SLOVENSKI STANDARD
SIST ES 202 915-4-1 V1.2.1:2005

01-januar-2005

Odprti dostop do storitve (OSA) – Vmesnik za aplikacijsko programiranje (API) – 4. del: Krmiljenje klica – 1. poddel: Skupne definicije krmiljenja klica

Open Service Access (OSA); Application Programming Interface (API); Part 4: Call Control; Sub-part 1: Call Control Common Definitions (Parlay 4)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Ta slovenski standard je istoveten z: ES 202 915-4-1 Version 1.2.1

SIST ES 202 915-4-1 V1.2.1:2005
https://standards.iteh.ai/catalog/standards/sist/05519133-7df9-4066-a067-51d4c8758f6b/sist-es-202-915-4-1-v1-2-1-2005

ICS:

33.040.01	Telekomunikacijski sistemi na splošno	Telecommunication systems in general

SIST ES 202 915-4-1 V1.2.1:2005 **en**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

SIST ES 202 915-4-1 V1.2.1:2005

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST ES 202 915-4-1 V1.2.1:2005
https://standards.iteh.ai/catalog/standards/sist/05319135-7df9-4066-a067-51d4c8758f6b/sist-es-202-915-4-1-v1-2-1-2005

SIST ES 202 915-4-1 V1.2.1:2005

ETSI ES 202 915-4-1 V1.2.1 (2003-08)

ETSI Standard

Open Service Access (OSA); Application Programming Interface (API); Part 4: Call Control; Sub-part 1: Call Control Common Definitions (Parlay 4)

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ES 202 915-4-1 V1.2.1:2005
https://standards.iteh.ai/catalog/standards/sist/05319135-7df9-4066-a067-51d4c8758f6b/sist-es-202-915-4-1-v1-2-1-2005

SIST ES 202 915-4-1 V1.2.1:2005

Reference
RES/SPAN-120096-4-1

Keywords
API, IDL, OSA, 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

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ES 202 915-4-1 V1.2.1:2005
https://standards.iteh.ai/catalog/standards/sist/05319135-7df9-4066-a067-51d4c8758f0f/sist-es-202-915-4-1-v1.2.1-2005

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, send your comment to:
editor@etsi.org

Copyright Notification

No part may be reproduced except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2003.
© The Parlay Group 2003.
All rights reserved.

DECT™, **PLUGTESTS**™ and **UMTS**™ are Trade Marks of ETSI registered for the benefit of its Members.
TIPHON™ and the **TIPHON logo** are Trade Marks currently being registered by ETSI for the benefit of its Members.
3GPP™ is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

SIST ES 202 915-4-1 V1.2.1:2005

Contents

Intellectual Property Rights 5
Foreword 5
1 Scope 7
2 References 7
3 Definitions and abbreviations 7
3.1 Definitions 7
3.2 Abbreviations 7
4 Call Control SCF 7
4.1 Call Model Description 8
4.2 Structure of Call Control SCF Documentation 8
4.3 General requirements on support of methods 9
5 The Service Interface Specifications 9
5.1 Interface Specification Format 9
5.1.1 Interface Class 9
5.1.2 Method descriptions 9
5.1.3 Parameter descriptions 9
5.1.4 State Model 9
5.2 Base Interface 9
5.2.1 Interface Class IpInterface 9
5.3 Service Interfaces 10
5.3.1 Overview 10
5.4 Generic Service Interface 10
5.4.1 Interface Class IpService 10
5.4.1.1 Method setCallback() 10
5.4.1.2 Method setCallbackWithSessionID() 11
6 Common Call Control Data Types 11
6.1 TpCallAlertingMechanism 11
6.2 TpCallBearerService 11
6.3 TpCallChargePlan 12
6.4 TpCallPartyToChargeAdditionalInfo 12
6.5 TpCallPartyToChargeType 12
6.6 TpCallChargeOrderCategory 13
6.7 TpCallEndedReport 13
6.8 TpCallError 13
6.9 TpCallAdditionalErrorInfo 13
6.10 TpCallErrorType 14
6.11 TpCallInfoReport 14
6.12 TpCallInfoType 14
6.13 TpCallLoadControlMechanism 15
6.14 TpCallLoadControlIntervalRate 15
6.15 TpCallLoadControlMechanismType 15
6.16 TpCallMonitorMode 15
6.17 TpCallNetworkAccessType 16
6.18 TpCallPartyCategory 16
6.19 TpCallServiceCode 16
6.20 TpCallServiceCodeSet 16
6.21 TpCallServiceCodeType 17
6.22 TpCallSuperviseReport 17
6.23 TpCallSuperviseTreatment 17
6.24 TpCallTeleService 18
6.25 TpCallTreatment 18
6.26 TpCallTreatmentType 18
6.27 TpCallAdditionalTreatmentInfo 19

