

**Source:** SA WG5 (Telecom Management)

**Title:** CRs to Telecommunications Management; Fault Management;  
Part 3: Alarm Integration Reference Point: CORBA solution set  
version 1:1 (32.111-3)

**Document for:** Approval

**Agenda Item:** 7.5.3

Doc-1st-Level	Doc-2nd-Level	Spec	CR	Rev	Phase	Cat	Subject	Version-Current	Version-New
SP-000439	S5-000401	32.111-3	001		R99		Update TS 32.111-3 Iterator	3.1.0	3.2.0
SP-000439	S5-000402	32.111-3	002		R99		Clarification On Filterable Body Fields	3.1.0	3.2.0
SP-000439	S5-000403	32.111-3	003		R99		Correct push_structured_event of push_structured_events	3.1.0	3.2.0
SP-000439	S5-000408	32.111-3	004		R99		Remove the use of interface to encapsulate const strings	3.1.0	3.2.0

<b>CHANGE REQUEST</b>		Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.
<b>32-111-3</b>	<b>CR</b>	<b>001</b>
GSM (AA.BB) or 3G (AA.BBB) specification number ↑		↑ CR number as allocated by MCC support team
Current Version: <b>V3.1.0</b>		
For submission to: <b>SA#9</b>	for approval <input checked="" type="checkbox"/>	strategic <input type="checkbox"/> (for SMG use only)
list expected approval meeting # here ↑	for information <input type="checkbox"/>	non-strategic <input type="checkbox"/>

Form: CR cover sheet, version 2 for 3GPP and SMG      The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

**Proposed change affects:**      (U)SIM       ME       UTRAN / Radio       Core Network   
*(at least one should be marked with an X)*

**Source:**      **SA5#14 (Fault Management)**      **Date:**      14 September 2000

**Subject:**      Update TS 32.111-3 Iterator

**Work item:**

<b>Category:</b>	F Correction <input type="checkbox"/> A Corresponds to a correction in an earlier release <input type="checkbox"/> B Addition of feature <input type="checkbox"/> C Functional modification of feature <input type="checkbox"/> D Editorial modification <input checked="" type="checkbox"/>	<b>Release:</b>	Phase 2 <input type="checkbox"/> Release 96 <input type="checkbox"/> Release 97 <input type="checkbox"/> Release 98 <input type="checkbox"/> Release 99 <input checked="" type="checkbox"/> Release 00 <input type="checkbox"/>
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(only one category shall be marked with an X)

**Reason for change:**      This contribution proposes that the iterators specified in TS 32.111-3 and TS 32.106-6 be changed to provide matched capabilities

**Clauses affected:**      Annex A

<b>Other specs affected:</b>	Other 3G core specifications <input type="checkbox"/> → List of CRs: Other GSM core specifications <input type="checkbox"/> → List of CRs: MS test specifications <input type="checkbox"/> → List of CRs: BSS test specifications <input type="checkbox"/> → List of CRs: O&M specifications <input type="checkbox"/> → List of CRs:	
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**Other comments:**      See accompanying document for updates to TS 32.106-6 and additional descriptions on these updates. Only the iterator class is referenced from Annex A. The responsibilities for destroying the iterator was initially discussed in Tdoc S5F000065.

```

/**
| The AlarmInformationIterator is used to iterate through a set snapshot of
Alarm
| Informations taken from the Alarm List when IRPManager invokes
| get_alarm_list. IRPManager uses it to pace the return of Alarm
| Informations.
| in Alarm List. Method get_alarm_list contains it as
| output parameter.
| IRPAgent controls the life-cycle of the iterator. However, a
| destroy operation is provided to handle the case where IRPManager wants to
| stop the iteration procedure before reaching the last iteration.
| IRPManager uses it to pace the return of Alarm Informations. IRPManager
| cannot use it to pace when IRPAgent should retrieve Alarm Informations
| from Alarm List.
*/

interface AlarmInformationIterator {

    /**
| This method returns up to "how_many" between 0 and "how_many" Alarm
Informations.
| "how_many" must be non-zero. Return TRUE if there are more
| Alarm Information to return. Return FALSE if there are no more Alarm
| Information to be returned. Note that the IRPAgent may both provide the
| last items in the alarm list and also indicate FALSE for completion.
|
| If FALSE is returned, the IRPAgent will automatically destroy the
| iterator. If 1 or more Alarm Information is returned, return TRUE.
| Return FALSE if there is no more Alarm Information to be returned.
*/

    boolean next_alarmInformations (
|     in unsigned long short how_many,
|     out AlarmIRPConstDefs::AlarmInformationSeq alarm_informations
| )
    raises (NextAlarmInformations, InvalidParameter);

    /**
| This method destroys the iterator.
*/

    void destroy ();

}; // end of AlarmInformationIterator

