

## Open Service Access (OSA); Parlay X Web Services; Part 1: Common (Parlay X 2)



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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).

The present document is part 1 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".

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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 2.2 set of specifications.**

**The present document is equivalent to 3GPP TS 29.199-01 V6.6.0 (Release 6).**

The Mapping specification of the Parlay X 2 Web Services (ES 202 391) to the Parlay/OSA APIs (ES 203 915 [11]) and, where applicable, to IMS, is also structured as above. A mapping of the Parlay X 2 Web Services is however not applicable for all parts (e.g. part 13), but the numbering of parts is kept.

Table 1: Overview of the Parlay X 2 Web Services and OSA APIs mappings

Parlay X 2 Web Services (ES 202 391 series)		OSA APIs (and IMS) mappings (TR 102 397 series)	
ES 202 391-01	Common	TR 102 397-01	Common mapping
ES 202 391-02	Third party call	TR 102 397-02-1	Generic Call Control mapping
		TR 102 397-02-2	Multi-Party Call Control mapping
ES 202 391-03	Call notification	TR 102 397-03-1	Generic Call Control mapping
		TR 102 397-03-2	Multi-Party Call Control mapping
ES 202 391-04	Short messaging	TR 102 397-04-1	User Interaction mapping
		TR 102 397-04-2	Multi-Media Messaging mapping
ES 202 391-05	Multimedia messaging	TR 102 397-05-1	User Interaction mapping
		TR 102 397-05-2	Multi-Media Messaging mapping
ES 202 391-06	Payment	TR 102 397-06	Charging mapping
ES 202 391-07	Account management	TR 102 397-07	Account Management mapping
ES 202 391-08	Terminal status	TR 102 397-08	Mobility User Status mapping
ES 202 391-09	Terminal location	TR 102 397-09-1	Mobility User Location mapping
		TR 102 397-09-2	Mobility User Location CAMEL mapping
ES 202 391-10	Call handling	TR 102 397-10-1	Generic Call Control & User Interaction mapping
		TR 102 397-10-2	Multi-Party Call Control & User Interaction mapping
		TR 102 397-10-3	Policy Management mapping
ES 202 391-11	Audio call	TR 102 397-11-1	Generic Call Control & User Interaction mapping
		TR 102 397-11-2	Multi-Party Call Control & User Interaction mapping
ES 202 391-12	Multimedia conference	TR 102 397-12	Multi-Media Call Control mapping
ES 202 391-13	Address list management	TR 102 397-13	Not Applicable
ES 202 391-14	Presence	TR 102 397-14-1	Presence & Availability Management mapping
		TR 102 397-14-2	SIP/IMS Networks mapping

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# 1 Scope

The present document is part 1 of the Stage 3 Parlay X 2 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 Common aspects of the Parlay X 2 Web Services. The following are defined here:

- Name spaces.
- Data definitions.
- Fault definitions.
- 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.

- [1] ETSI TR 121 905: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Vocabulary for 3GPP Specifications (3GPP TR 21.905 version 7.2.0 Release 7)".
- [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] IETF RFC 3966: "The tel URI for Telephone Numbers".  
NOTE: Available at: <http://www.ietf.org/rfc/rfc3966.txt>.
- [4] IETF RFC 3261: "SIP: Session Initiation Protocol".  
NOTE: Available at: <http://www.ietf.org/rfc/rfc3261.txt>.
- [5] WS-I Basic Profile Version 1.0: "Final Material".  
NOTE: Available at: <http://www.ws-i.org/Profiles/BasicProfile-1.0-2004-04-16.html>.
- [6] W3C Note (15 March 2001): "Web Services Description Language (WSDL) 1.1".  
NOTE: Available at: <http://www.w3.org/TR/2001/NOTE-wsdl-20010315>.
- [7] OASIS Standard 200401 (March 2004): "Web Services Security: SOAP Message Security 1.0 (WS-Security 2004)".  
NOTE: Available at: <http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-soap-message-security-1.0.pdf>.
- [8] W3C Recommendation (12 February 2002): "XML-Signature Syntax and Processing".  
NOTE: Available at: <http://www.w3.org/TR/2002/REC-xmlsig-core-20020212/>.
- [9] ISO 4217: "Codes for the representation of currencies and funds".
- [10] IETF RFC 3986: "Uniform Resource Identifier (URI): Generic Syntax".  
NOTE: Available at: <http://www.ietf.org/rfc/rfc3986.txt>.
- [11] ETSI ES 203 915 (series): "Open Service Access (OSA); Application Programming Interface (API)".

