

**Source:** SA WG5

**Title:** CRs to Configuration Management; Part 3: Notification  
 Integration Reference Point; CORBA Solution Set Version 1:1  
 (32.106-3)

**Document for:** Approval

**Agenda Item:** 7.5.3

---

Doc-1st-	Doc-	Spec	CR	R	Phas	Subject	C	Versio	Versio	Workite
SP-010028	S5-010033	32.106-3	005		R99	<b>Correct the IDL syntax error in the NotificationIRPSystem module</b>	F	3.2.0	3.3.0	OAM-CM
SP-010028	S5-010034	32.106-3	006		R99	<b>Missing NV constant string for the Notify Alarm List Rebuilt reason attribute</b>	F	3.2.0	3.3.0	OAM-CM
SP-010028	S5-010035	32.106-3	007		R99	<b>Add CORBA Quality of Service parameters</b>	F	3.2.0	3.3.0	OAM-CM
SP-010028	S5-010036	32.106-3	008		R99	<b>Mismatched Notification Id type</b>	F	3.2.0	3.3.0	OAM-CM
SP-010028	S5-010037	32.106-3	009		R99	<b>Use stringified IOR instead of type Object for manager_reference</b>	F	3.2.0	3.3.0	OAM-CM
SP-010028	S5-010038	32.106-3	010		R99	<b>Mismatched SubscriptionId types</b>	F	3.2.0	3.3.0	OAM-CM
SP-010028	S5-010039	32.106-3	011		R99	<b>Remove CosNotifyComm.idl not used in the module NotificationIRPSystem</b>	F	3.2.0	3.3.0	OAM-CM

CR-Form-v3

## CHANGE REQUEST

⌘ **32.106-3 CR 005** ⌘ rev **-** ⌘ Current version: **3.2.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

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

<b>Title:</b>	⌘ Correct the IDL syntax error in the <b>NotificationIRPSystem</b> module		
<b>Source:</b>	⌘ SA5		
<b>Work item code:</b>	⌘ OAM-CM	<b>Date:</b>	⌘ 02/03/2001
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ <b>R99</b>
	Use <u>one</u> of the following categories: <b>F</b> (essential correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (Addition of feature), <b>C</b> (Functional modification of feature) <b>D</b> (Editorial modification)		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

<b>Reason for change:</b>	⌘ Correct the IDL syntax error in the <b>NotificationIRPSystem</b> module.
<b>Summary of change:</b>	⌘ Remove erroneous semicolon in the IDL module.
<b>Consequences if not approved:</b>	⌘ Each application will need to edit the <b>NotificationIRPSystem.idl</b> file, which is against the rules established in 3GPP TS 32.106-6 V3.0.0.

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

---

## Annex A (normative): Notification IRP CORBA IDL

...

...

```
/* ## Operation: get_notification_IRP_version
*/
CommonIRPConstDefs::VersionNumberSet get_notification_IRP_version ()
raises (GetNotificationIRPVersion);
———;
```

CR-Form-v3

## CHANGE REQUEST

⌘ **32.106-3 CR 006** ⌘ rev **-** ⌘ Current version: **3.2.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

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

<b>Title:</b>	⌘ Missing <b>NV</b> constant string for the Notify Alarm List Rebuilt <b>reason</b> attribute		
<b>Source:</b>	⌘ SA5		
<b>Work item code:</b>	⌘ OAM-CM	<b>Date:</b>	⌘ 02/03/2001
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ <b>R99</b>
	<p>Use <u>one</u> of the following categories:</p> <p><b>F</b> (essential correction)  <b>A</b> (corresponds to a correction in an earlier release)  <b>B</b> (Addition of feature),  <b>C</b> (Functional modification of feature)  <b>D</b> (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p>Use <u>one</u> of the following releases:</p> <p><b>2</b> (GSM Phase 2)  <b>R96</b> (Release 1996)  <b>R97</b> (Release 1997)  <b>R98</b> (Release 1998)  <b>R99</b> (Release 1999)  <b>REL-4</b> (Release 4)  <b>REL-5</b> (Release 5)</p>

<b>Reason for change:</b>	⌘ The <b>reason</b> attribute is a mandatory attribute of the Notify Alarm List Rebuilt notification in 32.111-3 V3.3.0. However, it is not described what name should be used when inserting the <b>reason</b> attribute into a Structured Event.
<b>Summary of change:</b>	⌘ An <b>NV_REASON</b> string constant for the name of the Name Value pair of the Structured Event is created.
<b>Consequences if not approved:</b>	⌘ Different IRPAgent vendors will use different rules for inserting the <b>reason</b> attribute into notifications.

<b>Clauses affected:</b>	⌘ Annex A		
<b>Other specs affected:</b>	⌘ <input checked="" type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	32.111-3 V3.3.0
<b>Other comments:</b>	⌘ 32.111-3 needs to define how <b>NV_REASON</b> is used in the Structured Event.		