```

<b>CHANGE REQUEST</b>		Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.
<b>32-111-3 CR 002</b>	Current Version: <b>V3.1.0</b>	
GSM (AA.BB) or 3G (AA.BBB) specification number ↑	↑ CR number as allocated by MCC support team	
For submission to: <b>SA#9</b> <small>list expected approval meeting # here ↑</small>	for approval <input checked="" type="checkbox"/> for information <input type="checkbox"/>	strategic <input type="checkbox"/> non-strategic <input type="checkbox"/> <small>(for SMG use only)</small>

Form: CR cover sheet, version 2 for 3GPP and SMG    The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

**Proposed change affects:**    (U)SIM     ME     UTRAN / Radio     Core Network   
(at least one should be marked with an X)

**Source:**    **SA5#14 (Fault Management)**    **Date:**    **1 September 2000**

**Subject:**    **Clarification On Filterable Body Fields**

**Work item:**    \_\_\_\_\_

<b>Category:</b>	F Correction <input type="checkbox"/> A Corresponds to a correction in an earlier release <input type="checkbox"/> B Addition of feature <input type="checkbox"/> C Functional modification of feature <input type="checkbox"/> D Editorial modification <input checked="" type="checkbox"/>	<b>Release:</b>	Phase 2 <input type="checkbox"/> Release 96 <input type="checkbox"/> Release 97 <input type="checkbox"/> Release 98 <input type="checkbox"/> Release 99 <input checked="" type="checkbox"/> Release 00 <input type="checkbox"/>
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(only one category shall be marked with an X)

**Reason for change:**    From clause 6 Table 9 of TS 32.111-3, `correlatedNotifications`, `stateChangeDefinition` and `monitoredAttributes` are in the Filterable Body Fields portion of the OMG Structured Event. Since they are sets, they basically can't be filtered using OMG Notification Service Extended Trader Constraint Language (TCL).

`correlatedNotifications` is defined as `CorrelatedNotificationSetType` (in TS 32.106-4), which is a sequence of structures (containing a sequence).

`stateChangeDefinition` is defined as `AttributeChangeSetType`; which is a sequence of structures.

`monitoredAttributes` is defined as `AttributesSetType`, which is a sequence of structures (containing an Any).

The Extended TCL grammar defined in OMG Notification Service (based from the grammar defined in OMG Telecom Log Service), allows sequence operations, but not set operations. Sequence operations are performed by using the “[“ and “]” operators (as an example, `$a[0].name` accesses the name attribute in the first element of the a sequence). Set operations can be performed on sequences of fixed length (as an example, to check to see if ‘b’ is in a sequence of fixed length 3, you could check “`($a[0].name == ‘b’) or ($a[1].name == ‘b’) or ($a[2].name == ‘b’)`”), but not on sequences of variable length.