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ES 202 915-4-1 V1.2.1:2005
https://standards.iteh.ai/catalog/standards/sist/05319135-7df9-4066-a067-51d4c8758f6b/sist-es-202-915-4-1-v1-2-1-2005

SIST ES 202 915-4-1 V1.2.1:2005

6.28 TpMediaType 19

Annex A (normative): OMG IDL Description of Common Call Control Data Types 20

Annex B (informative): W3C WSDL Description of Common Call Control Data Types 21

Annex C (informative): Java API Description of the Call Control SCFs 22

Annex D (informative): Contents of 3GPP OSA Rel-5 Call Control 23

Annex E (informative): Record of changes 24

E.1 Interfaces 24
E.1.1 New 24
E.1.2 Deprecated 24
E.1.3 Removed 24

E.2 Methods 24
E.2.1 New 24
E.2.2 Deprecated 25
E.2.3 Modified 25
E.2.4 Removed 25

E.3 Data Definitions 25
E.3.1 New 25
E.3.2 Modified 25
E.3.3 Removed 26

E.4 Service Properties 26
E.4.1 New 26
E.4.2 Deprecated 26
E.4.3 Modified 26
E.4.4 Removed 26

E.5 Exceptions 27
E.5.1 New 27
E.5.2 Modified 27
E.5.3 Removed 27

E.6 Others 27

History 28

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ES 202 915-4-1 V1.2.1:2005
https://standards.iteh.ai/catalog/standards/sist/05319135-7d9-4066-a067-51d4c8758f6b/sist-es-202-915-4-1-v1-2-1-2005

SIST ES 202 915-4-1 V1.2.1:2005

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 Standard (ES) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN).

The present document is part 4, sub-part 1 of a multi-part deliverable covering Open Service Access (OSA); Application Programming Interface (API), as identified below. The API specification (ES 202 915) is structured in the following parts:

Part 1: "Overview";

Part 2: "Common Data Definitions";

Part 3: "Framework";

Part 4: "Call Control";

Sub-part 1: "Call Control Common Definitions";

Sub-part 2: "Generic Call Control SCF";

Sub-part 3: "Multi-Party Call Control SCF";

Sub-part 4: "Multi-Media Call Control SCF";

Sub-part 5: "Conference Call Control SCF";

Part 5: "User Interaction SCF";

Part 6: "Mobility SCF";

Part 7: "Terminal Capabilities SCF";

Part 8: "Data Session Control SCF";

Part 9: "Generic Messaging SCF";

Part 10: "Connectivity Manager SCF";

Part 11: "Account Management SCF";

Part 12: "Charging SCF";

Part 13: "Policy management SCF";

Part 14: "Presence and Availability Management SCF".

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ES 202 915-4-1 V1.2.1:2005
https://standards.iteh.ai/catalog/standards/sist/05319135-7df9-4066-a067-51d4e875e88b/sist-es-202-915-4-1-v1-2-1-2005

SIST ES 202 915-4-1 V1.2.1:2005

The present document has been defined jointly between ETSI, The Parlay Group (http://www.parlay.org) and the 3GPP, in co-operation with a number of JAIN™ Community (http://www.java.sun.com/products/jain) member companies.

The present document forms part of the Parlay 4.1 set of specifications.

