ETSI EG 201 988-4 V1.1.1 (2008-02)

ETSI Guide

Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Service Provider Access; Open Service Access for API requirements; Part 4: Version 4

Reference
DEG/TISPAN-01058-OSA

Keywords
API, architecture, interface, UML

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

Individual copies of the present document can be downloaded from:
http://www.etsi.org

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at
http://portal.etsi.org/tb/status/status.asp

If you find errors in the present document, please send your comment to one of the following services:
http://portal.etsi.org/chaircor/ETSI_support.asp

Contents

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (http://webapp.etsi.org/IPR/home.asp).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

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

The present document is part 4 of a multi-part deliverable covering Service Provider Access; Open Service Access for API requirements, as identified below:

Part 1: "Version 1";

Part 2: "Version 2";

Part 3: "Version 3".

Part 4: "Version 4".

Introduction

The present document contains the Requirements capture for ETSI 4.0 "Third Party API" protocol specification: ES 203 915 series [1] and ES 202 391 series [2].

1 Scope

The present document contains the functional requirements for Open Service Access Requirements Version 4.0. The present document has been compiled in conjunction with Parlay and represents the sixth phase of the Parlay API. The ETSI and Parlay API have been specified and designed using the requirements identified both in the previously published Parts of this specification, Parts 1 through 3 and in the present document, Part 4. The requirements are intended to provide the necessary functionality for benchmark applications.

It is the intention that the new requirements should build upon the ETSI Phase 3.0 API and that of the Parlay 5.0 specification requirements, as described in EG 201 988-3 [3], and should be fully backward compatible. This means that any network operator implementing ETSI Phase 4.0 or Parlay 6.0 should be able to interwork with a client application provider implementing ETSI Phase 3.0 or Parlay 5.0. In other words ETSI Phase 4.0 and Parlay 6.0 will retain ETSI Phase3.0 and Parlay 5.0 as a complete subset. A full description of backward compatibility considerations is presented in clause 9 of ES 203 915-1 [4]. For any requirement that would result in an extension of, or would build upon, a part of the API specification set that is published jointly by 3GPP as well, in addition to ETSI and Parlay, the contributing companies are encouraged to submit their requirements to the 3GPP SA1 requirements process [5].

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 ES 203 915 (series): "Open Service Access (OSA); Application Programming Interface (API)".

[2] ETSI ES 202 391 (series): "Open Service Access (OSA); Parlay X Web Services".

[3] ETSI EG 201 988-3: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Service Provider Access; Open Service Access for API Requirements; Part 3: Version 3".

[4] ETSI ES 203 915-1: "Open Service Access (OSA); Application Programming Interface (API); Part 1 Overview (Parlay 5)".

2.2 Informative references

[5] ETSI TS 122 127: "Universal Mobile Telecommunications System (UMTS); Service Requirement for the Open Services Access (OSA); Stage 1 (3GPP TS 22.127)".

[6] ETSI TS 123 041: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Technical realization of Cell Broadcast Service (CBS) (3GPP TS 23.041)".

[7] ETSI TS 123 032: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Universal Geographical Area Description (GAD) (3GPP TS 23.032)".

3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ADQ	Application Driven Quality of Service
API	Application Program Interface
ASP	Application Service Provider
BM-SC	Broadcast Multicast-Service Centre
CBC	Cell Broadcast Centre
GGSN	Gateway GPRS Support Node
IP	Internet Protocol
IPTV	Internetworking Protocol Television
IVR	Interactive Voice Response
MMS	Multimedia Messaging Service
OSA	Open Service Access
SGSN	Serving GPRS Support Node
SMS	Short Messaging Service
TPC	Third Party Control

4 ETSI Phase 4.0/Parlay 6.0 API Domains

The Parlay/OSA API is an open, technology-independent, and extensible interface into networking technologies. The Parlay API is therefore applicable to a number of business and application domains, not just telecommunications network operators.

Examples of business domains that may use the API include:

- Third Party NGN Service Providers.
- Interactive Multimedia Service Providers.
- Corporate Businesses.
- Small Businesses.
- Residential Customers.
- Network Operators.

All of these businesses have networking requirements, ranging from simple telephony and call routing to call centre's, virtual private networks and fully interactive multimedia.

4.1 Requirements on interfaces at different levels of abstractions

As originally defined in clause 6.5 of EG 201 988-3 [3], the OSA-defined functions may be accessed through interfaces at different levels of abstractions and according to different programming formalisms, in addition to those defined in the previous Releases. Accordingly, ETSI Phase 3.0 and Parlay 5.0 is realized in two specifications sets:

- OSA APIs (Parlay 5).
- OSA Parlay X 2 Web Services.