---

## Annex A (normative): Notification IRP CORBA IDL

```
const string NV_NOTIFICATION_ID = "a";
const string NV_CORRELATED_NOTIFICATIONS = "b";
const string NV_EVENT_TIME = "c";
const string NV_SYSTEM_DN = "d";
const string NV_MANAGED_OBJECT_CLASS = "e";
const string NV_MANAGED_OBJECT_INSTANCE = "f";
const string NV_PROBABLE_CAUSE = "g";
const string NV_PERCEIVED_SEVERITY = "h";
const string NV_SPECIFIC_PROBLEM = "i";
const string NV_ADDITIONAL_TEXT = "j";
const string NV_ALARM_ID = "k";
const string NV_ACK_USER_ID = "l";
const string NV_ACK_TIME = "m";
const string NV_ACK_SYSTEM_ID = "n";
const string NV_ACK_STATE = "o";
const string NV_BACKED_UP_STATUS = "p";
const string NV_BACK_UP_OBJECT = "q";
const string NV_THRESHOLD_INFO = "r";
const string NV_TREND_INDICATION = "s";
const string NV_STATE_CHANGE_DEFINITION = "t";
const string NV_MONITORED_ATTRIBUTES = "u";
const string NV_PROPOSED_REPAIR_ACTIONS = "v";
const string NV_REASON = "w";
```

```
/*
This indicates if the subscription is active (not suspended) or inactive.
*/
enum SubscriptionState {Inactive, Active, DontKnow};
```

```
};
```

```
#endif
```

CR-Form-v3

## CHANGE REQUEST

⌘ **32.106-3 CR 007** ⌘ rev **-** ⌘ Current version: **3.2.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

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

<b>Title:</b>	⌘ <b>Add CORBA Quality of Service parameters</b>		
<b>Source:</b>	⌘ SA5		
<b>Work item code:</b>	⌘ OAM-CM	<b>Date:</b>	⌘ 02/03/2001
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ <b>R99</b>
	Use <u>one</u> of the following categories: <b>F</b> (essential correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (Addition of feature), <b>C</b> (Functional modification of feature) <b>D</b> (Editorial modification)		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

<b>Reason for change:</b>	⌘ OMG Notification Service allows the ordering of notifications to be in other order than First-In, First-Out. First-In, First-Out ordering is required in TMN-based systems. This CR clarifies QoS notification ordering from a CORBA perspective.
<b>Summary of change:</b>	⌘ Add a new subclause (7.4) describing the notification ordering to be used when the OMG Notification Service is used and when it is not used.
<b>Consequences if not approved:</b>	⌘ Implementations of notification ordering other than First-In, First-Out may occur. As an example, a clearing alarm could arrive before the original alarm. This could result in unexpected behaviour for an IRPManager.

<b>Clauses affected:</b>	⌘ 3.2, 7		
<b>Other specs affected:</b>	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
<b>Other comments:</b>	⌘		

## 3.2 Abbreviations

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

CM	Configuration Management
CORBA	Common Object Request Broker Architecture (OMG)
EC	Event channel (OMG)
IDL	Interface Definition Language (OMG)
IS	Information Service
NC	Notification Channel (OMG)
NE	Network Element
NV	Name and Value pair
EM	Element Manager
OMG	Object Management Group
<u>QoS</u>	<u>Quality of Service</u>
SS	Solution Set
UML	Unified Modelling Language (OMG)

---

## 7 IRPAgent's Behaviour

This clause describes some IRPAgent's behaviour not captured by IDL.

### 7.1 Subscription

### 7.2 IRPAgent supports multiple categories of Notifications

### 7.3 IRPAgent's integrity risk of attach\_push\_b Method

### 7.4 Quality of Service Parameters

The OMG Notification Service [2] supports a variety of Quality of Service (QoS) properties, such as reliability and priority, that may be expressed to indicate the delivery characteristics of notifications. While many of these QoS parameters need to be based on Service Level Agreements, a number of them need to be specified as required. The following OMG Notification Service QoS parameter settings are required:

1. The order policy ~~must~~ shall be set to FifoOrder (First-in, First-out) [2].
2. The message priority ~~must~~ shall be set to 0, i.e., no priority [2].
3. The Start Time Supported ~~must~~ shall be set to false, i.e., do not use Start Time [2].
4. The Stop Time Supported ~~must~~ shall be set to false, i.e., do not use Stop Time [2].

When the OMG Notification Service is used, the IRPAgent has the responsibility of setting the OMG Notification Service Quality of Service parameters.

When the OMG Notification Service is not used, the IRPAgent has the responsibility to provide First-in, First-out notification ordering and to not provide priority to one Event Type and/or Extended Event Type over others.

