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

Reference

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Foreword

This ETSI Standard (ES) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN), and is now submitted for the ETSI standards Membership Approval Procedure.

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 [24] of ES 201 915-1 and the 3GPP, in co-operation with a number of JAIN™ Community [25] of ES 201 915-1 member companies.

The present document forms part of the Parlay 3.1 set of specifications.

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".

3 Definitions and abbreviations

3.1 Definitions

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 given 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 this specification.

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 the context of the implementation of the interface creating this ID. This ID is used to identify single or multiple event notifications enabled by the requesting interface implementation. This ID can also be used by the requesting interface implementation to modify or stop further event notifications.

Example 1, myIpUserLocation may implement the IpUserLocation interface. If so, myIpUserLocation may receive multiple Req methods, and will generate a single assignment ID per request that is unique within the context of myIpUserLocation.

Example 2, myIpMultiPartyCallControlManager may implement the IpMultiPartyCallControlManager interface. If so, myIpMultiPartyCallControlManager may receive multiple createNotification method invocations, and will generate a single assignment ID per request that is unique within the context of myIpMultiPartyCallControlManager. myIpMultiPartyCallControlManager may also receive changeNotification or destroyNotification methods that will contain an assignment ID used to correlate these methods with the original createNotification method.

The assignment ID is identical to a TpInt32 type.

5.1.9 TpSessionID

Defines a session ID with a value that is unique within the context of a specific implementation of an interface. This 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 myCallObject.

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 myCallAndCallLegObject. 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 myCallAndCallLegObject. 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 attirbute. 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.