For ETSI Phase 4.0 and Parlay 6.0, the requirements described in the present document will likewise be realized in two specifications sets:

- OSA APIs (Parlay 6): i.e. ES 203 915 series [1].
- OSA Parlay X Web Services: i.e. ES 202 391 series [2].

Guidelines have been adopted to determine which of the two abstraction layers provides the appropriate domain to realize the requirements described in the present document.

4.2 Parlay X Web Service Guidelines

The interfaces represented by the Parlay X Web Services should be **powerful yet simple and highly abstracted.** The following rules serve as guidelines for realizing requirements using Parlay X Web Services. Exceptions to these rules will be considered if they are justified by simplicity or completeness of the API, and if the resulting specification is sufficiently differentiated from related specifications.

- A Parlay X Web Service specification will be a functional abstractions of a Parlay/OSA specification. Where a functionally overlapping Parlay/OSA specification exists, the Parlay X Web Service specification will be an abstraction of the Parlay/OSA specification.
- Parlay X Web Service specifications should offer a coarser granularity level (e.g. measured as the relative size, level of detail, or depth of penetration), and contain less than half the methods of the equivalent Parlay/OSA specifications.
- Parlay X Web Service specifications should not mandate the maintenance of state.
- Parlay X Web Service specifications should not contain asynchronous message exchange, but often include event notification.
- Parlay X Web Service specifications should never imply detailed protocol knowledge.
- Parlay X Web Service specifications should be functionally self-contained from the developers point of view.
- For any Parlay X Web Service specification, 80 % of the above rules should be met.

5 Proposed enhancements to existing Interfaces

5.1 General requirements

5.1.1 Backwards Compatibility/Deprecation - Parlay/OSA APIs

A full description of backward compatibility considerations is presented in clause 9 of ES 203 915-1 [4].

5.1.2 Backwards Compatibility/Deprecation - Parlay X Web Services

For OSA Parlay X 3 Web Services it is desirable, **but it is not considered necessary**, to retain backwards compatibility with the existing OSA Parlay X 2 Web Services specifications. This is because the existing specifications are immature and there are limited implementations and deployments to date. This provide an opportunity to correct identified shortcomings, and in so doing provide a solution approach that will enable a richer set of applications whilst being application agnostic in nature.

5.2 Call Session Control

Issues and Motivation:

Operators and vendors desire to extend the call control capabilities of the Parlay X Web Services. The suggested approach to the evolution of Parlay X Call Control builds on the agreed view of keeping the Parlay X web services true to the design goal of "Separation of Concerns" and to avoid bundling of functionality where possible. This approach is **not** backward compatible with the existing Parlay X Call control-related web services, but this is an acceptable trade-off as noted in clause 5.1.2.

Requirements Description:

- Call Participant Control. The ability to add, remove, transfer call participants, for either application or network initiated calls.
- IVR Interaction. Application should be able to request IVR Interaction on a call. It should include simple Play Announcement and Play and Collect information capabilities for both network and application initiated calls.
- Additional Call Notification events. The following are specifically identified:
  - Call Progress.
  - Call Setup failure.
  - Call Party Disconnect.
  - Call Party Answer.
  - Call Rejected.
  - Media Changed.
- Deassign Call Control. The ability to stop an application from receiving notifications on a specific call.
- Media Control. The ability to manipulate the media on either an application or network initiated call.

Proposed Solution and Further Considerations:

These functions are currently implemented in the Parlay/OSA APIs.

These functions are also viewed as appropriate for implementation at an abstraction level consistent with that of the Parlay X Web Services.

Figure 1 shows the conceptual principles of how the involved call control elements relate.