CR-Form-v3

## CHANGE REQUEST

⌘ **32.106-3 CR 008** ⌘ rev **-** ⌘ Current version: **3.2.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

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

<b>Title:</b>	⌘ Mismatched <b>Notification Id</b> type		
<b>Source:</b>	⌘ SA5		
<b>Work item code:</b>	⌘ OAM-CM	<b>Date:</b>	⌘ 02/03/2001
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ <b>R99</b>
	Use <u>one</u> of the following categories: <b>F</b> (essential correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (Addition of feature), <b>C</b> (Functional modification of feature) <b>D</b> (Editorial modification)		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

<b>Reason for change:</b>	⌘ <b>Notification Id</b> is an attribute used in many of the 3GPP SA5 specifications. However, the same attribute is set to different types. In 32.106-3 in <b>Correlated Notifications</b> definition and 32.111-3 V3.3.0 Table 11, it is declared as type <b>long</b> . In 32.106-3 Table 13, is it declared as type <b>unsigned long</b> . This CR proposes that all uses of <b>Notification Id</b> be of the same type.
<b>Summary of change:</b>	⌘ Change use of 32.106-3 Table 13 use of <b>Notification Id</b> to be of type <b>long</b> .
<b>Consequences if not approved:</b>	⌘ Application developers will need to switch between the different types.

<b>Clauses affected:</b>	⌘ 6 Table 13		
<b>Other specs affected:</b>	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
<b>Other comments:</b>	⌘		



## 6 Use of OMG Notification StructuredEvent

Table 13 shows the OMG Structured Event attributes (middle column) that are used to carry the common notification attributes defined in Notification IRP: IS (3GPP TS 32.106-2 [5]).

**Table 13: Attributes of StructuredEvent**

Common attributes defined in Notification IRP: IS (3GPP TS 32.106-2 [5])	Attribute defined by OMG Structured Event	Comment
There is no corresponding SS attribute.	domain_name	<p>It indicates that the StructuredEvent, carried in the Notification, is defined by a specific 3GPP IRP such as Alarm IRP, as opposed to OMG specified Telecommunication, healthcare, utility, finance, etc. It indicates the CORBA SS version number as well.</p> <p>It is a string. Legal values are defined in module.</p> <p>For Alarm IRP version 1:1, the value is ALARM_IRP_VERSION_1_1.</p>
eventType	type_name	<p>It indicates event types of this notification. The semantics of the event type is defined by ITU-T TMN Recommendations. Each IRP, such as Alarm IRP IS version 1, shall identify the ITU-T defined event types for their use. Each such IRP document shall define the values of the identified event Types as well.</p> <p>Dependent on the notification category, possible legal values are:</p> <p>COMMUNICATIONS_ALARM (clause 8.1.1 of ITU-T Recommendation X.736 [8]),            QUALITY_OF_SERVICE_ALARM (clause 8.1.1 of ITU-T Recommendation X.736 [8]),            PROCESSING_ERROR_ALARM (clause 8.1.1 of ITU-T Recommendation X.736 [8]),            EQUIPMENT_ALARM (clause 8.1.1 of ITU-T Recommendation X.736 [8]),            ENVIRONMENTAL_ALARM (clause 8.1.1 of ITU-T Recommendation X.736 [8]),            PHYSICAL_VIOLATION (ITU-T Recommendation X.736 [1]),            INTEGRITY_VIOLATION (ITU-T Recommendation X.736 [1]),            SECURITY_VIOLATION (ITU-T Recommendation X.736 [1]),            TIME_DOMAIN_VIOLATION (ITU-T Recommendation X.736 [1]),            OPERATIONAL_VIOLATION (ITU-T Recommendation X.736 [1]).</p> <p>The bracketed number of each type indicates the reference where the semantics of the type is specified.</p> <p>It is a string. See each individual CORBA SS IDL module for each IRP using the Notification IRP, for legal values used by that IRP version.</p> <p>Since each IRP except Notification IRP specifies its own set of event type, the values specified by each IRP are only unique within one IRP. For uniqueness among all IRPs' specifications, the values of event type shall be coupled with the notification category, the value carried in domain_name of the same notification.</p>
extended EventType	event_name	<p>The legal values carried in this attribute are specified by the IRP using the notification. For example, Alarm IRP: CORBA SS (3GPP TS 32.111-3 [7]) defines and uses the following values:</p> <p>NOTIFY_FM_NEW_ALARM,            NOTIFY_FM_CHANGED_ALARM,            NOTIFY_FM_ACK_STATE_CHANGED,            NOTIFY_FM_CLEARED_ALARM and            NOTIFY_FM_ALARM_LIST_REBUILT.</p> <p>It is a string. See each individual CORBA SS IDL module for each IRP using the Notification IRP, for legal values used by that IRP version.</p> <p>Since each IRP except Notification IRP specifies its own set of extended event</p>

