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Open Service Access (OSA); Application Programming Interface (API); Part 2: Common Data Definitions (Parlay 3)

Open Service Access (OSA); Application Programming Interface (API); Part 2: Common Data Definitions (Parlay 3)

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Contents

Intellectual Property Rights	5
Foreword.....	5
1 Scope	6
2 References	6
3 Definitions and abbreviations.....	6
3.1 Definitions	6
3.2 Abbreviations	6
4 Common Data Definitions.....	6
5 Common System Data Definitions.....	7
5.1 Standard Data Types	7
5.1.1 TpBoolean.....	7
5.1.2 TpInt32	7
5.1.3 TpFloat.....	7
5.1.4 TpLongString.....	7
5.1.5 TpOctet.....	7
5.1.6 TpOctetSet	7
5.1.7 TpString	7
5.1.8 TpAssignmentID.....	7
5.1.9 TpSessionID	7
5.1.10 TpSessionIDSet	8
5.1.11 TpAny	8
5.1.12 TpAttribute	8
5.1.13 TpAttributeType	8
5.1.14 TpAttributeList	8
5.1.15 TpAttributeSet	8
5.2 Other Data Sorts	9
5.2.1 Sequence of Data Elements	9
5.2.2 Tagged Choice of Data Elements	9
5.2.3 Numbered Set of Data Elements	9
5.2.4 Reference	10
5.3 Interface Related Data Definitions	10
5.3.1 IpInterface.....	10
5.3.2 IpInterfaceRef	10
5.4 Exception Classes.....	10
5.4.1 Underlying Technology Exceptions	10
5.4.2 TpCommonExceptions	10
5.4.3 Constants associated with TpCommonExceptions	11
5.4.4 Exceptions available to all methods on all interfaces	11
5.5 Date and Time Related Data Definitions.....	12
5.5.1 TpDate	12
5.5.2 TpTime	12
5.5.3 TpDateAndTime	13
5.5.4 TpDuration.....	13
5.5.5 TpTimeInterval	13
5.6 Address Related Data Definitions	14
5.6.1 TpAddress.....	14
5.6.2 TpAddressSet.....	15
5.6.3 TpAddressPresentation	15
5.6.4 TpAddressScreening	15
5.6.5 TpAddressPlan.....	15
5.6.6 TpAddressError	16
5.6.7 TpAddressRange.....	16
5.6.8 TpURL.....	17

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SIST ES 201 915-2 V1.4.1:2005

<https://standards.iteh.ai/catalog/standards/sist/df5274a0-618e-423d-83cd-517996b78c00/sist-es-201-915-2-v1-4-1-2005>

5.7	Price-related Data Definitions	17
5.7.1	TpPrice.....	17
5.7.2	TpAoCInfo.....	17
5.7.3	TpAoCOrder	18
5.7.4	TpCallAoCOrderCategory.....	18
5.7.5	TpChargeAdviceInfo	18
5.7.6	TpCAIElements	18
5.7.7	TpChargePerTime.....	19
5.7.8	TpLanguage	19
Annex A (normative):	OMG IDL Description of the Common Data definitions	20
Annex B (informative):	Record of changes	21
B.1	Data Definitions	21
B.1.1	New	21
B.1.2	Modified.....	21
B.1.3	Removed.....	21
B.2	Exceptions	22
B.2.1	New	22
B.2.2	Modified.....	22
B.2.3	Removed.....	22
B.3	Others	22
History		23

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[SIST ES 201 915-2 V1.4.1:2005](https://standards.iteh.ai/catalog/standards/sist/df5274a0-618e-423d-83cd-5f799bb78c00/sist-es-201-915-2-v1-4-1-2005)

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Foreword

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

The present document is part 2 of a multi-part deliverable covering Open Service Access (OSA); Application Programming Interface (API), as identified below. The API specification (ES 201 915) is structured in the following parts:

- Part 1: "Overview";
- Part 2: "Common Data Definitions";**
- Part 3: "Framework";
- Part 4: "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".

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 3.3 set of specifications.

The present document is equivalent to 3GPP TS 29.198-2 V4.5.0 (Release 4).

1 Scope

The present document is part 2 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 Data Definitions of the OSA. The Common Data Definitions contain data-types that are common across the rest of the OSA API. All aspects of the Common Data are defined here, these being:

- Data Definitions
- IDL Description of the interfaces

2 References

The references listed in clause 2 of ES 201 915-1 contain provisions which, through reference in this text, constitute provisions of the present document.

ETSI ES 201 915-1: "Open Service Access (OSA); Application Programming Interface (API); Part 1: Overview (Parlay 3)".

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3 Definitions and abbreviations

3.1 Definitions

[SIST ES 201 915-2 V1.4.1:2005](https://standards.iteh.ai/catalog/standards/sist/df5274a0-618e-423d-83cd-5f799bb78c00/sist-es-201-915-2-v1-4-1-2005)

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For the purposes of the present document, the terms and definitions given in ES 201 915-1 apply.

3.2 Abbreviations

For the purposes of the present document, the abbreviations defined in ES 201 915-1 apply.

4 Common Data Definitions

The following clauses describe each aspect of the Common data definitions.

The order is as follows:

- The Data Definitions section shows 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 of the present document.

5 Common System Data Definitions

These data definitions are assumed to be provided by the client operating system.

5.1 Standard Data Types

The APIs assume that the following data types can be supported.

5.1.1 TpBoolean

Defines a Boolean data type.

5.1.2 TpInt32

Defines a signed 32-bit integer.