The present document is equivalent to 3GPP TS 29.198-4-1 V5.2.0 (Release 5).

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ES 202 915-4-1 V1.2.1:2005
https://standards.iteh.ai/catalog/standards/sist/05319135-7df9-4066-a067-51d4c8758f6b/sist-es-202-915-4-1-v1-2-1-2005

SIST ES 202 915-4-1 V1.2.1:2005

1 Scope

The present document is part 4, sub-part 1 of the Stage 3 specification for an Application Programming Interface (API) for Open Service Access (OSA).

The OSA specifications define an architecture that enables application developers to make use of network functionality through an open standardised interface, i.e. the OSA APIs.

The present document specifies the common definitions used by the Call Control Service Capability Features (SCF).

2 References

The references listed in clause 2 of ES 202 915-1 contain provisions which, through reference in this text, constitute provisions of the present document.

ETSI ES 202 915-1: "Open Service Access (OSA); Application Programming Interface (API); Part 1: Overview (Parlay 4)".

ETSI ES 202 915-2: "Open Service Access (OSA); Application Programming Interface (API); Part 2: Common Data Definitions (Parlay 4)".

ETSI ES 202 915-5: "Open Service Access (OSA); Application Programming Interface (API); Part 5: User Interaction SCF (Parlay 4)".

iTeh STANDARD PREVIEW
(standards.iteh.ai)

3 Definitions and abbreviations

3.1 Definitions

SIST ES 202 915-4-1 V1.2.1:2005
https://standards.iteh.ai/catalog/standards/sist/05319135-7df9-4066-a067-51d4c8758f6b/sist-es-202-915-4-1-v1-2-1-2005

For the purposes of the present document, the terms and definitions given in ES 202 915-1 apply.

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in ES 202 915-1 apply.

4 Call Control SCF

Four flavours of call control APIs are specified in ES 202 915, Parlay 4. Three of these have been included in 3GPP Release 5. These are the Generic Call Control (GCC), the Multi-Party Call Control (MPCC) and the Multi-Media Call Control (MMCC). The generic call control is the same API as was already present in the previous specification for 3GPP Release 99 (TS 129 198 V3). Multi-Party Call Control was introduced in the Release 4 specifications, and Multi-Media Call Control is introduced in Release 5. All four have been included in ETSI ES 201 915, Parlay 3.

The joint work between 3GPP CN5, ETSI SPAN and the Parlay Call Control Working group with collaboration from JAIN has been focussed on the Multi-party and Multi-Media call control APIs. A number of improvements on call control functionality have been made and are reflected in these APIs. For this it was necessary to break the inheritance that previously existed between Generic and Multi-party call control.

The joint call control group has furthermore decided that the multi-party call control is to be considered as the future base call control family and the technical work will not be continued on Generic Call control. Errors or technical flaws will of course be corrected.

SIST ES 202 915-4-1 V1.2.1:2005

4.1 Call Model Description

The call model used for the Call Control SCFs has the following objects.

- A call object. A call is a relation between a number of parties. The call object relates to the entire call view from the application. E.g. the entire call will be released when a release is called on the call. Note that different applications can have different views on the same physical call, e.g. one application for the originating side and another application for the terminating side. The applications will not be aware of each other, all 'communication' between the applications will be by means of network signalling. The API currently does not specify any feature interaction mechanisms.

- A call leg object. The leg object represents a logical association between a call and an address. The relationship includes at least the signalling relation with the party. The relation with the address is only made when the leg is routed. Before that the leg object is IDLE and not yet associated with the address.

- An address. The address logically represents a party in the call.

- A terminal. A terminal is the end-point of the signalling and/or media for a party. This object type is currently not addressed.

The call object is used to establish a relation between a number of parties by creating a leg for each party within the call.

Associated with the signalling relationship represented by the call leg, there may also be a bearer connection (e.g. in the traditional voice only networks) or a number (zero or more) of media channels (in multi-media networks).