		type, the values specified by each IRP are only unique within one IRP. For uniqueness among all IRPs' specification, the values of extended event type shall be coupled with the notification category, the value carried in domain_name of the same notification.
There is no corresponding SS attribute.	variable Header	
managed Object Class, managed Object Instance	One NV pair of filterable_body_fields (name-value)	Name of NV pair is a string, NV_MANAGED_OBJECT_INSTANCE. Value of NV pair is a string. Syntax and semantics of this string conform to the Managed Object string representation specified in (3GPP TS 32.106-8 [4]). Note that two SS attributes are carried in this one NV pair since the string representation specified in 3GPP TS 32.106-8 [4] can convey the semantics of managedObjectClass and managedObjectInstance in one string.
notification Id	One NV pair of filterable_body_fields	Name of NV pair is a string, NV_NOTIFICATION_ID. Value of NV pair is an <del>unsigned</del> long.
eventTime	One NV pair of filterable_body_fields	Name of NV pair is a string, NV_EVENT_TIME. Value of NV pair is an IRPTime.
systemDN	One NV pair of filterable_body_fields	Name of NV pair is a string, NV_SYSTEM_DN. Value of NV pair is a string. Syntax and semantics of this string conforms to the Managed Object string representation specified in 3GPP TS 32.106-8 [4].
There is no corresponding SS attribute.	remaining_Body	

CR-Form-v3

## CHANGE REQUEST

⌘ **32.106-3 CR 009** ⌘ rev **-** ⌘ Current version: **3.2.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

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

<b>Title:</b>	⌘ Use stringified IOR instead of type Object for manager_reference		
<b>Source:</b>	⌘ SA5		
<b>Work item code:</b>	⌘ OAM-CM	<b>Date:</b>	⌘ 02/03/2001
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ <b>R99</b>
	Use <u>one</u> of the following categories: <b>F</b> (essential correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (Addition of feature), <b>C</b> (Functional modification of feature) <b>D</b> (Editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		Use <u>one</u> of the following releases: <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>REL-4</b> (Release 4) <b>REL-5</b> (Release 5)

<b>Reason for change:</b>	⌘ If IRPManager uses IOR of type Object in attach and detach, the IRPAgent may not be able to determine if they are referring to the same IRPManager. If IRPManager uses stringified IOR in attach and detach, the IRPAgent can make the determination. (IOR = Interoperable Object Reference)
<b>Summary of change:</b>	⌘ Change all type references of manager_reference from Object to string. Add notes to attach_push, attach_push_b and attach_pull_b methods describing how to generate the parameters.
<b>Consequences if not approved:</b>	⌘ attach_push, attach_push_b and attach_pull, underlying methods in the Notification IRP, would not be able to function correctly.

<b>Clauses affected:</b>	⌘ 5.2 Tables 2, 3, 4, 5 and 8, Annex A	
<b>Other specs affected:</b>	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘
<b>Other comments:</b>	⌘ This CR should be implemented before the CR in S5-010033rev2.	

## 3.2 Abbreviations

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

CM	Configuration Management
CORBA	Common Object Request Broker Architecture (OMG)
EC	Event channel (OMG)
IDL	Interface Definition Language (OMG)
<u>IOR</u>	<u>Interoperable Object Reference</u>
IS	Information Service
NC	Notification Channel (OMG)
NE	Network Element
NV	Name and Value pair
EM	Element Manager
OMG	Object Management Group
SS	Solution Set
UML	Unified Modelling Language (OMG)

.....

## 5.2 Operation parameter mapping

3GPP TS 32.106-2 [5] defines semantics of parameters carried in operations across the Notification IRP. Table 2 through table 12 indicate the mapping of these parameters, as per operation, to their equivalents defined in this SS.

**Table 2: Mapping from IS subscribe parameters to SS attach\_push equivalents**

IS Operation parameter	SS Method parameter	Qualifier
managerReference	<del>Object</del> string manager_reference (see NOTE 1)	M
timeTick	long time_tick	O
notificationCategories	NotificationIRPConstDefs::NotificationCategorySet notification_category_set	O
filter	string filter (see NOTE 2)	O
subscriptionId	Return value of type SubscriptionId	M
status	Attach, ParameterNotSupported, InvalidParameter, AlreadySubscribed, AtLeastOneNotificationCategoryNotSupported	M
NOTE 1: —IRPManager creates a CosNotifyComm::SequencePushConsumer object and invokes CORBA::ORB::object_to_string to obtain the stringified IOR, say s1. IRPManager stores the s1. IRPManager sends s1 as input parameter of attach_push to IRPAgent. IRPAgent receives s1, performs CORBA::ORB::string_to_object to obtain the IRPManager's IOR and uses it for its future methods. IRPAgent also stores the s1 for future comparisons. IRPManager later calls detach with s1. IRPAgent receives the stringified IOR s1, compares it with those stored stringified IORs (e.g., s1), finds a match, and performs the detach process. IRPAgent pushes sequence of Structured Events towards IRPManager via the CosNotifyComm::SequencePushConsumer object push_structured_events method, depending on the supplied notification categories and filter.		
NOTE 2: The grammar of the filter string is extended_TCL defined by OMG Notification Service (OMG TC Document telecom [2]). This grammar shall be the only one used for Alarm IRP: CORBA SS.		

