MakeCallSessionResponse:

Table 10 Parameters for MakeCallSession response

Parameter	M/O	Comment
CallSessionIdentifier	M	

M=Mandatory, O=Optional

MTAS can send the following exceptions in response to a MakeCallSessionRequest:

Table 11 Possible exceptions for a MakeCallSession request

Exception	Text
SVC0001	A service error occurred. Error code is PXTPC-002: Supported operation not found.
SVC0001	A service error occurred. Error code is PXTPC-003: callSessionIdentifier not found.

SVC0001	A service error occurred. Error code is PXTPC-004: Valid Px license missing.
SVC0001	A service error occurred. Error code is PXTPC-005: Third Party Call service is locked.
SVC0001	A service error occurred. Error code is %1" "PXTPC-006: callSessionIdentifier can not be empty.
SVC0002	Invalid input value for message part callParticipants. One participant is missing.
SVC0002	Invalid input value for message part callParticipants. Parsing error.
POL0001	A policy error occurred. Error code is POL-001: changeMediaNotAllowed can not be true.
POL0011	Media type not supported.
POL0012	Too many description entries specified in message part callParticipants.
POL0013	Duplicated addresses. - duplicated addresses.

4.3.2 EndCallSession

MTAS supports the following parameters in the EndCallSessionRequest:

Table 12 Parameters for EndCallSession request

Parameter	M/O	Comment
CallSessionIdentifier	M	

M=Mandatory, O=Optional

MTAS sends the following parameters in the EndCallSessionResponse:

Table 13 Parameters for EndCallSession response

Parameter	M/O	Comment
-		

M=Mandatory, O=Optional

4.3.3 GetCallSessionInformation

MTAS supports the following parameters in the GetCallSessionInformationRequest:

Table 14 Parameters for GetCallSessionInformation request

Parameter	M/O	Comment
CallSessionIdentifier	M	

M=Mandatory, O=Optional

MTAS sends the following parameters in the GetCallSessionInformationResponse:

Table 15 Parameters for GetCallSessionInformation response

Parameter	M/O	Comment
CallSession	M	See Table 18 for details on the CallSession structure.

M=Mandatory, O=Optional

4.3.4 Service Policies

MTAS applies the service policies listed in Table 16

Table 16 Service policies

Name	Value	Comment
ChargingAllowed	true	
StatusRetentionTime	0	The status of the call is cleared when both call legs are terminated.
ChangeMediaNotAllowed	false	
MaximumParticipants	2	
MultiMediaSupported	true	
MaximumDescriptions	1	
CallParticipantAddressesDuplicationNotAllowed	true	

4.4 Common

4.4.1 Charging

MTAS supports the following parameters in the ChargingInformation structure.

Table 17 Parameters for ChargingInformation structure

Parameter	M/O	Comment
Description	M	Descriptive text.
Currency	O	Not supported by MTAS
Amount	O	Not supported by MTAS
Code	O	MTAS expects an asserted identity in this element. This identity will be used as P-Asserted-Identity and a user with this default Public User Identity must exist in the HSS. In Third Party Call enhanced mode ChargingInformation is not used.

M=Mandatory, O=Optional

4.4.2 CallSession

MTAS supports the following parameters in the CallSession structure.

Table 18 Parameters for CallSession structure

Parameter	M/O	Comment
CallSessionIdentifier	M	
CallParticipantInformation	O	See Table 19 for details on the CallParticipantInformation structure.

M=Mandatory, O=Optional

4.4.3 CallParticipantInformation

MTAS supports the following parameters in the CallParticipantInformation structure.

Table 19 Parameters for CallParticipantInformation structure

Parameter	M/O	Comment
CallParticipantIdentifier	M	
CallParticipantStatus	M	See Table 20 for details on the CallParticipantStatus enumeration.
CallParticipantStartTime	O	Not supported by MTAS
CallParticipantDuration	O	Not supported by MTAS
CallParticipantTerminationCause	O	Not supported by MTAS
MediaInfo	O	Not supported by MTAS

M=Mandatory, O=Optional

4.4.4 CallParticipantStatus

MTAS supports the CallParticipantStatus enumeration with the following values:

Table 20 Values for the CallParticipantStatus enumeration

Values
CallParticipantInitial
CallParticipantConnected
CallParticipantTerminated

5 Formal Syntax or Schema

The formal syntax is described in [1], [2] and [3].

6 Related Standards

See [1], [2] and [3].