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;
```

5.2.4 Reference

This describes a reference (or pointer) to a data type.

5.3 Interface Related Data Definitions

5.3.1 IpInterface

Defines the address of a generic interface instance.

5.3.2 IpInterfaceRef

Defines a Reference to type IpInterface.

5.4 Exception Classes

5.4.1 Underlying Technology Exceptions

All methods contain a signature showing, amongst other things, the explicit exceptions that they may throw. In addition to these exceptions, all methods can throw a number of implicit exceptions. These exceptions do not need to be included within the method signatures and are given below.

These exceptions would be thrown by the underlying technology (e.g. CORBA, Java) as a result of problems encountered, for example, with the way the API method is invoked. They are a minimum set of exceptions that must be throwable by the underlying technology. Depending upon the underlying technology, additional method exceptions may also be thrown.

Description
Invalid Parameter: A method has been passed an invalid parameter argument
Invalid Parameter Value: A method parameter has been passed a value that is out of range
Parameter Missing: A method has not been passed a mandatory parameter argument

5.4.2 TpCommonExceptions

Defines the structure of the exception class which is applicable to all methods.

Structure Element Name	Structure Element Type	Structure Element Description
ExceptionType	TpInt32	Carries a constant from the list in the table below
ExtraInformation	TpString	Carries extra information to help identify the source of the exception, e.g. a parameter name

5.4.3 Constants associated with TpCommonExceptions

Name	Value	Description
P_RESOURCES_UNAVAILABLE	000Dh	The required resources in the network are not available
P_TASK_REFUSED	000Eh	The requested method has been refused
P_TASK_CANCELLED	000Fh	The requested method has been cancelled
P_NO_CALLBACK_ADDRESS_SET	0011h	The requested method is refused because no callback address has been set (this may be the result of a timing issue between setting the callback address and invoking the method)
P_METHOD_NOT_SUPPORTED	0016h	The method is not allowed or supported within the context of the current service agreement.
P_INVALID_STATE	0306h	Unexpected sequence of methods, i.e., the sequence does not match the specified state diagrams.

5.4.4 Exceptions available to all methods on all interfaces

The following are the list of exception classes which are available to all interfaces of the API.

Name	Description
P_APPLICATION_NOT_ACTIVATED	An application is unauthorised to access information and request services with regards to users that have deactivated that particular application. In case the request was for information related to multiple user identities the reference to user identities that are causing this exception will be returned in the extra information of the exception.
P_INFORMATION_NOT_AVAILABLE	The requested information is not available. A reason might be that the information is unavailable in the core network or that the application is unauthorised to access the information. In case the request was for information related to multiple user identities, the reference to user identities that are causing this exception will be returned in the extra information of the exception.
P_INVALID_ADDRESS	Invalid address specified
P_INVALID_AMOUNT	Invalid amount specified.
P_INVALID_ASSIGNMENT_ID	The assignment ID is invalid
P_INVALID_CRITERIA	Invalid criteria specified
P_INVALID_CURRENCY	Invalid currency specified.
P_INVALID_EVENT_TYPE	Invalid event type
P_INVALID_INTERFACE_NAME	Invalid interface name
P_INVALID_INTERFACE_TYPE	The interface reference supplied by the client is the wrong type.
P_INVALID_NETWORK_STATE	Although the sequence of method calls is allowed by the gateway, the underlying protocol cannot support it. E.g., in some protocols some methods are only allowed by the protocol, when the call processing is suspended, e.g., after reporting an event that was monitored in interrupt mode.
P_INVALID_SESSION_ID	Invalid session ID.
P_INVALID_TIME_AND_DATE_FORMAT	Invalid date and time format provided
P_SET_LENGTH_EXCEEDED	The maximum set size is exceeded in a method parameter value.
P_UNAUTHORISED_PARAMETER_VALUE	A method parameter value violates the Service Level Agreement
P_UNKNOWN_SUBSCRIBER	The subscriber is not known in the network or the application is unauthorised to access information. In case the request was for information related to multiple user identities, the reference to user identities that are causing this exception will be returned in the extra information of the exception.
P_UNSUPPORTED_ADDRESS_PLAN	An address contains an address plan which is not supported

5.5 Date and Time Related Data Definitions

5.5.1 TpDate

This data type is identical to a TpString. It specifies the data in accordance with International Standard ISO 8601. This is defined as the string of characters in the following format:

`YYYY-MM-DD`

where the date is specified as:

`YYYY`	four digits year
`MM`	two digits month
`DD`	two digits day

The date elements are separated by a hyphen character (-).

EXAMPLE: The 4 December 1998, is encoded as the string:

`1998-12-04`

5.5.2 TpTime

This data type is identical to a TpString. It specifies the time in accordance with International Standard ISO 8601. This is defined as the string of characters in the following format:

`HH:MM:SS.mmm`

or

`HH:MM:SS.mmmZ`

where the time is specified as:

`HH`	two digits hours (24h notation)
`MM`	two digits minutes
`SS`	two digits seconds
`mmm`	three digits fractions of a second (i.e. milliseconds)

The time elements are separated by a colon character (`:`).The date and time are separated by a space. Optionally, a capital letter `Z` may be appended to the time field to indicate Universal Time (UTC). Otherwise, local time is assumed.

EXAMPLE: 10:30 and 15 seconds is encoded as the string:

`10:30:15.000`

for local time, or in UTC it would be: `10:30:15.000Z`

5.5.3 TpDateAndTime

This data type is identical to a TpString. It specifies the data and time in accordance with International Standard ISO 8601. This is defined as the string of characters in the following format:

`YYYY-MM-DD HH:MM:SS.mmm`

or

`YYYY-MM-DD HH:MM:SS.mmmZ`

where the date is specified as:

`YYYY`	four digits year
`MM`	two digits month
`DD`	two digits day

The date elements are separated by a hyphen character (-).

The time is specified as:

`HH`	two digits hours (24h notation)
`MM`	two digits minutes
`SS`	two digits seconds
`mmm`	three digits fractions of a second (i.e. milliseconds)

The time elements are separated by a colon character (`:`).The date and time are separated by a space. Optionally, a capital letter `Z` may be appended to the time field to indicate Universal Time (UTC). Otherwise, local time is assumed.

EXAMPLE: The 4 December 1998, at 10:30 and 15 seconds is encoded as the string:

`1998-12-04 10:30:15.000`

for local time, or in UTC it would be:

`1998-12-04 10:30:15.000Z`

5.5.4 TpDuration

This data type is a TpInt32 representing a time interval in milliseconds. A value of "-1" defines infinite duration and a value of "-2" represents a default duration.

5.5.5 TpTimeInterval

Defines the Sequence of Data Elements that specify a time interval.

Sequence Element Name	Sequence Element Type
`StartTime`	`TpDateAndTime`
`StopTime`	`TpDateAndTime`

5.6 Address Related Data Definitions

5.6.1 TpAddress

Defines the Sequence of Data Elements that specify an address.

Sequence Element Name	Sequence Element Type
Plan	TpAddressPlan
AddrString	TpString
Name	TpString
Presentation	TpAddressPresentation
Screening	TpAddressScreening
SubAddressString	TpString

The AddrString defines the actual address information and the structure of the string depends on the Plan. The following table gives an overview of the format of the AddrString for the different address plans.

Address Plan	AddrString Format Description	Example
P_ADDRESS_PLAN_NOT_PRESENT	Not applicable	
P_ADDRESS_PLAN_UNDEFINED	Not applicable	
P_ADDRESS_PLAN_IP	For Ipv4 the dotted quad notation is used. Also for IPv6 the dotted notation is used. The address can optionally be followed by a port number separated by a colon.	"127.0.0.1:42"
P_ADDRESS_PLAN_MULTICAST	An Ipv4 class D address or Ipv6 equivalent in dotted notation.	"224.0.0.0"
P_ADDRESS_PLAN_UNICAST	A non-multicast or broadcast IP address in dotted notation.	"127.0.0.1"
P_ADDRESS_PLAN_E164	An international number without the international access code, including the country code and excluding the leading zero of the area code.	"31161249111"
P_ADDRESS_PLAN_AESA	The ATM End System Address in binary format (40 bytes)	01234567890ABCDEF01234567890AB CDEF01234567
P_ADDRESS_PLAN_URL	A uniform resource locator as defined in IETF RFC 1738	"http://www.parlay.org"
P_ADDRESS_PLAN_NSAP	The binary representation of the Network Service Access Point	490001AA000400010420
P_ADDRESS_PLAN_SMTP	An e-mail address as specified in IETF RFC822	"webmaster@parlay.org"
P_ADDRESS_PLAN_MSMAIL	Identical to P_ADDRESS_PLAN_SMTP	"john.doe@hitech.com"
P_ADDRESS_PLAN_X400	The X400 address structured as a set of attribute value pairs separated by semicolons.	"C=nl;ADMD= ;PRMD=uninet;O=parlay;S=Doe;I=S;G= John'
P_ADDRESS_PLAN_SIP (Note 1)	A valid SIP address string	sip:user@parlay.org <sip:enquiries@1.2.3.4:5060> Enquiries
P_ADDRESS_PLAN_ANY (Note 2)	Not applicable	

NOTE 1: It should be noted that two SIP addresses will be regarded as equivalent by a gateway if they correspond to the same user at the same network address. The textual form of the two addresses need not be the same. For example, sip:enquiries@parlay.org will be deemed to match <sip:Enquiries@1.2.3.4:5060>Enquiries (if parlay.org resolves to 1.2.3.4).

NOTE 2: This is only to be used with TpAddressRange.

5.6.2 TpAddressSet

Defines a Numbered Set of Data Elements of TpAddress.

5.6.3 TpAddressPresentation