**Table 3: Mapping from IS subscribe parameters to SS attach\_push\_b equivalents**

IS Operation parameter	SS Method parameter	Qualifier
managerReference	<del>Object</del> string manager_reference (see NOTE 1)	M
timeTick	long time_tick	O
notificationCategories	NotificationIRPConstDefs::NotificationCategorySet notification_category_set	O
filter	string filter (see NOTE 2)	O
subscriptionId	Return value of type SubscriptionId	M
Not specified in IS	CosNotifyChannelAdmin::SequenceProxyPushSupplier system_reference (see NOTE 3)	M

status	Attach, OperationNotSupported, ParameterNotSupported, InvalidParameter, AlreadySubscribed, AtLeastOneNotificationCategoryNotSupported	M
<p><b>NOTE 1:</b> IRPManager creates a <code>CosNotifyComm::SequencePushConsumer</code> object and invokes <code>CORBA::ORB::object_to_string</code> to obtain the stringified IOR, say <code>s1</code>. IRPManager stores the <code>s1</code>. IRPManager sends <code>s1</code> as input parameter of <code>attach_push_b</code> to IRPAgent. IRPAgent receives <code>s1</code> and stores the <code>s1</code> for future comparisons. IRPManager later calls <code>detach</code> with <code>s1</code>. IRPAgent receives the stringified IOR <code>s1</code>, compares it with those stored stringified IORs (e.g., <code>s1</code>), finds a match, and performs the <u>detach process</u>.</p> <p><b>NOTE 2:</b> The grammar of the filter string is extended TCL defined by OMG Notification Service (OMG TC Document telecom [2]). This grammar shall be the only one used for Alarm IRP: CORBA SS</p> <p><b>NOTE 3:</b> IRPAgent provides this reference to which IRPManager can invoke methods to manage the subscription. Valid methods are not defined in this IRP. OMG CORBA Notification Service defines these methods. Read interface <code>CosNotifyChannelAdmin::SequenceProxyPushSupplier</code> and <code>CosNotifyComm::SequencePushConsumerSequencePushSupplierProxySupplier</code>, <code>CosNotifyComm::SequencePushSupplier()</code>. IRPManager is expected to invoke <code>connect_sequence_push_consumer()</code> method of this interface to connect its own <code>cosNotifyComm::SequencePushConsumer</code> with this reference. After successful connection, IRPAgent pushes sequence of Structured Events towards IRPManager.</p>		

**Table 4: Mapping from IS subscribe parameters to SS attach\_pull equivalents**

IS Operation parameter	SS Method parameter	Qualifier
managerReference	<del>Object_string</del> manager_reference (see NOTE 1)	M
timeTick	long time_tick	O
notificationCategories	NotificationIRPConstDefs::NotificationCategorySet notification_category_set	O
filter	string filter (see NOTE 2)	O
subscriptionId	Return value of type SubscriptionId	M
Not specified in IS.	CosNotifyChannelAdmin::SequenceProxyPullSupplier system_reference (see NOTE 3)	M
status	Attach, OperationNotSupported, ParameterNotSupported, InvalidParameter, AlreadySubscribed, AtLeastOneNotificationCategoryNotSupported	M
<p><b>NOTE 1:</b> IRPManager creates a <code>CosNotifyComm::SequencePullConsumer</code> object and invokes <code>CORBA::ORB::object_to_string</code> to obtain the stringified IOR, say <code>s1</code>. IRPManager stores the <code>s1</code>. IRPManager sends <code>s1</code> as input parameter of <code>attach_pull</code> to IRPAgent. IRPAgent receives <code>s1</code> and stores the <code>s1</code> for future comparisons. IRPManager later calls <code>detach</code> with <code>s1</code>. IRPAgent receives the stringified IOR <code>s1</code>, compares it with those stored stringified IORs (e.g., <code>s1</code>), finds a match, and performs the <u>detach process</u>.</p> <p><b>NOTE 2:</b> The grammar of the filter string is extended TCL defined by OMG Notification Service (OMG TC Document telecom [2]). This grammar shall be the only one used for Alarm IRP: CORBA SS.</p> <p><b>NOTE 3:</b> IRPAgent provides this reference to which IRPManager can invoke methods to manage the subscription. Valid methods are not defined in this IRP. OMG CORBA Notification Service defines these methods. Read interface <code>CosNotifyChannelAdmin::SequenceProxyPullSupplier</code> and <code>CosNotifyComm::SequencePullConsumer</code>. IRPManager is expected to invoke <code>connect_sequence_pull_consumer</code> method of this interface to connect its own <code>CosNotifyComm::SequencePullConsumer</code> with this reference. After successful connection, IRPManager pulls sequence of Structured Events from IRPAgent.</p>		