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## 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

**application:** computer program that accesses a Web Service

**SOAP:** not an acronym, protocol used for XML messaging

**Web Service:** software system designed to support interoperable machine-to-machine interaction over a network

**Web Service Provider:** entity which provides Web Services interfaces to capabilities offered

**Web Service Requester:** entity which operates Applications that access Web Services

### 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TR 121 905 [1] and the following apply:

3GPP	Third Generation Partnership Project
ETSI	European Telecommunications Standards Institute
IT	Information Technology
OASIS	Organization for the Advancement of Structured Information Standards
OSA	Open Service Access
RFC	Request For Comment
SIP	Session Initiation Protocol
UDDI	Universal Description Discovery and Integration



URI	Uniform Resource Identifier
W3C	World Wide Web Consortium
WSDL	Web Service Definition Language
WS-I	Web Services-Interoperability Organization
XML	Extensible Markup Language

---

## 4 Use of Web Services technologies

### 4.1 Web Service message content

#### 4.1.1 SOAP

All Web Service messages SHALL send and accept messages that conform to the SOAP use defined in the WS-I Basic Profile [5], using the document/literal encoding style.

#### 4.1.2 XML

All Web Service messages SHALL send and accept messages that conform to the XML use defined in the WS-I Basic Profile [5].

#### 4.1.3 HTTP

All Web Service messages SHALL send and accept messages that conform to the HTTP use defined in the WS-I Basic Profile [5].

### 4.2 Web Service interface definitions

All Parlay X 2 Web Services are defined according to the following.

#### 4.2.1 WSDL

All Web Service interfaces SHALL be defined using WSDL 1.1 as defined in the WSDL specification [6] and be conformant to the WSDL use defined in WS-I Basic Profile [5].

See clause 12 for detailed information on the WSDL style to be followed by Parlay X 2 Web Services.

### 4.3 Security for Parlay X 2 Web Services

If a message contains an identifier and/or credentials representing the sender of the message then these SHALL be provided in a manner prescribed by WS-Security [7].

Encryption of message content MAY be required by the Web Service Provider. If this is required, then this SHALL be accomplished in one of the following manners:

- Use of a Virtual Private Network, to be administered independent of the Web Service implementation.
- Use of Transport Level Security using HTTP over TLS as specified in the WS-I Basic Profile [5].

Integrity of the message content MAY be required by the Web Service Provider. If this is required, then this SHALL be accomplished using XML Digital Signature [8].

### 4.4 XML data types

Where possible standard XML Schema data types are used, as defined in clause 3 (Built-in datatypes) in XML Schema [2].

## 5 Detailed service description

### 5.1 Address data items

Addresses, unless the specification provides specific additional instruction, **MUST** conform to the address portion of the URI definition provided in RFC 3966 [3] for 'tel:' addresses, RFC 3261 [4] for 'sip:' addresses or the definition given below for shortcodes or aliased addresses. Optional additions to the address portion of these URI definitions **MUST NOT** be considered part of the address accepted by the Parlay X 2 Web Services interfaces, and an implementation **MAY** choose to reject an address as invalid if it contains any content other than the address portion.

When processing a 'tel:' URI, as specified in RFC 3966 [3], Parlay X 2 Web Services **MUST** accept national addresses (those not starting with '+' and a country code) and **MUST** accept international addresses (those starting with '+' and a country code). When specified in the definition of a service operation, the URI may contain wildcard characters in accordance with the appropriate specification (i.e. RFC 3966 [3] or RFC 3261 [4]).