Defines whether an address can be presented to an end user.

Name	Value	Description
P_ADDRESS_PRESENTATION_UNDEFINED	0	Undefined
P_ADDRESS_PRESENTATION_ALLOWED	1	Presentation Allowed
P_ADDRESS_PRESENTATION_RESTRICTED	2	Presentation Restricted
P_ADDRESS_PRESENTATION_ADDRESS_NOT_AVAILABLE	3	Address not available for presentation

5.6.4 TpAddressScreening

Defines whether an address can be presented to an end user.

Name	Value	Description
P_ADDRESS_SCREENING_UNDEFINED	0	Undefined
P_ADDRESS_SCREENING_USER_VERIFIED_PASSED	1	user provided address verified and passed
P_ADDRESS_SCREENING_USER_NOT_VERIFIED	2	user provided address not verified
P_ADDRESS_SCREENING_USER_VERIFIED_FAILED	3	user provided address verified and failed
P_ADDRESS_SCREENING_NETWORK	4	Network provided address (Note that even though the application may provide the address to the gateway, from the end-user point of view it is still regarded as a network provided address)

5.6.5 TpAddressPlan

Defines the address plan (or numbering plan) used. It is also used to indicate whether an address is actually defined in a TpAddress data element.

Name	Value	Description
P_ADDRESS_PLAN_NOT_PRESENT	0	No Address Present
P_ADDRESS_PLAN_UNDEFINED	1	Undefined
P_ADDRESS_PLAN_IP	2	IP
P_ADDRESS_PLAN_MULTICAST	3	Multicast
P_ADDRESS_PLAN_UNICAST	4	Unicast
P_ADDRESS_PLAN_E164	5	E.164
P_ADDRESS_PLAN_AESA	6	AESA
P_ADDRESS_PLAN_URL	7	URL
P_ADDRESS_PLAN_NSAP	8	NSAP
P_ADDRESS_PLAN_SMTP	9	SMTP
P_ADDRESS_PLAN_MSMAIL	10	Microsoft Mail
P_ADDRESS_PLAN_X400	11	X.400
P_ADDRESS_PLAN_SIP	12	SIP
P_ADDRESS_PLAN_ANY	13	Any address plan is deemed to match (This is only used for TpAddressRange)

For the case where the `P_ADDRESS_PLAN_NOT_PRESENT` and `P_ADDRESS_PLAN_ANY` are indicated, the rest of the information in the TpAddress is not valid.

5.6.6 TpAddressError

Defines the reasons why an address is invalid.

Name	Value	Description
P_ADDRESS_INVALID_UNDEFINED	0	Undefined error
P_ADDRESS_INVALID_MISSING	1	Mandatory address not present
P_ADDRESS_INVALID_MISSING_ELEMENT	2	Mandatory address element not present
P_ADDRESS_INVALID_OUT_OF_RANGE	3	Address is outside of the valid range
P_ADDRESS_INVALID_INCOMPLETE	4	Address is incomplete
P_ADDRESS_INVALID_CANNOT_DECODE	5	Address cannot be decoded

5.6.7 TpAddressRange

Defines the Sequence of Data Elements that specify a range of addresses.

Sequence Element Name	Sequence Element Type
Plan	TpAddressPlan
AddrString	TpString
Name	TpString
SubAddressString	TpString

The AddrString defines the actual address information and the structure of the string depends on the Plan.

An overview of the AddrString formats can be found at the description of the TpAddress data-type.

The difference with TpAddress is that there is no Presentation and Screening elements, the AddrString can contain wildcards and Plan may contain P_ADDRESS_PLAN_ANY.

If P_ADDRESS_PLAN_ANY is set then the TpAddressRange will be deemed by the gateway to match any TpAddress. If a specific Plan is set (including P_ADDRESS_PLAN_NOT_PRESENT) then the address plan of the range must be identical to the plan contained in an address for the two to match.

Two wildcards are allowed: * which matches zero or more characters and ? which matches exactly one character. For E.164 addresses, * which matches zero or more characters and ? are allowed at the beginning or end.

Some examples for E.164 addresses:

- "123" matches specific number;
- "123*" matches all numbers starting with 123 (including 123 itself);
- "123??*" matches all numbers starting with 123 and at least 5 digits long;
- "123???" matches all numbers starting with 123 and exactly 6 digits long;
- "*" matches any address

The following address ranges are illegal:

- "1?3"
- "1*3"
- "?123*"
- ""

Legal occurrences of the '*' and '?' characters in AddrString should be escaped by a '\' character. To specify a '\' character '\\' must be used.

For e-mail style addresses, the wildcards are allowed at the beginning of the AddrString:

- "*@parlay.org" matches all email addresses in the parlay.org domain.

For SIP addresses, wildcards are allowed between the ‘sip:’ and the ‘@’ in the AddrString, e.g.

- "sip:*@parlay.org" matches all SIP addresses at parlay.org:5060.

5.6.8 TpURL

This data type is identical to a TpString and contains a URL address. The usage of this type is distinct from TpAddress, which can also hold a URL. The latter contains a user address which can be specified in many ways: IP, e-mail, URL etc. On the other hand, the TpURL type does not hold the address of a user and always represents a URL. This type is used in user interaction and defines the URL of the test or stream to be sent to an end-user. It is therefore inappropriate to use a general address here.

5.7 Price-related Data Definitions

5.7.1 TpPrice

This data type is identical to a TpString. It specifies price information. This is defined as a string of characters (digits) in the following format:

DDDDDD.DD

5.7.2 TpAoCInfo

Defines the Sequence of Data Elements that specify the Advice Of Charge information to be sent to the terminal.