5.1.3 TpFloat

Defines a single precision real number

5.1.4 TpLongString

Defines a Byte string, comprising length and data. The length must be at least a 32-bit integer.

5.1.5 TpOctet

Defines an 8-bit quantity that is not translated during transmission.

5.1.6 TpOctetSet

Defines a Numbered Set of Data elements of TpOctet.

5.1.7 TpString

Defines a Byte string, comprising length and data. The length must be at least a 16-bit integer.

5.1.8 TpAssignmentID

Defines an assignment ID with a value that is unique within any instance of an implementation of a given interface, irrespective of the method invoked on that interface instance. This ID may be used for example to identify single or multiple event notifications enabled by a requesting interface implementation, or may be used by a requesting interface implementation to modify or stop functionality associated with a previously supplied assignment ID, e.g. event notifications, call load control, abort requests.

The assignment ID is identical to a [TpInt32](#) type.

5.1.9 TpSessionID

Defines a session ID with a value that is at least unique within the context of a specific instance of an SCF. An instance of an SCF is a single service manager instance plus the associated subordinate instances. For example, a single MultiPartyCallControlManager instance plus all associated MultiPartyCall and MultiPartyCallLeg instances. The session ID is used to identify different sessions (e.g. different call or call leg sessions) of an interface capable of handling multiple sessions.

Example 1, myCallObject may implement the IpCall interface. If so, myCallObject may handle multiple call sessions, and each call session will be identified by a call session ID value (e.g. 1, 2, 3) that is unique within the context of the SCF instance.

Example 2, myCallAndCallLegObject may implement the IpCall and IpCallLeg interfaces. If so, myCallAndCallLegObject may handle multiple call sessions and multiple call leg sessions. Each call session will be identified by a call session ID value (e.g. 1, 2, 3) that is unique within the context of the SCF instance. Similarly, each call leg session will be identified by a call leg session ID value (e.g. 1, 2, 3, 4, 5, 6) that is also unique within the context of the SCF instance. Because call session IDs and call leg session IDs are different data types, overlapping values are permitted and their uniqueness still remains.

The session ID is identical to a [TpInt32](#) type.

5.1.10 TpSessionIDSet

Defines a [Numbered Set of Data Elements](#) of [TpSessionID](#).

5.1.11 TpAny

Defines a type that can hold any type. This is not restricted to only the primitive types.

5.1.12 TpAttribute

This is a Sequence of Data Elements containing the attribute name, type, and value. The attribute Value is interpreted based on the value of the attribute Type.

Sequence Element Name	Sequence Element Type	Notes
AttributeName	TpString	The name of the attribute.
AttributeType	TpAttributeType	The type of the attribute. Valid values for Type must include at least TpString , TpInt32 and TpFloat .
AttributeValue	TpAny	The values for the attribute. This model allows multi-valued attributes. Cannot be an empty list.

5.1.13 TpAttributeType

This data type is identical to a [TpString](#), and is defined as a string of characters that uniquely identifies the type of an attribute. Other Network operator specific capabilities may also be used, but should be preceded by the string "SP_". The following values are defined.

Character String Value	Description
NULL	An empty (NULL) string indicates no attribute type
P_STRING	Attribute type is type TpString .
P_INT32	Attribute type is type TpInt32 .
P_FLOAT	Attribute type is type TpFloat .

5.1.14 TpAttributeList

This is a [Numbered List of Data Elements](#) of type [TpAttribute](#).

5.1.15 TpAttributeSet

This is a [Numbered Set of Data Elements](#) of type [TpAttribute](#).

5.2 Other Data Sorts

The APIs assumes that the following data syntaxes can be supported.

5.2.1 Sequence of Data Elements

This describes a sequence of data types. This may be defined as a structure (for example, in C++) or simply a sequence of data elements within a structure.

Example

The [TpAddress](#) data type may be defined in C++ as:

```
typedef struct {
    TpAddressPlan          Plan;
    TpString               AddrString;
    TpString               Name;
    TpAddressPresentation Presentation;
    TpAddressScreening     Screening;
    TpString               SubAddressString;
} TpAddress;
```

5.2.2 Tagged Choice of Data Elements

This describes a data type which actually evaluates to one of a choice of a number of data elements. This data element contains two parts: a tag data type (the *tag* part) which is used to identify the chosen data type, and the chosen data type itself (the *union* part). This form of data type is also referred to as a tagged union.

This data type can be implemented (for example, in C++) as a structure containing an integer for the *tag* part, and a union for the *union* part.

This data type is implementation specific. Please refer to the appropriate IDL documents (and the resulting language mappings) to see how this data type is implemented.

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Example

The [TpCallError](#) data type may be defined in C++ as:

```
typedef struct {
    TpCallErrorType Tag;
    union {
        TpCallErrorInfoUndefined      Undefined;
        TpCallErrorInfoRoutingAborted RoutingAborted;
        TpCallErrorInfoCallAbandoned  CallAbandoned;
        TpCallErrorInfoInvalidAddress  InvalidAddress;
        TpCallErrorInfoInvalidState    InvalidState;
        TpCallErrorInfoInvalidCriteria InvalidCriteria;
    } callErrorInfo;
} TpCallError;
```

5.2.3 Numbered Set of Data Elements

This describes a data type which comprises an integer which indicates the total number of data elements in the set (the *number* part), and an **unordered** set of data elements (the *data* part). *Set* data types do not contain duplicate data elements.

Example

The [TpAddressSet](#) data type may be defined in MIDL as:

```
typedef struct TpAddressSet
{
    TpInt32 Number; [size_is(Number)] TpAddress Set[];
}
TpAddressSet;
```