7 Terminology

7.1 Abbreviations

-

7.2 Definitions

-

8 References

- [1] 3GPP TS 29.199-1 v8.1.0, Common
- [2] 3GPP TS 29.199-2 v8.1.0, Third Party Call
- [3] 3GPP TS 29.199-3 v8.2.0, Call Notification

9 Annex A: Interface examples

9.1 HandleCalledNumber

9.1.1 HandleCalledNumberRequest

Below is an example of a HandleCalledNumberRequest from MTAS to the External Parlay X application.

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<SOAP-ENV:Envelope
```

```
  xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:ns3="http://www.csapi.org/schema/parlayx/call_notification/v3_1"
  xmlns:ns2="http://www.csapi.org/schema/parlayx/call_direction/v4_0/local"
  xmlns:ns4="http://www.csapi.org/schema/parlayx/common/v3_1"
  xmlns:ns1="http://www.csapi.org/wsdl/parlayx/call_direction/v4_0/service">
```

```
  <SOAP-ENV:Body>
```

```
    <ns2:handleCalledNumber>
```

```
      <ns2:correlator>+4922812345678</ns2:correlator>
```

```
      <ns2:callingParticipant>+46871920010</ns2:callingParticipant>
```

```
      <ns2:calledParticipant>+4922812345678</ns2:calledParticipant>
```

```
    </ns2:handleCalledNumber>
```

```
  </SOAP-ENV:Body>
```

```
</SOAP-ENV:Envelope>
```

9.1.2 HandleCalledNumberResponse

Below is an example of a HandleCalledNumber response from the External Parlay X application to MTAS.

```
<?xml version="1.0" encoding="UTF-8"?>

<SOAP-ENV:Envelope

xmlns:ns3='http://www.csapi.org/schema/parlayx/common/v4_0'
xmlns:ns4='http://www.csapi.org/schema/parlayx/call_notification/v4_0'
xmlns:SOAP-ENV='http://schemas.xmlsoap.org/soap/envelope/'
xmlns:ns2='http://www.csapi.org/schema/parlayx/call_direction/v4_0/local'
xmlns:ns3='http://www.csapi.org/schema/parlayx/common/v4_0'
xmlns:ns5='http://www.csapi.org/schema/parlayx/third_party_call/v4_0/local'>

  <SOAP-ENV:Body>

    <ns2:handleCalledNumberResponse>

      <ns4:result>

        <ns4:actionToPerform>Route</ns4:actionToPerform>

        <ns4:routingAddress>sip:bob@atlanta.com

          </ns4:routingAddress>

        </ns4:result>

      </ns2:handleCalledNumberResponse>

    </SOAP-ENV:Body>

  </SOAP-ENV:Envelope>
```

9.2 MakeCallSession

9.2.1 MakeCallSessionRequest

```
<?xml version="1.0" encoding="UTF-8"?>

<SOAP-ENV:Envelope

xmlns:SOAP-ENV='http://schemas.xmlsoap.org/soap/envelope/'
xmlns:ns2='http://www.csapi.org/schema/parlayx/call_direction/v4_0/local'
xmlns:ns5='http://www.csapi.org/schema/parlayx/third_party_call/v4_0/local'
xmlns:ns1='http://www.csapi.org/wsdl/parlayx/common/v4_0/faults'>

  <SOAP-ENV:Body>
```



```

<ns5:makeCallSession>

  <ns5:callParticipants>sip:A@ericsson.com</ns5:callParticipants>

  <ns5:callParticipants>sip:B@ericsson.com</ns5:callParticipants>

  <ns5:charging>

    <description>Descriptive text.</description>

    <code>sip:PxApplication@ericsson.com</code>

  </ns5:charging>

  <ns5:changeMediaNotAllowed>>false</ns5:changeMediaNotAllowed>

</ns5:makeCallSession>

</SOAP-ENV:Body>

</SOAP-ENV:Envelope>

```

9.2.2 MakeCallSessionRequest in enhanced Third Party Call

```

<?xml version="1.0" encoding="UTF-8"?>

<SOAP-ENV:Envelope

  xmlns:SOAP-ENV='http://schemas.xmlsoap.org/soap/envelope/'
  xmlns:ns2='http://www.csapi.org/schema/parlayx/call_direction/v4_0/local'
  xmlns:ns5='http://www.csapi.org/schema/parlayx/third_party_call/v4_0/local'
  xmlns:ns1='http://www.csapi.org/wsd/parlayx/common/v4_0/faults'>

