

3GPP TSG CN Plenary Meeting #13
Beijing, China, 19th-21st September 2001

NP-010465

Source: CN5 (OSA)
Title: CRs 29.198-02 Rel-4
Agenda item: 8.5
Document for: Approval

Doc-1st-Level	Doc-2nd-Level	Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New	Meeting-2nd-Level	Workitem
NP-010465	N5-010675	29.198-02	003		Rel-4	Changing references to JAIN	F	4.1.0	4.2.0	N5-12	OSA1
NP-010465	N5-010658	29.198-02	004		Rel-4	Clarification of common exceptions	F	4.1.0	4.2.0	N5-12	OSA1
NP-010465	N5-010659	29.198-02	005		Rel-4	Invalid parameter value exception for SLA violation	F	4.1.0	4.2.0	N5-12	OSA1
NP-010465	N5-010665	29.198-02	006		Rel-4	Storing eventCriteria	F	4.1.0	4.2.0	N5-12	OSA1

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CHANGE REQUEST

⌘ **29.198-02 CR 003** ⌘ ev **-** ⌘ Current version: **4.1.0** ⌘

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Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Changing references to JAIN		
Source:	⌘ CN5		
Work item code:	⌘ OSA1	Date:	⌘ 30/08/2001
Category:	⌘ F	Release:	⌘ REL-4
	<i>Use one of the following categories:</i> F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ Incorrect references to JAIN.		
Summary of change:	⌘ Correct references to the JAIN.		
Consequences if not approved:	⌘ Potential legal ramifications		

Clauses affected:	⌘ 1		
Other specs affected:	⌘ <input checked="" type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	All other parts of TS 29.198 Rel-4
Other comments:	⌘		

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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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 concepts and the functional architecture for the OSA are contained in 3GPP TS 23.127 [3]. The requirements for OSA are contained in 3GPP TS 22.127 [2].

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

This specification has been defined jointly between 3GPP TSG CN WG5, ETSI SPAN 12 and the Parlay Consortium, in co-operation with [a number of JAIN™ Community member companies](#)~~the JAIN consortium~~.

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CHANGE REQUEST

⌘ **29.198-02 CR 004** ⌘ ev **-** ⌘ Current version: **4.1.0** ⌘

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Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Clarification of common exceptions		
Source:	⌘ CN5		
Work item code:	⌘ OSA1	Date:	⌘ 30/08/2001
Category:	⌘ F	Release:	⌘ REL-4
	<i>Use one of the following categories:</i> F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ Some of the exceptions are too vague or too explicit on authorisation while there could be other reasons for the exception. Furthermore some exceptions, related to requests for multiple addresses or user identities could explicitly return additional data indicating the addresses that give rise to problems. At this moment this is not described in the specification.
Summary of change:	⌘ Clarification text is added.
Consequences if not approved:	⌘ Ambiguous specification leading to wrong implementation of applications and SCSSs.

Clauses affected:	⌘ 5.8		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

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5.8 Exception Classes

5.8.1 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

5.8.2 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 is set
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.

5.8.3 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. <u>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.</u>
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. An application is unauthorised to access information and request services with regards to users that have set their privacy flag regarding that particular service. <u>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.</u>
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 can not 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

Name	Description
P_SET_LENGTH_EXCEEDED	The maximum set size is exceeded in a method parameter value.
P_UNKNOWN_SUBSCRIBER	<p data-bbox="735 262 1437 338">The subscriber is not known in the network or the application is An application is unauthorised to access information and request services with regards to users that are not subscribed to the application.</p> <p data-bbox="735 344 1437 421">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>

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

The OMG IDL representation of this specification is contained in a text file (osa.idl contained in archive 2919802IDL.ZIP) which accompanies the present document.