Shortcodes are short telephone numbers, usually 4 to 6 digits in length reserved for telecom service providers' own functionality. They shall be differentiated from national addresses by the use of a 'short:' rather than 'tel:' URI scheme. The short code defined in the URI consists of a string of digits with no non-digit characters.

Support for aliases in addresses is provided by use of the URI defined in RFC 3986 [10]. This allows for arbitrary data to be submitted to the Parlay X Web Service interface. The following is an example of how this could be applied:

```
<uri scheme>:<generic syntax>
```

An alias is generally a relatively short character string that holds a scrambled address such that only the application identified in the URI can expand it.

### 5.2 Charging

Web Services may use a Web Service Provider to deliver content or function. In some cases, the producer of the content or capability will wish to use a bill-on-behalf-of capability offered by the Web Service Provider to charge for the content/function provided. For those services where the charge is part of a single activity, providing the charging related information as part of the message is very efficient.

An example is a messaging service, where a sports business collects information and distributes short messages with sports scores to its subscribers. The sports business has an agreement with a Web Service Provider where the charges for the messages are included in the bill provided by the Web Service Provider (thus the Web Service Provider is billing on behalf of the sports business).

To enable this capability to be provided across a variety of services in a consistent manner, thus making implementation easy and efficient, the information to be provided in the Web Service message for charging information is defined as a common charging data type.

#### 5.2.1 Charging data type

The charging information is provided in an XML data type, using the following schema:

```
<xsd:complexType name="ChargingInformation">
  <xsd:sequence>
    <xsd:element name="description" type="xsd:string"/>
    <xsd:element name="currency" type="xsd:string" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="amount" type="xsd:decimal" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="code" type="xsd:string" minOccurs="0" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>
```

The application accessing the Web Service provides this information:

- Description text, which will often be used to provide billing text. This text does not have specific required content, but would likely include information on the business, the content or service provided, and a transaction identifier. Credit card statements are a good example of description text provided by different companies.
- Currency in which the charge is to be applied. Values for the currency field are defined by ISO 4217 [9].
- Defines the amount to be charged.
- Code specifies a charging code which references a contract under which this charge is applied. The code identifier is provided by the Web Service Provider.

The charging information provided may not be acceptable to the Web Service Provider. For example, the Web Service Provider may limit the amount that may be specified for a particular Web Service or for a particular Web Service Requester. If the information provided is not acceptable, an appropriate fault message may be returned to the Web Service Requester (SVC0007 is defined as a generic charging fault).

## 5.3 Exception definition

Exceptions are defined with three data items.

The first data item is a unique identifier for the message. This allows the receiver of the message to recognize the message easily in a language-neutral manner. Thus applications and people seeing the message do not have to understand the message text to be able to identify the message. This is very useful for customer support as well, since it does not depend on the reader to be able to read the language of the message.

The second data item is the message text, including placeholders (marked with %) for additional information. This form is consistent with the form for internationalization of messages used by many technologies (operating systems, programming environments, etc.). Use of this form enables translation of messages to different languages independent of program changes. This is well suited for Web Services messages, as a programming language is not defined.

The third data item is a list of zero or more strings that represent the content to put in each placeholder defined in the message in the second data item.

## 5.4 Service exception

When a service is not able to process a request, and retrying the request with the same information will also result in a failure, and the issue is not related to a service policy issue, then the service will issue a fault using the ServiceException fault message. A Service Exception uses the letters 'SVC' at the beginning of the message identifier.

Examples of service exceptions include invalid input, lack of availability of a required resource or a processing error.

## 5.5 Policy exception

When a service is not able to complete because the request fails to meet a policy criteria, then the service will issue a fault using the PolicyException fault message. To clarify how a Policy Exception differs from a Service Exception, consider that all the input to an operation may be valid as meeting the required input for the operation (thus no Service Exception), but using that input in the execution of the service may result in conditions that require the service not to complete. A Policy Exception uses the letters 'POL' at the beginning of the message identifier.

Examples of policy exceptions include privacy violations, requests not permitted under a governing service agreement or input content not acceptable to the service provider.