  <SOAP-ENV:Body>

    <ns5:makeCallSession>

      <ns5:callParticipants>sip:B@ericsson.com</ns5:callParticipants>

      <ns5:callParticipants>sip:C@ericsson.com</ns5:callParticipants>

      <ns5:callingParticipantName>

        sip:A@ericsson.com

      </ns5:callingParticipantName>

      <ns5:charging>

        <description>Descriptive text.</description>

        <code>sip:PxApplication@ericsson.com</code>

```

```

        </ns5:charging>

        <ns5:changeMediaNotAllowed>>false</ns5:changeMediaNotAllowed>

    </ns5:makeCallSession>

</SOAP-ENV:Body>

</SOAP-ENV:Envelope>

```

9.2.3 MakeCallSessionResponse

```

<SOAP-ENV:Envelope

xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="http://www.csapi.org/schema/parlayx/third_party_call/v4_0/local">

    <SOAP-ENV:Header/>

    <SOAP-ENV:Body>

        <ns5:makeCallSessionResponse>

            <ns5:result>PxMtas-p65537t1298127071m504607c661s7</ns5:result>

        </ns5:makeCallSessionResponse>

    </SOAP-ENV:Body>

</SOAP-ENV:Envelope>

```

9.3 GetCallSessionInformation

9.3.1 GetCallSessionInformationRequest

```

<?xml version="1.0" encoding="UTF-8"?>

<SOAP-ENV:Envelope

xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns2="http://www.csapi.org/schema/parlayx/call_direction/v4_0/local"
xmlns:ns5="http://www.csapi.org/schema/parlayx/third_party_call/v4_0/local"
xmlns:ns1="http://www.csapi.org/wsd/parlayx/common/v4_0/faults">

    <SOAP-ENV:Body>

        <ns5:getCallSessionInformation>

            <ns5:callSessionIdentifier>PxMtas-p65537t1298127071m504607c661s7

```

```

        </ns5:callSessionIdentifier>

    </ns5:getCallSessionInformation>

</SOAP-ENV:Body>

</SOAP-ENV:Envelope>

```

9.3.2 GetCallSessionInformationResponse

```

<SOAP-ENV:Envelope

xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns5="http://www.csapi.org/schema/parlayx/third_party_call/v4_0/local">

    <SOAP-ENV:Header/>

    <SOAP-ENV:Body>

        <ns5:getCallSessionInformationResponse>

            <ns5:result>

                <callSessionIdentifier>PxMtas-p65537t1298127071m504607c661s7

                </callSessionIdentifier>

                <callParticipantInformation>

                    <callParticipantIdentifier>sip:A @ericsson.com

                    </callParticipantIdentifier>

                    <callParticipantStatus>CallParticipantInitial

                    </callParticipantStatus>

                </callParticipantInformation>

                <callParticipantInformation>

                    <callParticipantIdentifier>sip:B @ericsson.com

                    </callParticipantIdentifier>

                    <callParticipantStatus>CallParticipantInitial

                    </callParticipantStatus>

                </callParticipantInformation>

            </ns5:result>

```

```
</ns5:getCallSessionInformationResponse>
```

```
</SOAP-ENV:Body>
```

```
</SOAP-ENV:Envelope>
```

9.4 EndCallSession

9.4.1 EndCallSessionRequest

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<SOAP-ENV:Envelope
```

```
xmlns:SOAP-ENV='http://schemas.xmlsoap.org/soap/envelope/'
```

```
xmlns:ns2='http://www.csapi.org/schema/parlayx/call_direction/v4_0/local'
```

```
xmlns:ns5='http://www.csapi.org/schema/parlayx/third_party_call/v4_0/local'
```

```
xmlns:ns1='http://www.csapi.org/wsd/parlayx/common/v4_0/faults'>
```

```
<SOAP-ENV:Body>
```

```
<ns5:endCallSession>
```

```
<ns5:callSessionIdentifier> PxMtas-p65537t1298127071m504607c661s7
```

```
</ns5:callSessionIdentifier>
```

```
</ns5:endCallSession>
```

```
</SOAP-ENV:Body>
```

```
</SOAP-ENV:Envelope>
```

9.4.2 EndCallSessionResponse

```
<SOAP-ENV:Envelope
```

```
xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
```

```
xmlns:ns5="http://www.csapi.org/schema/parlayx/third_party_call/v4_0/local">
```

```
<SOAP-ENV:Header/>
```

```
<SOAP-ENV:Body>
```

```
<ns5:endCallSessionResponse/>
```

```
/SOAP-ENV:Body>
```

```
</SOAP-ENV:Envelope>
```