**Table 5: Mapping from IS unsubscribe parameters to SS equivalents**

IS Operation parameter	SS Method parameter	Qualifier
managerReference	<del>Object_string</del> manager_reference	M
subscriptionId	string subscription_id	O
status	Detach, InvalidParameter	M

**Table 8: Mapping from IS getSubscriptionIds parameters to SS equivalents**

IS Operation parameter	SS Method parameter	Qualifier
managerReference	<del>Object_string</del> manager_reference	M
subscriptionIdList	Return value of type NotificationIRPConstDefs::SubscriptionIdSet	M

status	GetSubscriptionIds, OperationNotSupported, InvalidParameter	M
--------	---	---

## Annex A (normative): Notification IRP CORBA IDL

```

interface NotificationIRPOperations {

    /* ## Operation: attach_push
    */
    NotificationIRPConstDefs::SubscriptionId attach_push (
        in Objectstring manager_reference,
        in long time_tick,
        in NotificationIRPConstDefs::NotificationCategorySet
            notification_category_set,
        in string filter
    )
    raises (Attach, ParameterNotSupported, InvalidParameter, AlreadySubscribed,
        AtLeastOneNotificationCategoryNotSupported);

    /* ## Operation: attach_push_b
    */
    NotificationIRPConstDefs::SubscriptionId attach_push_b (
        in stringObject manager_reference,
        in long time_tick,
        in NotificationIRPConstDefs::NotificationCategorySet
            notification_category_set,
        in string filter,
        out CosNotifyChannelAdmin::SequenceProxyPushSupplier system_reference
    )
    raises
    (Attach, OperationNotSupported, ParameterNotSupported, InvalidParameter, AlreadySubs
        cribed, AtLeastOneNotificationCategoryNotSupported);

    /* ## Operation: attach_pull
    */
    NotificationIRPConstDefs::SubscriptionId attach_pull (
        in Objectstring manager_reference,
        in long time_tick,
        in NotificationIRPConstDefs::NotificationCategorySet
            notification_category_set,
        in string filter,
        out CosNotifyChannelAdmin::SequenceProxyPullSupplier system_reference
    )
    raises (Attach, OperationNotSupported, ParameterNotSupported,
        InvalidParameter, AlreadySubscribed,
        AtLeastOneNotificationCategoryNotSupported);

    /* ## Operation: detach
    */
    void detach (
        in Objectstring manager_reference,
        in string subscription_id
    )
    raises (DetachException, InvalidParameter);

    /* ## Operation: get_notification_IRP_version
    */
    CommonIRPConstDefs::VersionNumberSet get_notification_IRP_version ()
    raises (GetNotificationIRPVersion);
    ;

    /* ## Operation: get_subscription_status

```

```
*/
NotificationIRPConstDefs::NotificationCategorySet get_subscription_status (
    in string subscription_id,
    out string filter_in_effect,
    out NotificationIRPConstDefs::SubscriptionState subscription_state,
    out long time_tick
)
raises (GetSubscriptionStatus,OperationNotSupported,InvalidParameter);

/* ## Operation: get_subscription_ids
*/
NotificationIRPConstDefs::SubscriptionIdSet get_subscription_ids (
    in Objectstring manager_reference
)
raises (GetSubscriptionIds,OperationNotSupported,InvalidParameter);

/* ## Operation: change_subscription_filter
*/
void change_subscription_filter (
    in string subscription_id,
    in string filter
)
raises (ChangeSubscriptionFilter,OperationNotSupported,InvalidParameter);

/* ## Operation: get_notification_categories
*/
NotificationIRPConstDefs::NotificationCategorySet
    get_notification_categories (
        out NotificationIRPConstDefs::EventTypesSet event_type_list,
        out NotificationIRPConstDefs::ExtendedEventTypesSet
            extended_event_type_list
    )
raises (GetNotificationCategories,OperationNotSupported);
};

};

#endif
```



CR-Form-v3

## CHANGE REQUEST

⌘ **32.106-3 CR 010** ⌘ rev **-** ⌘ Current version: **3.2.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

