

**Open Service Access (OSA);
Parlay X Web Services;
Part 17: Application-driven Quality of Service (QoS);
(Parlay X 3)**



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Reference

DES/TISPAN-01034-17-OSA

Keywords

API, OSA, service

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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 17 of a multi-part deliverable covering Open Service Access (OSA); Parlay X 3 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".

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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 3.0 set of specifications.

The present document is equivalent to 3GPP TS 29.199-17 V7.0.2 (Release 7).

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1 Scope

The present document is part 17 of the Stage 3 Parlay X 3 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 Application-driven Quality of Service (QoS) 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

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>.

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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] 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 202 504-1: "Open Service Access (OSA); Parlay X Web Services; Part 1: Common (Parlay X 3)".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in ES 202 504-1 [2] apply.

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in ES 202 504-1 [2] and the following apply:

ADQ	Application-Driven Quality of Service
QoS	Quality of Service

4 Detailed service description

'Application Driven QoS' is a service which enables applications to dynamically change the quality of service (e.g. bandwidth) available on end user network connections. Changes in QoS may be applied on either a temporary basis (i.e. for a defined period of time), or as the default QoS to be applied for a user each time they connect to the network.

Applications will govern the quality of service available to the end user by requesting that pre-defined QoS Feature profiles are applied on the end user's connection. It is the responsibility of the Service Provider to define these QoS Features and share them beforehand with application providers, along with a clear indication as to which of these can be used as temporary QoS Features and which can be used to set the default QoS on an end user connection.

The following scenarios provide example business use-cases to further illustrate the difference between default and temporary QoS Features and when they may be applied by the application.

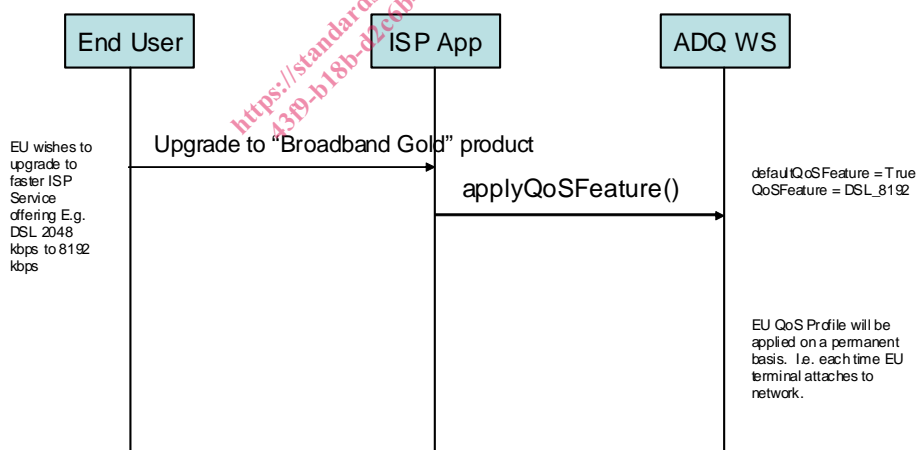


Figure 4.1: Example Default QoS Feature Use-Case

Figure 4.1 provides an example of where a default QoS Feature could be applied to an end user connection. The scenario given shows the end user of a DSL service requesting a permanent upgrade from their existing service offering (e.g. 2048 kbps) to a higher bandwidth service (e.g. 8192 kbps). The application subsequently makes a request to the ADQ web service to apply the pre-defined 'DSL_8192' QoS Feature to the end user connection on a permanent, or default, basis. Following successful completion of this use-case, each time the end user's terminal equipment attaches to their DSL service, the default QoS (in this case DSL_8192) will be applied.