A leg can be attached to the call or detached from the call. When the leg is attached, this means that media or bearer channels related to the legs are connected to the media or bearer channels of the other legs that are attached to the same call. I.e. only legs that are attached can 'speak' to each other. A leg can have a number of states, depending on the signalling received from or sent to the party associated with the leg. Usually there is a limit to the number of legs that are in being routed (i.e. the connection is being established) or connected to the call (i.e. the connection is established). Also, there usually is a limit to the number of legs that can be simultaneously attached to the same call.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ES 202 915-4-1 V1.2.1:2005

Some networks distinguish between controlling and passive legs. By definition the call will be released when the controlling leg is released. All other legs are called passive legs. There can be at most one controlling leg per call. However, there is currently no way the application can influence whether a Leg is controlling or not.

There are two ways for an application to get the control of a call. The application can request to be notified of calls that meet certain criteria. When a call occurs in the network that meets these criteria, the application is notified and can control the call. Some legs will already be associated with the call in this case. Another way is to create a new call from the application.

4.2 Structure of Call Control SCF Documentation

Each of the Call Control SCFs is specified under the following headings:

- The Sequence diagrams give the reader a practical idea of how each of the SCF is implemented.

- The Class relationships clause shows how each of the interfaces applicable to the SCF, relate to one another.

- The Interface specification clause describes in detail each of the interfaces shown within the Class diagram part.

- The State Transition Diagrams (STD) show transition between states in the SCF. The states and transitions are well-defined; either methods specified in the Interface specification or events occurring in the underlying networks cause state transitions.

- The Data definitions clause show a detailed expansion of each of the data types associated with the methods within the classes. Note that some data types are used in other methods and classes and are therefore defined within the Common Data types part ES 202 915-2.

SIST ES 202 915-4-1 V1.2.1:2005

4.3 General requirements on support of methods

An implementation of one of the call control APIs which supports or implements a method described in one of the sub-parts of ES 202 915-4, shall support or implement the functionality described for that method, for at least one valid set of values for the parameters of that method.

Where a method is not supported by an implementation of a Service interface, the exception P_METHOD_NOT_SUPPORTED shall be returned to any call of that method.

Where a method is not supported by an implementation of an Application interface, a call to that method shall be possible, and no exception shall be returned.

5 The Service Interface Specifications

5.1 Interface Specification Format

This clause defines the interfaces, methods and parameters that form a part of the API specification. The Unified Modelling Language (UML) is used to specify the interface classes. The general format of an interface specification is described below.

5.1.1 Interface Class

This shows a UML interface class description of the methods supported by that interface, and the relevant parameters and types. The Service and Framework interfaces for enterprise-based client applications are denoted by classes with name Ip<name>. The callback interfaces to the applications are denoted by classes with name IpApp<name>. For the interfaces between a Service and the Framework, the Service interfaces are typically denoted by classes with name IpSvc<name>, while the Framework interfaces are denoted by classes with name IpFw<name>

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ES 202 915-4-1 V1.2.1:2005
https://standards.iteh.ai/catalog/standards/sist/05319135-7df9-4066-a067-51d4c8758f6b/sist-es-202-915-4-1-v1-2-1-2005

5.1.2 Method descriptions

Each method (API method "call") is described. Both synchronous and asynchronous methods are used in the API. Asynchronous methods are identified by a 'Req' suffix for a method request, and, if applicable, are served by asynchronous methods identified by either a 'Res' or 'Err' suffix for method results and errors, respectively. To handle responses and reports, the application or service developer must implement the relevant IpApp<name> or IpSvc<name> interfaces to provide the callback mechanism.

5.1.3 Parameter descriptions

Each method parameter and its possible values are described. Parameters described as 'in' represent those that must have a value when the method is called. Those described as 'out' are those that contain the return result of the method when the method returns.

