

**Open Service Access (OSA);
Parlay X Web Services;
Part 10: Call Handling**



Reference

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Contents

Intellectual Property Rights	4
Foreword.....	4
1 Scope	5
2 References	5
3 Definitions and abbreviations.....	5
3.1 Definitions	5
3.2 Abbreviations	5
4 Detailed service description	6
5 Namespaces.....	6
6 Sequence diagrams	7
6.1 Setup call handling, query and clear rules.....	7
7 XML Schema data type definition	8
7.1 ConditionalForward structure.....	8
7.2 UnconditionalForward structure.....	8
7.3 InteractionContent enumeration	8
7.4 TextInteraction structure	8
7.5 VoiceInteraction union	8
7.6 CallHandlingRules structure	9
7.7 SetRulesResult structure.....	9
8 Web Service interface definition.....	9
8.1 Interface: CallHandling	9
8.1.1 Operation: SetRules	9
8.1.1.1 Input message: SetRulesRequest.....	9
8.1.1.2 Output message: SetRulesResponse.....	9
8.1.1.3 Referenced faults.....	10
8.1.2 Operation: SetRulesForGroup	10
8.1.2.1 Input message: SetRulesForGroupRequest	10
8.1.2.2 Output message: SetRulesForGroupResponse	10
8.1.2.3 Referenced faults.....	10
8.1.3 Operation: GetRules	10
8.1.3.1 Input message: GetRulesRequest	11
8.1.3.2 Output message: GetRulesResponse	11
8.1.3.3 Referenced faults.....	11
8.1.4 Operation: ClearRules.....	11
8.1.4.1 Input message: ClearRulesRequest	11
8.1.4.2 Output message: ClearRulesResponse	11
8.1.4.3 Referenced faults.....	11
9 Fault definitions.....	12
10 Service policies	12
Annex A (normative): WSDL for Call Handling	13
Annex B (informative): Bibliography	14
History	15

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Foreword

This ETSI Standard (ES) has been produced by ETSI Technical Committee Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN), and is now submitted for the ETSI standards Membership Approval Procedure.

The present document is part 10 of a multi-part deliverable covering 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".

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

The present document is equivalent to 3GPP TS 29.199-10 V6.0.0 (Release 6).

1 Scope

The present document is part 10 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 present document specifies the Call Handling 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

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 and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

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

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

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

[2] ETSI ES 202 391-1: "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 ES 202 391-1 [2] apply.

3.2 Abbreviations

For the purposes of the present document, the abbreviations defined in ES 202 391-1 [2] apply.

4 Detailed service description

The Call Handling Web Service provides a mechanism for an application to specify how calls are to be handled for a specific number. Call handling includes commonly utilized actions:

- Call accepting - only accepting calls from a list of numbers.
- Call blocking - blocking calls if they are on a blocking list.
- Conditional call forwarding - changing the destination of a call to another number for a specific calling number.
- Unconditional call forwarding - changing the destination of a call to another number.
- Play audio - initiate audio with the caller (e.g. an announcement or menu).

The set of rules are provided to the Web Service which is responsible for establishing the call handling function. Only one action is taken for a call, and once this action is started the rules will stop being processed.

There is a specific order in which these rules are processed, providing a predictable call handling expectation for rules provided. The processing is done as follows:

- 1) Call accepting determines if the call is accepted or rejected. If the caller is not on the accept list, the call is rejected and rule processing ends.
- 2) Call blocking determines if the call is rejected. If the caller is on the block list, the call is rejected and rule processing ends.
- 3) Conditional call forwarding - each calling number that has a specific forwarding instruction is checked, and the call is forwarded on a match, and rule processing ends.
- 4) Unconditional call forwarding - the called number is changed to the call forwarding number and rule processing ends.
- 5) Play audio - the call is handled by a voice system, which handles all further processing of the call. Rule processing ends when the call is handed off.
- 6) Continue processing call, to complete call to the original called number.

If no rules are specified in a particular area, then that step is skipped. If the rule processing ends without any action being indicated, then the call will continue to the called number.

Call Handling provides its function without further interaction with the Application. This is in contrast to the Call Notification interfaces which provide notifications to the Application for processing.

5 Namespaces

The Call Handling interface uses the namespace:

`www.csapi.org/wsd/parlayx/call_handling/v2_0`

The data types are defined in the namespace:

`www.csapi.org/schema/parlayx/call_handling/v2_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 Setup call handling, query and clear rules

Pattern: Request / Response.

This sequence shows the application setting up Call Handling with rules to be processed, querying those rules and clearing them.