**Clauses affected:**    **6**

<b>Other specs affected:</b>	Other 3G core specifications <input type="checkbox"/> Other GSM core specifications <input type="checkbox"/> MS test specifications <input type="checkbox"/> BSS test specifications <input type="checkbox"/> O&M specifications <input type="checkbox"/>	→ List of CRs: _____ → List of CRs: _____ → List of CRs: _____ → List of CRs: _____ → List of CRs: _____
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Other  
comments:



## 6 Use of OMG Structured Event

Operation `notify` defined in 3G TS 32.111-2 [13] carries parameters, such as `notificationHeader` and `alarmInformationBody`. In CORBA SS, OMG defined `StructuredEvent` (see ITU-T Recommendation X.736 [2]) is used to carry notification. This clause identifies the OMG defined `StructuredEvent` attributes that carry the attributes of parameters defined in 3G TS 32.111-2 [13].

The composition of OMG Structured Event, as defined in the OMG TC Document `telecom` [6], is:

```

Header
  Fixed Header
    domain_name
    type_name
    event_name
  Variable Header
Body
  filterable_body_fields
  remaining_body

```

Table 11 lists all OMG Structured Event attributes in the second column. The first column identifies the SS attributes, if any, that shall be carried in the Structured Event attributes.

**Table 11: Use of OMG Structured Event**

SS Attribute	OMG CORBA Structured Event attribute	Comment
There is no corresponding SS attribute.	<code>domain_name</code>	It contains a string defined by interface <code>IRPNotificationCategoryValue.alarmIRPVersion_1_1</code> . It indicates the syntax and semantics of this Structured Event is defined by Alarm IRP: CORBA SS 1:1.
<code>eventType</code>	<code>type_name</code>	Attribute <code>eventType</code> is an attribute of <code>notificationHeader</code> . It shall indicate one of the following ITU-T defined semantics: communications alarm, processing error alarm, environmental alarm, quality of service alarm and equipment alarm. It is a string. See block of const string definitions starting with "ET_" in the IDL.
<code>extendedEventType</code>	<code>event_name</code>	Attribute <code>extendedEventType</code> is an attribute of <code>notificationHeader</code> . It shall identify one of the following: <ul style="list-style-type: none"> <li>notify a new alarm</li> <li>notify changes in alarm state</li> <li>notify changes in alarm acknowledgement state</li> <li>notify alarm cleared</li> <li>notify Alarm List has been successfully rebuilt</li> </ul> It is a string. See block of const string definitions starting with "NOTIFY_FM_" in the IDL.
There is no corresponding SS attribute.	<code>variable Header</code>	
<code>managedObjectClass</code> , <code>managedObjectInstance</code>	One NV pair of <code>filterable_body_fields</code>	NV stands for name-value pair. Order arrangement of NV pairs is not significant. The name of NV-pair is always encoded in string. They are attributes of <code>notificationHeader</code> . Name of NV pair is a string, <code>AttributeNameValue.managedObjectInstance</code> . Value of NV pair is a string. See corresponding table in Notification IRP: CORBA SS (3G TS 32.106-3 [11]).