Annex B (informative): Change history

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
Mar 2001	CN_11	NP-010134	047	--	CR 29.198: for moving TS 29.198 from R99 to Rel 4 (N5-010158)	3.2.0	4.0.0
Jun 2001	CN_12	NP-010330	001	--	Corrections to OSA API Rel4 (Exception handling mechanism without ambiguity - Replace TpGeneralException and TpResultInfo with detailed exception classes which can be thrown for each method (N5-010261)	4.0.0	4.1.0
Jun 2001	CN_12	NP-010333	002	--	Introduction of TpOctet (In order to make sure that some data is sent over the "distributed wire" untouched a new data type is needed) (N5-010304)	4.0.0	4.1.0

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CHANGE REQUEST

⌘ **29.198-02 CR 005** ⌘ ev **-** ⌘ Current version: **4.1.0** ⌘

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Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Invalid parameter value exception for SLA violation		
Source:	⌘ CN5		
Work item code:	⌘ OSA1	Date:	⌘ 30/08/2001
Category:	⌘ F	Release:	⌘ REL-4
	<i>Use one of the following categories:</i> F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ Currently there is no exception when application uses value outside of the current Service Level Agreement. However, as this is within the functionality of the API it should clearly be specified in the specification.
Summary of change:	⌘ A new exception is introduced, P_UNAUTHORISED_PARAMETER_VALUE.
Consequences if not approved:	⌘ Incomplete specification.

Clauses affected:	⌘ 5.4.4, 5.8.3		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

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5.4.4 TpResultInfo

Defines further information relating to the result of the method, such as error codes.

Name	Value	Description
P_RESULT_INFO_UNDEFINED	0000h	No further information present
P_INVALID_DOMAIN_ID	0001h	Invalid client ID
P_INVALID_AUTH_CAPABILITY	0002h	Invalid authentication capability
P_INVALID_AGREEMENT_TEXT	0003h	Invalid agreement text
P_INVALID_SIGNING_ALGORITHM	0004h	Invalid signing algorithm
P_INVALID_INTERFACE_NAME	0005h	Invalid interface name
P_INVALID_SERVICE_ID	0006h	Invalid service ID
P_INVALID_EVENT_TYPE	0007h	Invalid event type
P_SERVICE_NOT_ENABLED	0008h	The service ID does not correspond to a service that has been enabled
P_INVALID_ASSIGNMENT_ID	0009h	The assignment ID is invalid
P_INVALID_PARAMETER	000Ah	The method has been called with an invalid parameter
P_INVALID_PARAMETER_VALUE	000Bh	A method parameter has an invalid value, or a value that violates the Service Level Agreement
P_PARAMETER_MISSING	000Ch	A mandatory parameter has not been specified in the method call
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_INVALID_DATE_TIME_FORMAT	0010h	Invalid date and time format provided
P_NO_CALLBACK_ADDRESS_SET	0011h	The requested method is refused because no callback address is set
P_INVALID_SIGNATURE	0012h	Invalid digital signature
P_INVALID_SERVICE_TOKEN	0013h	The service token has not been issued, or it has expired.
P_ACCESS_DENIED	0014h	The client is not currently authenticated with the framework
P_INVALID_PROPERTY	0015h	The framework does not recognise the property supplied by the client
P_METHOD_NOT_SUPPORTED	0016h	The method is not allowed or supported within the context of the current service agreement.
P_NO_ACCEPTABLE_AUTH_CAPABILITY	0017h	An authentication mechanism, which is acceptable to the framework, is not supported by the client
P_INVALID_INTERFACE_TYPE	0018h	The interface reference supplied by the client is the wrong type.
P_INVALID_ACCESS_TYPE	0019h	The framework does not support the type of access interface requested by the client.
P_SERVICE_ACCESS_DENIED	001Ah	The client application is not allowed to access this service.
P_USER_NOT_SUBSCRIBED	0030h	An application is unauthorised to access information and request services with regards to users that are not subscribed to the application.
P_APPLICATION_NOT_ACTIVATED	0031h	An application is unauthorised to access information and request services with regards to users that have deactivated that particular application.
P_USER_PRIVACY	0032h	An application is unauthorised to access information and request services with regards to users that have set their privacy flag regarding that particular service.

5.8.3 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.
P_INFORMATION_NOT_AVAILABLE	An application is unauthorised to access information and request services with regards to users that have set their privacy flag regarding that particular service.

Name	Description
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	<p>Although the sequence of method calls is allowed by the gateway, the underlying protocol can not support it.</p> <p>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>
<u>P_UNAUTHORISED_PARAMETER_VALUE</u>	<u>A method parameter value violates the Service Level Agreement</u>
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_UNKNOWN_SUBSCRIBER	An application is unauthorised to access information and request services with regards to users that are not subscribed to the application.