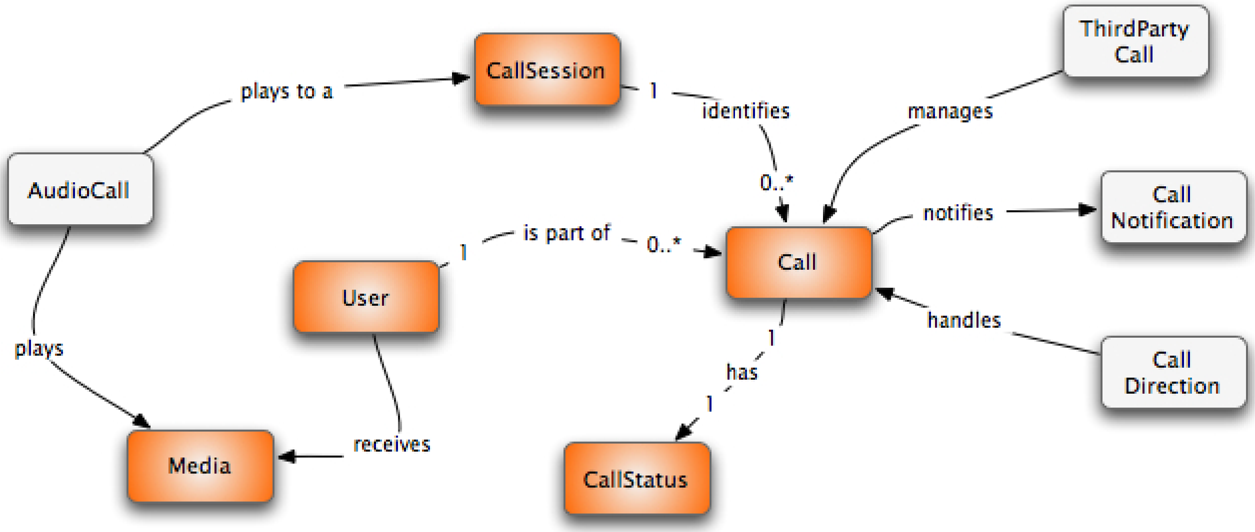

Figure 1

CallSession: The CallSession object can be used to interact with ongoing calls. It will also serve as a placeholder for a set of calls. It can be viewed as a call "context" (uniquely identified) to/from which participants can be added/removed.

ThirdPartyCall: The Third Party Call Web Service will now be the only place where application initiated call processing can and should be performed. This implies removing the call initiation from, for instance, the AudioCall web service. **CallNotification** and **CallDirection** interfaces are updated to support the CallSession concept.

The ThirdPartyCall MakeCall operation will further be enhanced with an optional parameter to indicate which CallSession the call is to be assigned to. If this parameter is not included in the request, the MakeCall will operate as in previous versions of Parlay X.

ThirdPartyCall provides the ability to setup a call session, add and delete a call participant, transfer a call participant from one call session into another call session, determine the status of an individual call participant or a complete call session, and finally to end a call session.

AudioCall: For the AudioCall service, it is proposed change the name to MediaCall and add a PlayVideoMessage operation to complete the set of operations. The service will now also change its behaviour such that it can only act on already established CallSession objects. This keeps a clear distinction between where the call control lives and where the media capabilities are added.

AudioCall will also be extended so that it can manipulate media on an ongoing call (either network or application initiated) and IVR interactions can occur.

User: A user can be part of many calls, it is important to note that the concept of a user may involve resources such as voice xml processing equipment and text-to-speech engines.

5.3 Scheduled Short and Multimedia Message Transmission (#6P11)

Issues and Motivation:

Operators desire the ability to send a short or multimedia message to a large set of subscribers. In addition, operators would like to provide third parties with the ability to create and schedule transmissions of large sets of message to increase messaging infrastructure usage.

The current messaging interfaces provide immediate message transmission only and do not allow applications to schedule message transmission during periods when network messaging resources are less utilized.

The commercial motivation is the ability to increase the volume of successfully delivered messages and the end-user application experience.

Scenarios:

Not applicable.

Requirements Description:

- Schedule the transmission of short messages to multiple destinations.
- Schedule the transmission of multimedia messages to multiple destinations.
- Retrieve the status of a scheduled message transmission request, including the number of messages successfully sent if a scheduled request is in progress or has completed.
- Cancel a scheduled message transmission request:
  - An ability to cancel a scheduled message transmission request has greater business value than an equivalent function for the existing immediate message transmission function. This is because this new function will typically be used to request transmission of large sets of messages well in advance of the scheduled time, resulting in a higher probability of a successful cancellation result and a reduction in unnecessary messaging resource usage.

Proposed Solution and Further Considerations:

This function is viewed as appropriate for implementation at an abstraction level consistent with that of the Parlay X Web Services. This function can also be mapped to the existing Parlay/OSA APIs.

5.4 Charging

Issues and Motivation:

The ability to split a charge between multiple end user accounts.

Scenarios:

A multi-player gaming application, where all participants share in the cost.

Requirements Description:

- Support split charging.

Proposed Solution and Further Considerations:

This function is currently implemented in the Parlay/OSA APIs.

This function is also viewed as appropriate for implementation at an abstraction level consistent with that of the Parlay X Web Services.

5.5 Account Management

Issues and Motivation:

Desire to take proactive measures (e.g. recharging) when an account balance falls below a threshold. Also the ability to monitor end user account activity: charging and recharging.

Scenarios:

Not applicable

Requirements Description:

- Support account balance related event notifications: charge, recharge, low balance.

Proposed Solution and Further Considerations:

This function is currently implemented in the Parlay/OSA APIs.