notificationId	One NV pair of filterable_body_fields	It is an attribute of notificationHeader. Name of NV pair is a string, AttributeNameValue.notificationId. Value of NV pair is a long. See corresponding table in Notification IRP: CORBA SS (3G TS 32.106-3 [11]).
eventTime	One NV pair of filterable_body_fields	It is an attribute of notificationHeader. Name of NV pair is AttributeNameValue.eventTime. Value of NV pair is a IRPTime. See corresponding table in Notification IRP: CORBA SS (3G TS 32.106-3 [11]).
systemDN	One NV pair of filterable_body_fields	It is an attribute of notificationHeader. Name of NV pair is a string, AttributeNameValue.systemDN. Value of NV pair is a string. See corresponding table in Notification IRP: CORBA SS [11].
probableCause	One NV pair of filterable_body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, AttributeNameValue.probableCause. Value of NV pair is a short defined by ProbableCauseValue.
perceivedSeverity	One NV pair of filterable_body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, AttributeNameValue.perceivedSeverity. Value of NV pair is a short defined by PS_INDETERMINATE, PS_CRITICAL, etc.
specificProblem	One NV pair of filterable_body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, AttributeNameValue.specificProblem. Value of NV pair is a string.
correlatedNotifications	One NV pair of filterable_body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, AttributeNameValue.correlatedNotifications. Value of NV pair is a CorrelatedNotificationSetType.
backedUpStatus	One NV pair of filterable_body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, AttributeNameValue.backedUpStatus. Value of NV pair is a boolean BackedUpStatusType.
backUpObject	One NV pair of filterable_body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, AttributeNameValue.backedUpStatus. Value of NV pair is a string carrying of DN of the back-up object. See 3G TS 32.106-8 [8] for the DN string representation.
trendIndication	One NV pair of filterable_body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, AttributeNameValue.trendIndication. Value of NV pair is an enum TrendIndicationType.
thresholdInfo	One NV pair of filterable_body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, ParameterNameValue.thresholdInfo. Value of NV pair is an enum ThresholdIndicationType.
stateChangeDefinition	One NV pair of filterable_body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, AttributeNameValue.stateChangeDefinition. Value of NV pair is an AttributeChangeSetType.
monitoredAttributes	One NV pair of filterable_body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, AttributeNameValue.monitoredAttributes. Value of NV pair is an AttributeSetType.
proposedRepairActions	One NV pair of filterable_body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, AttributeNameValue.proposedRepairActions. Value of NV pair is a string.

additional Text	One NV pair of filterable_ body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, AttributeNameValue.additionalText. Value of NV pair is a string.
additional Information.a larmId	One NV pair of filterable_ body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, AttributeNameValue.alarmId. Value of NV pair is a string. If the string is a zero-length string or if this NV pair is absent, the default semantics is that alarmId is a concatenation of managedObjectInstance, eventType, probableCause and specificProblem, if present, of this Structured Event. Since probableCuase is encoded as a short, it shall be converted into string before concatenation. The resultant string shall not contain spaces.
additional Information. ackTime	One NV pair of filterable_ body_fields	It is an attribute of notificationHeader. Name of NV pair is a string, AttributeNameValue.ackTime. Value of NV pair is a IRPTime.
additional Information. ackUserId	One NV pair of filterable_ body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, AttributeNameValue.ackUserId. Value of NV pair is a string.
additional Information. ackSystemId	One NV pair of filterable_ body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, AttributeNameValue.ackSystemId. Value of NV pair is a string.
additional Information. ackState	One NV pair of filterable_bod y_fields	It is an attribute of alarmInformationBody. Value of NV pair is a short defined by ACK_STATE_ACKNOWLEDGED and ACK_STATE_UNACKNOWLEDGED. Value of NV pair is a short defined by AlarmAckState.
There is no corresponding SS attribute.	remaining_ body	

While correlatedNotifications, stateChangeDefinition and monitoredAttributes are contained in the Filterable Body Field, they are variable length sets, and as such, are typically not directly filterable using the OMG Notification Extended TCL grammar.



<b>CHANGE REQUEST</b>		Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.
<b>32-111-3</b>	<b>CR</b>	<b>003</b>
GSM (AA.BB) or 3G (AA.BBB) specification number ↑		↑ CR number as allocated by MCC support team
For submission to: <b>SA#9</b> <small>list expected approval meeting # here ↑</small>		Current Version: <b>V3.1.0</b>
for approval <input checked="" type="checkbox"/>		strategic <input type="checkbox"/>
for information <input type="checkbox"/>		non-strategic <input type="checkbox"/> <small>(for SMG use only)</small>

Form: CR cover sheet, version 2 for 3GPP and SMG    The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

**Proposed change affects:**    (U)SIM     ME     UTRAN / Radio     Core Network   
(at least one should be marked with an X)