5.1.4 State Model

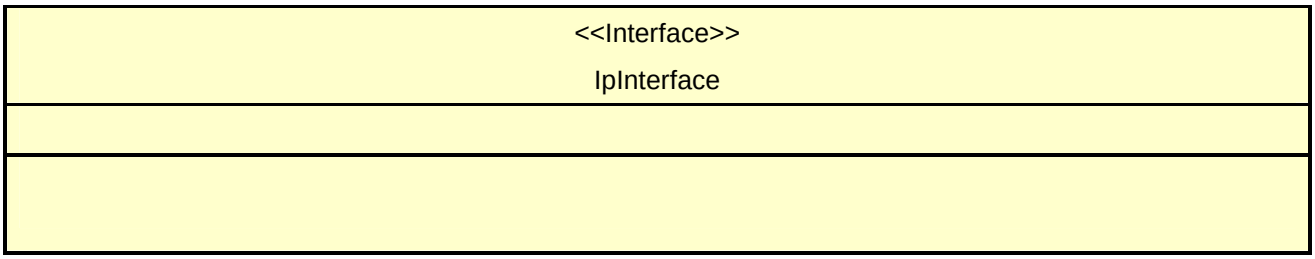
If relevant, a state model is shown to illustrate the states of the objects that implement the described interface.

5.2 Base Interface

5.2.1 Interface Class IpInterface

All application, framework and service interfaces inherit from the following interface. This API Base Interface does not provide any additional methods.

SIST ES 202 915-4-1 V1.2.1:2005



5.3 Service Interfaces

5.3.1 Overview

The Service Interfaces provide the interfaces into the capabilities of the underlying network - such as call control, user interaction, messaging, mobility and connectivity management.

The interfaces that are implemented by the services are denoted as 'Service Interface'. The corresponding interfaces that must be implemented by the application (e.g. for API callbacks) are denoted as 'Application Interface'.

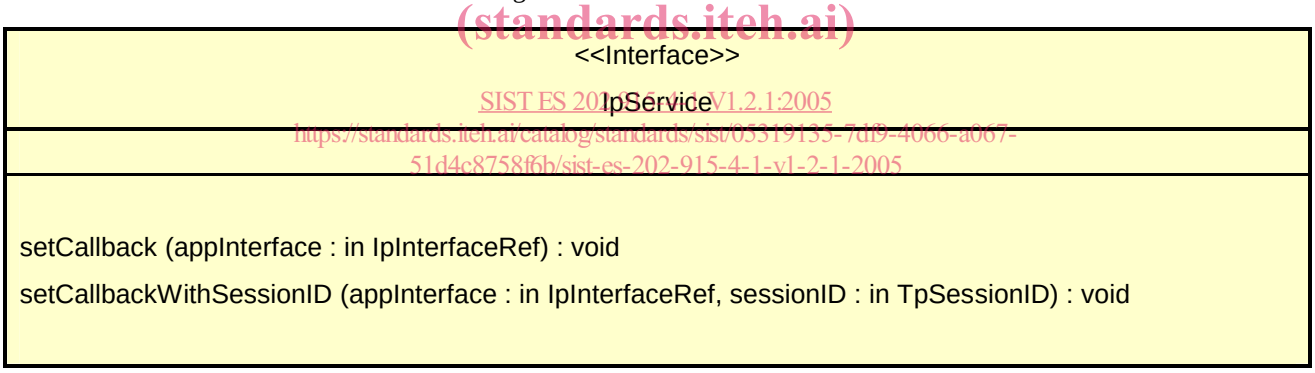
5.4 Generic Service Interface

5.4.1 Interface Class IpService

Inherits from: IpInterface;

iTeh STANDARD PREVIEW
(standards.iteh.ai)

All service interfaces inherit from the following interface.



SIST ES 202 915-4-1 V1.2.1:2005
https://standards.iteh.ai/catalog/standards/sist/05319135-7df9-4066-a067-51d4c8758f6b/sist-es-202-915-4-1-v1.2.1-2005

5.4.1.1 Method setCallback()

This method specifies the reference address of the callback interface that a service uses to invoke methods on the application. It is not allowed to invoke this method on an interface that uses SessionIDs.

Parameters

`appInterface : in IpInterfaceRef`

Specifies a reference to the application interface, which is used for callbacks.

Raises

`TpCommonExceptions, P_INVALID_INTERFACE_TYPE`