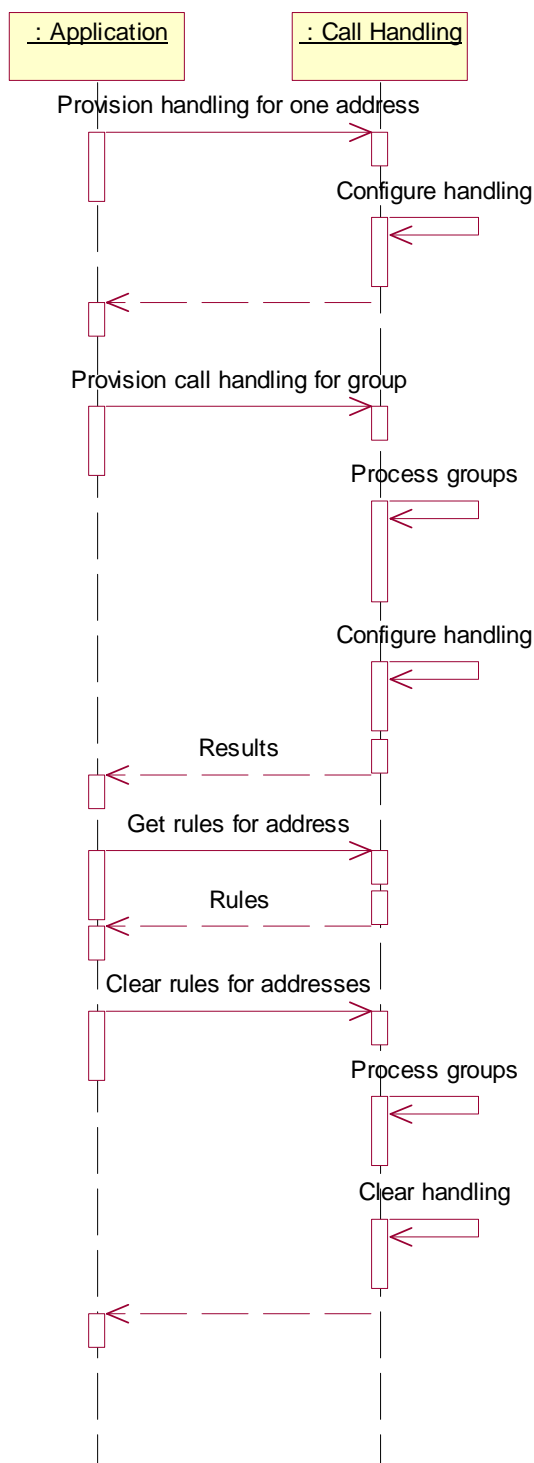


Figure 1

7 XML Schema data type definition

7.1 ConditionalForward structure

Information on handling of forwarding for specific calling numbers.

Element name	Element type	Description
CallingAddress	xsd:anyURI	Address that call is placed from
ForwardingAddress	xsd:anyURI	Address to forward call to
OnBusyAddress	xsd:anyURI	If line is busy at forwarding address, forward to this address
OnNoAnswerAddress	xsd:anyURI	If no answer at forwarding address, forward to this address

7.2 UnconditionalForward structure

Information for handling of forwarding unconditionally.

Element name	Element type	Description
ForwardingAddress	xsd:anyURI	Address to forward call to
OnBusyAddress	xsd:anyURI	If line is busy at forwarding address, forward to this address
OnNoAnswerAddress	xsd:anyURI	If no answer at forwarding address, forward to this address

7.3 InteractionContent enumeration

The following are the types of content that may be used for user interaction.

Enumeration	Description
Text	Text to be processed by a Text-To-Speech engine
VoiceXml	VoiceXML to be processed by a VoiceXML browser
Audio	Audio file to be played by an audio processor

7.4 TextInteraction structure

Information for processing by a text to speech engine.

Element name	Element type	Description
Text	xsd:string	Text to play through a Text-To-Speech engine
Language	xsd:string	Language of text

7.5 VoiceInteraction union

For a call that is to be handled by an interactive voice system, the information to provide to that system.

Element name	Element type	Description
UnionElement	InteractionContent	Type of content provided (one of the following)
TextInfo	TextInteraction	Announcement to play through a Text-To-Speech engine
VoiceXml	xsd:anyURI	Location of VoiceXML to use in a VoiceXML browser
Audio	xsd:anyURI	Location of audio content (WAV or MP3 file)

7.6 CallHandlingRules structure

Structure containing set of rules that are applied when the call is handled.

Element name	Element type	Description
AcceptList	xsd:anyURI [0..unbounded]	List of addresses to accept calls from
BlockList	xsd:anyURI [0..unbounded]	List of addresses to block calls from
ForwardList	ConditionalForward [0..unbounded]	List of conditional forwarding addresses and destinations
Forward	UnconditionalForward	Unconditional call forwarding address
VoiceInteractionContent	VoiceInteraction	Forward call to a user interaction system with information on content

7.7 SetRulesResult structure

Result of SetRulesRequest for each address.