**Source:**    **SA5#14** (Fault Management)    **Date:**    1 September 2000

**Subject:**    Correct push\_structured\_event of push\_structured\_events

**Work item:**    \_\_\_\_\_

<b>Category:</b>	F Correction <input checked="" type="checkbox"/> A Corresponds to a correction in an earlier release <input type="checkbox"/> B Addition of feature <input type="checkbox"/> C Functional modification of feature <input type="checkbox"/> D Editorial modification <input type="checkbox"/>	<b>Release:</b>	Phase 2 <input type="checkbox"/> Release 96 <input type="checkbox"/> Release 97 <input type="checkbox"/> Release 98 <input type="checkbox"/> Release 99 <input checked="" type="checkbox"/> Release 00 <input type="checkbox"/>
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(only one category shall be marked with an X)

**Reason for change:**    Correct spelling.

**Clauses affected:**    5.1, 7

<b>Other specs affected:</b>	Other 3G core specifications <input type="checkbox"/> → List of CRs: Other GSM core specifications <input type="checkbox"/> → List of CRs: MS test specifications <input type="checkbox"/> → List of CRs: BSS test specifications <input type="checkbox"/> → List of CRs: O&M specifications <input type="checkbox"/> → List of CRs:	
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**Other comments:**    \_\_\_\_\_

## 5.1 Operation and Notification mapping

Alarm IRP: IS 3G TS 32.111-2 [13] defines semantics of operation and notification visible across the Alarm IRP. Table 1 indicates mapping of these operations and notifications to their equivalents defined in this SS.

**Table 1: Mapping from IS Notification/Operation to SS equivalents**

IS Operation/ notification 3G TS 32.111-2 [13]	SS Method	Qualifier
acknowledgeAlarms	acknowledge_alarms	M
unacknowledgeAlarms	unacknowledge_alarms	O
getAlarmList	get_alarm_list	M
getAlarmIRPVersion	get_alarm_IRP_version	M
getAlarmCount	get_alarm_count	O
notifyNewAlarm	<u>push_structured_event</u> <u>push_structured_events</u> Note that OMG Notification Service 3G TS 32.106-2 [6] defines this method. See clause 8.1	M
notifyClearedAlarm	<u>push_structured_event</u> <u>push_structured_events</u> See clause 8.1	M
notifyChangedAlarm	<u>push_structured_event</u> <u>push_structured_events</u> See clause 8.1	M
notifyAckStateChanged	<u>push_structured_event</u> <u>push_structured_events</u> See clause 8.1	M
notifyAlarmListRebuilt	<u>push_structured_event</u> <u>push_structured_events</u> See clause 8.1	M

## 7 AlarmIRPNotifications Interface

OMG CORBA Notification push operation is used to realise the notification of AlarmIRPNotifications. All the notifications in this interface are implemented using this push\_structured\_eventpush\_structured\_events method.

# CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

**32.111-3 CR 004**

Current Version: **V.3.1.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **SA#9**  
list expected approval meeting # here ↑

for approval   
for information

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Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

**Proposed change affects:**  
(at least one should be marked with an X)

(U)SIM  ME  UTRAN / Radio  Core Network

**Source:**

**SA5#14** (Fault Management)

**Date:**

12 September 2000

**Subject:**

Remove the use of interface to encapsulate const strings

**Work item:**

**Category:**

(only one category shall be marked with an X)

F Correction   
A Corresponds to a correction in an earlier release   
B Addition of feature   
C Functional modification of feature   
D Editorial modification

**Release:**

Phase 2   
Release 96   
Release 97   
Release 98   
Release 99   
Release 00

**Reason for change:**

In previous version, the CORBA SS makes use of interface to encapsulate const strings. In the previous versions, the text, in particular table 11, and the IDL reflects that fact. In the last version, the CORBA SS removes the use of interface to encapsulate const strings. It uses the highest module to encapsulate const strings. The IDL reflects this change. But the table 11 did not reflect this change.