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

<b>Title:</b>	⌘ Mismatched <code>subscriptionId</code> types		
<b>Source:</b>	⌘ SA5		
<b>Work item code:</b>	⌘ OAM-CM	<b>Date:</b>	⌘ 02/03/2001
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ <b>R99</b>
	<i>Use one of the following categories:</i> <b>F</b> (essential correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (Addition of feature), <b>C</b> (Functional modification of feature) <b>D</b> (Editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		<i>Use one of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>REL-4</b> (Release 4) <b>REL-5</b> (Release 5)

<b>Reason for change:</b>	⌘ Subscription Id is an attribute used in 32.106-3. However, the same attribute is set to different types. In <code>attach_push</code> , <code>attach_push_b</code> and <code>attach_pull</code> , it is declared as type <code>NotificationIRPConstDefs::SubscriptionId</code> . In <code>detach</code> , <code>get_subscription_status</code> and <code>change_subscription_filter</code> , it is declared as type <code>string</code> . This CR proposes that all uses of <code>Subscription Id</code> be of the same type.
<b>Summary of change:</b>	⌘ Change <code>detach</code> , <code>get_subscription_status</code> and <code>change_subscription_filter</code> use of <code>Subscription Id</code> to be of type <code>NotificationIRPConstDefs::SubscriptionId</code> .
<b>Consequences if not approved:</b>	⌘ Application developers will need to switch between the different types.

<b>Clauses affected:</b>	⌘ 5, Annex A	
<b>Other specs affected:</b>	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘
<b>Other comments:</b>	⌘ This CR should be implemented before the CR in S5-010033rev2.	

## 5 Mapping

### 5.2 Operation parameter mapping

3GPP TS 32.106-2 [5] defines semantics of parameters carried in operations across the Notification IRP. Table 2 through table 12 indicate the mapping of these parameters, as per operation, to their equivalents defined in this SS.

**Table 2: Mapping from IS subscribe parameters to SS attach\_push equivalents**

IS Operation parameter	SS Method parameter	Qualifier
managerReference	Object manager_reference	M
timeTick	long time_tick	O
notificationCategories	NotificationIRPConstDefs::NotificationCategorySet notification_category_set	O
filter	string filter (See NOTE)	O
subscriptionId	Return value of type NotificationIRPConstDefs::SubscriptionId	M
status	Attach, ParameterNotSupported, InvalidParameter, AlreadySubscribed, AtLeastOneNotificationCategoryNotSupported	M
NOTE:	The grammar of the filter string is extended_TCL defined by OMG Notification Service (OMG TC Document telecom [2]). This grammar shall be the only one used for Alarm IRP: CORBA SS.	

**Table 3: Mapping from IS subscribe parameters to SS attach\_push\_b equivalents**

IS Operation parameter	SS Method parameter	Qualifier
managerReference	Object manager_reference	M
timeTick	long time_tick	O
notificationCategories	NotificationIRPConstDefs::NotificationCategorySet notification_category_set	O
filter	string filter	O
subscriptionId	Return value of type NotificationIRPConstDefs::SubscriptionId SubscriptionId	M
Not specified in IS	CosNotifyChannelAdmin::SequenceProxyPushSupplier system_reference (See NOTE)	M
status	Attach, OperationNotSupported, ParameterNotSupported, InvalidParameter, AlreadySubscribed, AtLeastOneNotificationCategoryNotSupported	M
NOTE:	IRPAgent provides this reference to which IRPManager can invoke methods to manage the subscription. Valid methods are not defined in this IRP. OMG CORBA Notification Service defines these methods. Read interface SequencePushSupplier:proxySupplier, CosNotifyComm::SequencePushSupplier{}. IRPManager is expected to invoke connect_sequence_push_consumer() of this interface to connect its own cosNotifyComm::sequencePushConsumer with this reference. After successful connection, IRPAgent pushes sequence of Structured Events towards IRPManager.	

**Table 4: Mapping from IS subscribe parameters to SS attach\_pull equivalents**

IS Operation parameter	SS Method parameter	Qualifier
managerReference	Object manager_reference	M
timeTick	long time_tick	O
notificationCategories	NotificationIRPConstDefs::NotificationCategorySet notification_category_set	O
filter	string filter	O
subscriptionId	Return value of type NotificationIRPConstDefs::SubscriptionId	M

	SubscriptionId	
Not specified in IS.	CosNotifyChannelAdmin::SequenceProxyPullSupplier system_reference	M
status	Attach, OperationNotSupported, ParameterNotSupported, InvalidParameter, AlreadySubscribed, AtLeastOneNotificationCategoryNotSupported	M

Table 5: Mapping from IS unsubscribe parameters to SS equivalents

IS Operation parameter	SS Method parameter	Qualifier
managerReference	Object manager_reference	M
subscriptionId	NotificationIRPConstDefs::SubscriptionIdstring subscription_id	O
status	Detach, InvalidParameter	M