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CHANGE REQUEST

⌘ **29.198-02 CR 006** ⌘ ev **-** ⌘ Current version: **4.1.0** ⌘

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Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Storing eventCriteria		
Source:	⌘ CN5		
Work item code:	⌘ OSA1	Date:	⌘ 30/08/2001
Category:	⌘ F	Release:	⌘ REL-4
	<i>Use one of the following categories:</i> F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ The address data needed for addresses in eventCriteria need only to contain the address plan, address range, name and subaddress string. However, the current TpAddressRange data-type used in TpCallEventCriteria contains additional elements like Presentation and Screening. These elements are not useful to enable notifications and might lead to wrong expectations for implementors. Furthermore, in this proposal, an address plan P_ADDRESS_PLAN_ANY is introduced in the context of TpAddressRange which would allow applications to address multiple address plans (and thus networks). The latter is not supported with the current specification and is regarded as an omission.
Summary of change:	⌘ Data type TpAddressRange is changed in such a manner that only the needed elements are present. Furthermore, the value P_ADDRESS_PLAN_ANY is added to the data-type TpAddressPlan.
Consequences if not approved:	⌘ Wrong application implementation and applications always in need to be aware of the underlying networks leading to non-portability.

Clauses affected:	⌘ Chapter 5.6.1, 5.6.7 and 5.6.9.		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

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5.6 Address-related Data definitions

5.6.1 TpAddress

Defines the **Error! Reference source not found.** that specify an address.

Sequence Element Name	Sequence Element Type
Plan	<u>TpAddressPlan</u>
AddrString	<u>TpString</u>
Name	<u>TpString</u>
Presentation	<u>TpAddressPresentation</u>
Screening	<u>TpAddressScreening</u>
SubAddressString	<u>TpString</u>

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)	01234567890ABCDEF01234567890ABCDEF01234567
P_ADDRESS_PLAN_URL	A uniform resource locator as defined in IETF RFC 1738 [6]	"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 [7]	"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=n;ADMD=;PRMD=uninet;O=parlay;S=Doe;I=S;G=John"
P_ADDRESS_PLAN_SIP (note)	A valid SIP address string	sip:user@parlay.org <sip:enquiries@1.2.3.4:5060>Enquiries
P_ADDRESS_PLAN_ANY <u>Note: This is only to be used with TpAddressRange</u>	Not applicable	

Note: 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).

5.6.7 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	-1	No Address Present
P_ADDRESS_PLAN_UNDEFINED	0	Undefined
P_ADDRESS_PLAN_IP	1	IP
P_ADDRESS_PLAN_MULTICAST	2	Multicast
P_ADDRESS_PLAN_UNICAST	3	Unicast
P_ADDRESS_PLAN_E164	4	E.164
P_ADDRESS_PLAN_AESA	5	AESA
P_ADDRESS_PLAN_URL	6	URL
P_ADDRESS_PLAN_NSAP	7	NSAP
P_ADDRESS_PLAN_SMTP	8	SMTP
P_ADDRESS_PLAN_MSMAIL (see Note)	9	Microsoft Mail
P_ADDRESS_PLAN_X400	10	X.400
P_ADDRESS_PLA_SIP	11	SIP
P_ADDRESS_PLAN_ANY	12	Any address plan is deemed to match (This is only used for TpAddressRange)

NOTE: This value is not used in the scope of 3GPP.

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.

5.6.9 TpAddressRange

Defines the **Error! Reference source not found.** that specify a range of addresses.

Sequence Element Name	Sequence Element Type
<u>Plan</u>	<u>TpAddressPlan</u>
<u>AddrString</u>	<u>TpString</u>
<u>Name</u>	<u>TpString</u>
<u>SubAddressString</u>	<u>TpString</u>

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.

This type is identical to TpEventCriteriaAddress with the difference with TpAddress is that there are 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 E164 addresses, * which matches zero or more characters and ? are allowed at the beginning or end.

Some examples for E164 addresses:

- "123" matches specified 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 '\\' shall 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.