Sequence Element Name	Sequence Element Type	Description
ChargeOrder	TpAoCOrder	Charge order
Currency	TpString	Currency unit according to ISO-4217:1995

5.7.3 TpAoCOrder

Defines the Tagged Choice of Data Elements that specify the charge plan for the call.

	Tag Element Type	
	TpCallAoCOrderCategory	

Tag Element Value	Choice Element Type	Choice Element Name
P_CHARGE_ADVICE_INFO	TpChargeAdviceInfo	ChargeAdviceInfo
P_CHARGE_PER_TIME	TpChargePerTime	ChargePerTime
P_CHARGE_NETWORK	TpString	NetworkCharge

5.7.4 TpCallAoCOrderCategory

Name	Value	Description
P_CHARGE_ADVICE_INFO	0	Set of GSM Charge Advice Information elements according to TS 122 024
P_CHARGE_PER_TIME	1	Charge per time
P_CHARGE_NETWORK	2	Operator specific charge plan specification, e.g. charging table name / charging table entry

5.7.5 TpChargeAdviceInfo

Defines the Sequence of Data Elements that specify the two sets of Advice of Charge parameters. The first set defines the current tariff. The second set may be used in case of a tariff switch in the network.

Sequence Element Name	Sequence Element Type	Description
CurrentCAI	TpCAIElements	Current tariff
NextCAI	TpCAIElements	Next tariff after tariff switch

5.7.6 TpCAIElements

Defines the Sequence of Data Elements that specify the Charging Advice Information elements according to TS 122 024.

Sequence Element Name	Sequence Element Type	Description
UnitsPerInterval	TpInt32	Units per interval
SecondsPerTimeInterval	TpInt32	Seconds per time interval
ScalingFactor	TpInt32	Scaling factor
UnitIncrement	TpInt32	Unit increment
UnitsPerDataInterval	TpInt32	Units per data interval
SegmentsPerDataInterval	TpInt32	Segments per data interval
InitialSecsPerTimeInterval	TpInt32	Initial secs per time interval

5.7.7 TpChargePerTime

Defines the Sequence of Data Elements that specify the time based charging information.

Sequence Element Name	Sequence Element Type	Description
InitialCharge	TpInt32	Initial charge amount (in currency units * 0.0001)
CurrentChargePerMinute	TpInt32	Current tariff (in currency units * 0.0001)
NextChargePerMinute	TpInt32	Next tariff (in currency units * 0.0001) after tariff switch Only used in setAdviceOfCharge()

5.7.8 TpLanguage

This data type is identical to a TpString, and defines the language. In case an indication for the language is not needed an empty string must be used. In other cases valid language strings are defined in ISO 639.

Annex A (normative): OMG IDL Description of the Common Data definitions

The OMG IDL representation of the present document is contained in a text file (osa.idl contained in archive es_20191502v010203m0.ZIP) which accompanies the present document.

Annex B (informative): Summary of differences between V1.1.1 (Parlay 3.0) and V1.2.1 (Parlay 3.1)

TpAoCOrder

Defines the Tagged Choice of Data Elements that specify the charge plan for the call.

	Tag Element Type	
	TpCallAoCOrderCategory	

Tag Element Value	Choice Element Type	Choice Element Name
P_CHARGE_ADVICE_INFO	TpChargeAdviceInfo	ChargeAdviceInfo
P_CHARGE_PER_TIME	TpChargePerTime	ChargePerTime
P_CHARGE_NETWORK	TpString	NetworkCharge

TpCAIElements

Defines the Sequence of Data Elements that specify theCharging Advice Information elements according to 3GPP TS 22.024.

Sequence Element Name	Sequence Element Type	Description
UnitsPerInterval	TpInt32	Units per interval
SecondsPerTimeInterval	TpInt32	Seconds per time interval
ScalingFactor	TpInt32	Scaling factor
UnitIncrement	TpInt32	Unit increment
UnitsPerDataInterval	TpInt32	Units per data interval
SegmentsPerDataInterval~~SegmentsPerDataInteral~~	TpInt32	Segments per data interval
InitialSecsPerTimeInterval	TpInt32	Initial secs per time interval

TpAddressPlan

Defines the address plan (or numbering plan) used. It is also used to indicate whether an address is actually defined in a TpAddress data element.

Name	Value	Description
- P_ADDRESS_PLAN_NOT_PRESENT	0~~-1~~	No Address Present
P_ADDRESS_PLAN_UNDEFINED	1~~0~~	Undefined
P_ADDRESS_PLAN_IP	2~~1~~	IP
P_ADDRESS_PLAN_MULTICAST	3~~2~~	Multicast
P_ADDRESS_PLAN_UNICAST	4~~3~~	Unicast
P_ADDRESS_PLAN_E164	5~~4~~	E.164
P_ADDRESS_PLAN_AESA	6~~5~~	AESA
P_ADDRESS_PLAN_URL	7~~6~~	URL
P_ADDRESS_PLAN_NSAP	8~~7~~	NSAP
P_ADDRESS_PLAN_SMTP	9~~8~~	SMTP
P_ADDRESS_PLAN_MSMAIL	10~~9~~	Microsoft Mail
P_ADDRESS_PLAN_X400	11~~10~~	X.400
P_ADDRESS_PLAN_SIP	12~~11~~	SIP
P_ADDRESS_PLAN_ANY	13~~12~~	Any address plan is deemed to match (This is only used for TpAddressRange)

The following data types were added:

TpAny

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

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.

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`.

TpAttributeList

This is a `Numbered List of Data Elements` of type TpAttribute.

TpAttributeSet

This is a `Numbered Set of Data Elements` of type TpAttribute.

History

Document history			
V1.1.1	February 2002	Publication	
V1.2.3	May 2002	Membership Approval Procedure	MV 20020705: 2002-05-07 to 2002-07-05