Element name	Element type	Description
Address	xsd:anyURI	Address to be set
Successful	xsd:boolean	Successfully set rules or not
Error	common:ServiceError	Error message if unsuccessful

8 Web Service interface definition

8.1 Interface: CallHandling

CallHandling provides a rule based processing capability that is accessible to Applications through a set of operations that allow definition of discrete rules.

8.1.1 Operation: SetRules

Set the call handling rules for an address (the destination for the call). If a set of rules is already in place for any of the **Address**, then this operation will replace the old rules with the set provided in this operation.

The **Address** may not specify a group. If a group is specified, a **PolicyException** will be returned.

8.1.1.1 Input message: SetRulesRequest

Part name	Part type	Description
Address	xsd:anyURI	Address to handle calls for
Rules	CallHandlingRules	Rules to apply for this address

8.1.1.2 Output message: SetRulesResponse

Part name	Part type	Description
None		

8.1.1.3 Referenced faults

ServiceException from ES 202 391-1 [2]:

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

PolicyException from ES 202 391-1 [2]:

- POL0001: Policy error.
- POL0006: Groups not allowed.

8.1.2 Operation: SetRulesForGroup

Set the call handling rules for multiple addresses (the destination for calls). If a set of rules is already in place for any of the **Addresses**, then this operation will replace the old rules with the set provided in this operation.

The **Addresses** may include groups, with members using the 'tel:' and 'sip:' URIs in the manner defined in ES 202 391-1 [2]. Wildcards may not be used to specify addresses.

8.1.2.1 Input message: SetRulesForGroupRequest

Part name	Part type	Description
Addresses	xsd:anyURI [0..unbounded]	Addresses to handle calls for
Rules	CallHandlingRules	Rules to apply for these addresses

8.1.2.2 Output message: SetRulesForGroupResponse

Part name	Part type	Description
Result	SetRulesResult [0..unbounded]	Result of setup for each of addresses provided

8.1.2.3 Referenced faults

ServiceException from ES 202 391-1 [2]:

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

PolicyException from ES 202 391-1 [2]:

- POL0001: Policy error.
- POL0006: Groups not allowed.
- POL0007: Nested groups not allowed.

8.1.3 Operation: GetRules

Get the call handling rules for an address (the destination for the call).

The **Address** may not specify a group. If a group is specified, a **PolicyException** will be returned.

8.1.3.1 Input message: GetRulesRequest

Part name	Part type	Description
Address	xsd:anyURI	Address to handle calls for

8.1.3.2 Output message: GetRulesResponse

Part name	Part type	Description
Rules	CallHandlingRules	Rules being applied for this address

8.1.3.3 Referenced faults

ServiceException from ES 202 391-1 [2]:

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

PolicyException from ES 202 391-1 [2]:

- POL0001: Policy error.
- POL0006: Groups not allowed.

8.1.4 Operation: ClearRules

Clear the call handling rules associated with the addresses specified. If no rules have been set for an address, this operation silently ignores the request, and does not return an error or fault message.

The **Addresses** may include groups, with members using the 'tel:' and 'sip:' URIs in the manner defined in ES 202 391-1 [2]. Wildcards may not be used to specify addresses.

8.1.4.1 Input message: ClearRulesRequest

Part name	Part type	Description
Addresses	xsd:anyURI [0..unbounded]	Addresses to clear call handling for

8.1.4.2 Output message: ClearRulesResponse

Part name	Part type	Description
None		

8.1.4.3 Referenced faults

ServiceException from ES 202 391-1 [2]:

- SVC0001: Service error.
- SVC0002: Invalid input value.
- SVC0006: Invalid group.

PolicyException from ES 202 391-1 [2]:

- POL0001: Policy error.
- POL0006: Groups not allowed.

- POL0007: Nested groups not allowed.

9 Fault definitions

No new faults defined for this service.

10 Service policies

Service policies for this service.

Name	Type	Description
VoiceMailAvailable	xsd:boolean	Voice mail available or not
TextToSpeechAvailable	xsd:boolean	Service accepts text as an input for processing with a Text-To-Speech engine
AudioContentAvailable	xsd:boolean	Service accepts audio content for playing with an audio player
VoiceXmlAvailable	xsd:boolean	Service accepts VoiceXML for processing with a VoiceXML browser
AudioFormatsSupported	xsd:string	Comma separated string of audio formats supported (e.g. WAV, MP3, AU)
GroupSupport	xsd:boolean	Groups may be included with addresses
NestedGroupSupport	xsd:boolean	Are nested groups supported in group definitions

Annex A (normative): WSDL for Call Handling

The document/literal WSDL representation of this interface specification is compliant to ES 202 391-1 [2] and is contained in text files (contained in archive es_20239110v010101m0.zip) which accompany the present document.

Annex B (informative): Bibliography

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

History

Document history		
V1.1.1	January 2005	Membership Approval Procedure MV 20050318: 2005-01-18 to 2005-03-18