Table 7: Mapping from IS getSubscriptionStatus parameters to SS equivalents

IS Operation parameter	SS Method parameter	Qualifier
subscriptionId	NotificationIRPConstDefs::SubscriptionIdstring subscription_id	M
notification CategoryList	Return value of type NotificationIRPConstDefs::NotificationCategorySet	M
filterInEffect	string filter_in_effect	O
subscription State	NotificationIRPConstDef::SubscriptionState subscription_state	O
timeTick	long time_tick	O
status	GetSubscriptionStatus, OperationNotSupported, InvalidP arameter	M

Table 9: Mapping from IS changeSubscriptionFilter parameters to SS equivalents

IS Operation parameter	SS Method parameter	Qualifier
subscriptionId	NotificationIRPConstDefs::SubscriptionIdstring subscription_id	M
filter	string filter	M
status	ChangeSubscriptionFilter, OperationNotSupported, Inval idParameter	M

## Annex A (normative): Notification IRP CORBA IDL

```

..
..
/* ## Operation: detach
*/
void detach (
    in Object manager_reference,
    in NotificationIRPConstDefs::SubscriptionIdstring subscription_id
)
raises (DetachException,InvalidParameter);

/* ## Operation: get_notification_IRP_version
*/
CommonIRPConstDefs::VersionNumberSet get_notification_IRP_version ()
raises (GetNotificationIRPVersion);
;

/* ## Operation: get_subscription_status
*/
NotificationIRPConstDefs::NotificationCategorySet get_subscription_status (
    in NotificationIRPConstDefs::SubscriptionIdstring subscription_id,
    out string filter_in_effect,
    out NotificationIRPConstDefs::SubscriptionState subscription_state,
    out long time_tick
)
raises (GetSubscriptionStatus,OperationNotSupported,InvalidParameter);

/* ## Operation: get_subscription_ids
*/
NotificationIRPConstDefs::SubscriptionIdSet get_subscription_ids (
    in Object manager_reference
)
raises (GetSubscriptionIds,OperationNotSupported,InvalidParameter);

/* ## Operation: change_subscription_filter
*/
void change_subscription_filter (
    in NotificationIRPConstDefs::SubscriptionIdstring subscription_id,
    in string filter
)
raises (ChangeSubscriptionFilter,OperationNotSupported,InvalidParameter);

/* ## Operation: get_notification_categories
*/
NotificationIRPConstDefs::NotificationCategorySet
    get_notification_categories (
        out NotificationIRPConstDefs::EventTypesSet event_type_list,
        out NotificationIRPConstDefs::ExtendedEventTypesSet
            extended_event_type_list
    )
raises (GetNotificationCategories,OperationNotSupported);
};

};

#endif

```

CR-Form-v3

## CHANGE REQUEST

⌘ **32.106-3 CR 011** ⌘ rev **-** ⌘ Current version: **3.2.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

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

<b>Title:</b>	⌘ Remove <b>CosNotifyComm.idl</b> not used in the module NotificationIRPSysm		
<b>Source:</b>	⌘ SA5		
<b>Work item code:</b>	⌘ OAM-CM	<b>Date:</b>	⌘ 02/03/2001
<b>Category:</b>	⌘ <b>F</b> ⌘ <b>D</b>	<b>Release:</b>	⌘ <b>R99</b>
Use <u>one</u> of the following categories: <b>F</b> (essential correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (Addition of feature), <b>C</b> (Functional modification of feature) <b>D</b> (Editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		Use <u>one</u> of the following releases: <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>REL-4</b> (Release 4) <b>REL-5</b> (Release 5)	

<b>Reason for change:</b>	⌘ The #include "CosNotifyComm.idl" in the NotificationIRPSysm module is not used in the module.
<b>Summary of change:</b>	⌘ Remove #include "CosNotifyComm.idl"
<b>Consequences if not approved:</b>	⌘ Mostly, confusion for why it was included. Many IDL compilers will take longer to compile.

<b>Clauses affected:</b>	⌘ Annex A
<b>Other specs affected:</b>	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications
<b>Other comments:</b>	⌘ This CR should be implemented before the CR in S5-010033rev2.

---

## Annex A (normative): Notification IRP CORBA IDL

```
/* ## Module: NotificationIRPSystem
   This module implements capabilities of IRPAgent specified in Notification
   IRP: Information Service version 1 and its equivalents in Notification
   IRP: CORBA Solution Set version 1:1.
   =====
*/

#ifndef NotificationIRPSystem_idl
#define NotificationIRPSystem_idl

#include "CosNotifyComm.idl"
#include "CosNotifyChannelAdmin.idl"
#include "NotificationIRPConstDefs.idl"
#include "CommonIRPConstDefs.idl"
#pragma prefix "3gppsa5.org"
```