**Clauses affected:**

6

**Other specs affected:**

Other 3G core specifications  → List of CRs:  
Other GSM core specifications  → List of CRs:  
MS test specifications  → List of CRs:  
BSS test specifications  → List of CRs:  
O&M specifications  → List of CRs:

**Other comments:**

## 6 Use of OMG Structured Event

Operation `notify` defined in 3G TS 32.111-2 [13] carries parameters, such as `notificationHeader` and `alarmInformationBody`. In CORBA SS, OMG defined `StructuredEvent` (see ITU-T Recommendation X.736 [2]) is used to carry notification. This clause identifies the OMG defined `StructuredEvent` attributes that carry the attributes of parameters defined in 3G TS 32.111-2 [13].

The composition of OMG Structured Event, as defined in the OMG TC Document telecom [6], is:

```

Header
  Fixed Header
    domain_name
    type_name
    event_name
  Variable Header
Body
  filterable_body_fields
  remaining_body
  
```

Table 11 lists all OMG Structured Event attributes in the second column. The first column identifies the SS attributes, if any, that shall be carried in the Structured Event attributes.

SS Attribute	OMG CORBA Structured Event attribute	Comment
There is no corresponding SS attribute.	<code>domain_name</code>	It contains a string defined by interface <code>IRPNotificationCategoryValue.alarmIRPVersion_1_1</code> . It indicates the syntax and semantics of this Structured Event is defined by Alarm IRP: CORBA SS 1:1.
<code>eventType</code>	<code>type_name</code>	Attribute <code>eventType</code> is an attribute of <code>notificationHeader</code> . It shall indicate one of the following ITU-T defined semantics: communications alarm, processing error alarm, environmental alarm, quality of service alarm and equipment alarm. It is a string. See block of const string definitions starting with "ET_" in the IDL.
<code>extendedEventType</code>	<code>event_name</code>	Attribute <code>extendedEventType</code> is an attribute of <code>notificationHeader</code> . It shall identify one of the following: <ul style="list-style-type: none"> <li>notify a new alarm</li> <li>notify changes in alarm state</li> <li>notify changes in alarm acknowledgement state</li> <li>notify alarm cleared</li> <li>notify Alarm List has been successfully rebuilt</li> </ul> It is a string. See block of const string definitions starting with "NOTIFY_FM_" in the IDL.
There is no corresponding SS attribute.	variable Header	
<code>managedObjectClass</code> , <code>managedObjectInstance</code>	One NV pair of <code>filterable_body_fields</code>	NV stands for name-value pair. Order arrangement of NV pairs is not significant. The name of NV-pair is always encoded in string. They are attributes of <code>notificationHeader</code> . Name of NV pair is a string, <code>NV_MANAGED_OBJECT_INSTANCE</code> defined in module <code>NotificationIRPConstDefs</code> . Value of NV pair is a string. See corresponding table in Notification IRP: CORBA SS (3G TS 32.106-3 [11]).