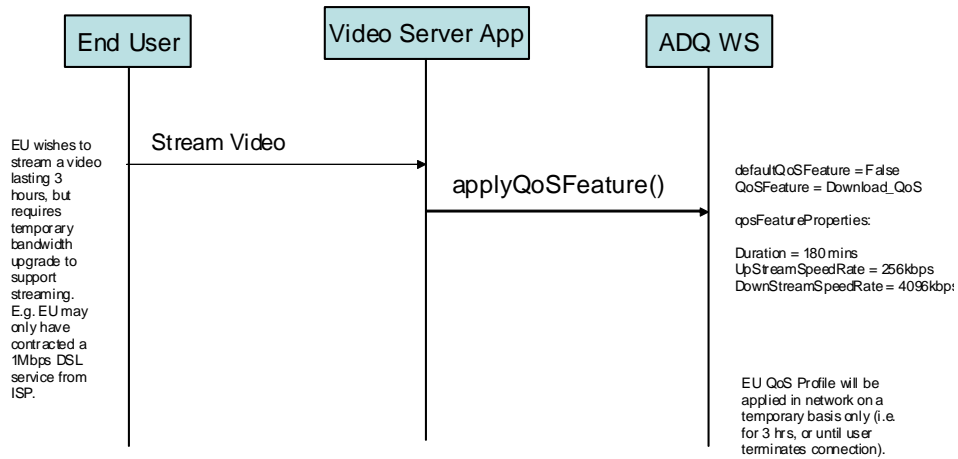


Figure 4.2: Example Temporary QoS Feature Use-Case

Figure 4.2 provides an example of where a temporary QoS Feature could be applied to an end user connection. The scenario given shows an end user of a DSL service who wishes to stream a piece of video content. Their current service offering (e.g. 1024 kbps DSL) however will not support video streaming and hence they require a temporary bandwidth upgrade for the duration of the video stream. The streaming application then makes a request to the ADQ web service to apply the pre-defined 'Download_QoS' QoS Feature to the end user connection, specifying the upstream and downstream bandwidth rate and the duration for which the temporary QoS Feature should be applied. Assuming that the network supports the requested bandwidth rate, the end user's bandwidth will be increased to the rate requested by the application for the specified duration. Once the requested duration has expired, the end user's service will resume to their original (in this example 1024 kbps bandwidth) QoS.

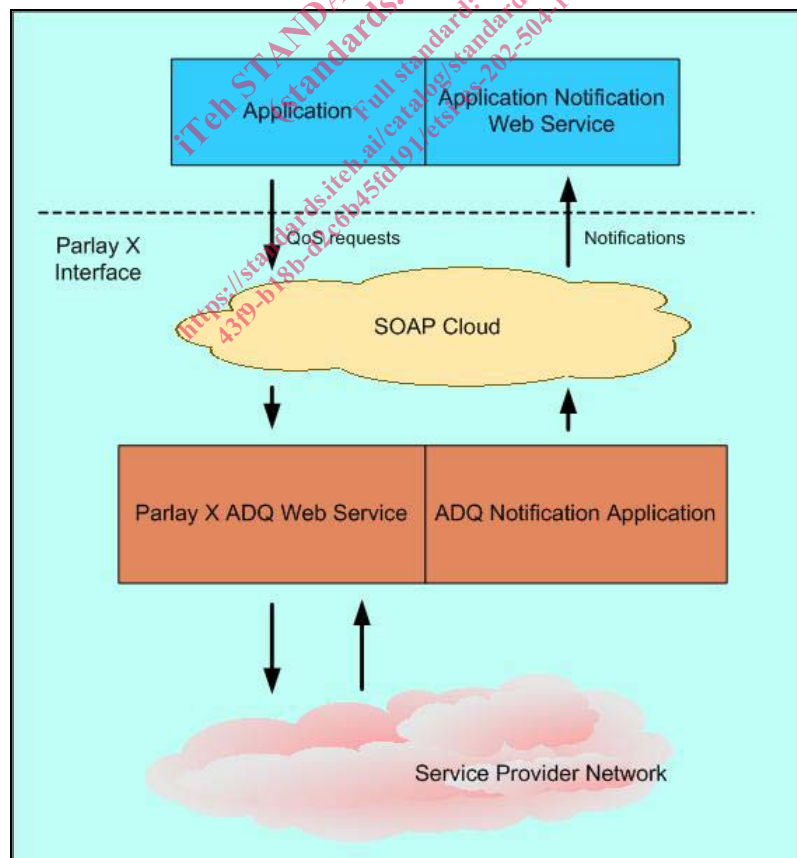


Figure 4.3: ADQ Web Service

The ADQ service is enabled as a Web Service interface, as depicted in figure 4.3, and will accept four logical kinds of requests from the Applications viz.:

- Requests to change the default quality of service available on the end user's connection,
- Requests to change the quality of service available on the end user's connection on a temporary basis,
- Requests to manage event registrations and
- Self-care requests.

Applications can register with the service for notifications about network events that affect the quality of service temporarily configured on the end user's connection. Whenever such events occur, the Service generates notifications to inform Applications about the impact that these events had on the temporary QoS features set up on the end user's connection.

Self-care requests enable Applications to view transaction history and current quality of service status.

5 Namespaces

The ApplicationQoS interface uses the namespace:

`http://www.csapi.org/wsdl/parlayx/adq/v3_0`

The ApplicationQoSImpactNotificationManager interface uses the namespace:

`http://www.csapi.org/wsdl/parlayx/adq/notification_manager/v3_0`

The ApplicationQoSImpactNotification uses the namespace:

`http://www.csapi.org/wsdl/parlayx/adq/notification/v3_0`

The data types are defined in the namespace:

`http://www.csapi.org/schema/parlayx/adq/v3_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 Interface Flow overview

The sequence diagrams show the interaction where the Application Provider has a Web Service compliant Application capable of sending requests to the service and receiving notifications from the service.

Every method defined in the interface is synchronous, in the sense, that the response to the request is instantaneous and contains the status of the request. There is no polling required on part of the Application to determine the status of a request.

Notifications are unsolicited. The Application will indicate their interest in receiving notifications by registering for events. When an event occurs in the network that merits a notification to be raised, interested Applications will receive a notification and its implications on the temporary QoS features active on the end user connection.

The sequence diagrams do not show the internal logic within the server implementing this service, which is required for processing the requests. It is assumed that such a server is capable of interacting with the network to service requests sent by the Application.