notification Id	One NV pair of filterable_body_fields	It is an attribute of notificationHeader. Name of NV pair is a string, NV_NOTIFICATION_ID defined in module NotificationIRPConstDefs.. Value of NV pair is a long. See corresponding table in Notification IRP: CORBA SS (3G TS 32.106-3 [11]).
eventTime	One NV pair of filterable_body_fields	It is an attribute of notificationHeader. Name of NV pair is NV_EVENT_TIME defined in module NotificationIRPConstDefs.. Value of NV pair is a IRPTime. See corresponding table in Notification IRP: CORBA SS (3G TS 32.106-3 [11]).
systemDN	One NV pair of filterable_body_fields	It is an attribute of notificationHeader. Name of NV pair is a string, NV_SYSTEM_DN defined in module NotificationIRPConstDefs.. Value of NV pair is a string. See corresponding table in Notification IRP: CORBA SS [11].
probableCause	One NV pair of filterable_body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, NV_PROBABLE_CAUSE defined in module NotificationIRPConstDefs.. Value of NV pair is a short defined by PC_INDETERMINATE, PC_ALARM_INDICATION_SIGNAL, etc.
perceived Severity	One NV pair of filterable_body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, NV_PERCEIVED_SEVERITY defined in module NotificationIRPConstDefs.. Value of NV pair is a short defined by PS_INDETERMINATE, PS_CRITICAL, etc.
specific Problem	One NV pair of filterable_body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, NV_SPECIFIC_PROBLEM defined in module NotificationIRPConstDefs.. Value of NV pair is a string.
correlated Notifications	One NV pair of filterable_body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, NV_CORRELATED_NOTIFICATIONS defined in module NotificationIRPConstDefs.. Value of NV pair is a CorrelatedNotificationSetType.
backed UpStatus	One NV pair of filterable_body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, NV_BACKED_UP_STATUS defined in module NotificationIRPConstDefs.. Value of NV pair is a boolean BackedUpStatusType.
backUpObject	One NV pair of filterable_body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, NV_BACK_UP_OBJECT defined in module NotificationIRPConstDefs.. Value of NV pair is a string carrying of DN of the back-up object. See 3G TS 32.106-8 [8] for the DN string representation.
trend Indication	One NV pair of filterable_body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, NV_TREND_INDICATION defined in module NotificationIRPConstDefs.. Value of NV pair is an enum TrendIndicationType.
thresholdInfo	One NV pair of filterable_body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, NV_THRESHOLD_INFO defined in module NotificationIRPConstDefs.. Value of NV pair is an enum ThresholdIndicationType.
stateChange Definition	One NV pair of filterable_body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, NV_STATE_CHANGE_DEFINITION defined in module NotificationIRPConstDefs.. Value of NV pair is an AttributeChangeSetType.
monitored Attributes	One NV pair of filterable_body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, NV_MONITORED_ATTRIBUTES defined in module NotificationIRPConstDefs.. Value of NV pair is an AttributeSetType.
proposed RepairActions	One NV pair of filterable_	It is an attribute of alarmInformationBody. Name of NV pair is a string, NV_PROPOSED_REPAIR_ACTIONS

	body_fields	defined in module NotificationIRPConstDefs.. Value of NV pair is a string.
additional Text	One NV pair of filterable_ body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, NV_ADDITIONAL_TEXT defined in module NotificationIRPConstDefs.. Value of NV pair is a string.
additional Information.a alarmId	One NV pair of filterable_ body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, NV_ALARM_ID defined in module NotificationIRPConstDefs.. Value of NV pair is a string. If the string is a zero-length string or if this NV pair is absent, the default semantics is that alarmId is a concatenation of managedObjectInstance, eventType, probableCause and specificProblem, if present, of this Structured Event. Since probableCuase is encoded as a short, it shall be converted into string before concatenation. The resultant string shall not contain spaces.
additional Information. ackTime	One NV pair of filterable_ body_fields	It is an attribute of notificationHeader. Name of NV pair is a string, NV_ACK_TIME defined in module NotificationIRPConstDefs.. Value of NV pair is a IRPTime.
additional Information. ackUserId	One NV pair of filterable_ body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, NV_ACK_USER_ID defined in module NotificationIRPConstDefs.. Value of NV pair is a string.
additional Information. ackSystemId	One NV pair of filterable_ body_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, NV_ACK_SYSTEM_ID defined in module NotificationIRPConstDefs.. Value of NV pair is a string.
additional Information. ackState	One NV pair of filterable_bod y_fields	It is an attribute of alarmInformationBody. Name of NV pair is a string, NV_ACK_STATE defined in module NotificationIRPConstDefs.  Value of NV pair is a short defined by ACK_STATE_ACKNOWLEDGED and ACK_STATE_UNACKNOWLEDGED.
There is no corresponding SS attribute.	remaining_ body	