# Classes

## AlarmCapability

Applied stereotypes:

* OpenModelClass
* support: MANDATORY
* OpenInterfaceModelClass
* objectCreationNotification: NO
* objectDeletionNotification: NO

Attributes for AlarmCapability

Table 1: Attributes for AlarmCapability

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| alarmInventoryList | AlarmKindType  ./. | 0..\* | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | This alarm-inventory list contains all possible alarm types at the device. |

## AlarmConfiguration

Applied stereotypes:

* OpenModelClass
* support: MANDATORY
* OpenInterfaceModelClass
* objectCreationNotification: NO
* objectDeletionNotification: NO

Attributes for AlarmConfiguration

Table 1: Attributes for AlarmConfiguration

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| severityConfigurationList | SeverityConfigurationType  ./. | 0..\* | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA |  |

## AlarmEventRecords

Applied stereotypes:

* OpenModelClass
* support: MANDATORY
* OpenInterfaceModelClass
* objectCreationNotification: NO
* objectDeletionNotification: NO

Attributes for AlarmEventRecords

Table 1: Attributes for AlarmEventRecords

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| alarmEventRecordList | AlarmEventRecordType  ./. | 0..\* | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA |  |
| numberOfAlarmEventRecords | Integer  -1 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_16\_BIT | Number of alarms, which are currently active on this air interface. |
| timeOfLatestChange | DateTime  2010-11-20T14:00:00+01:00 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | Date and time when the list of alarms has been changed for the last time. |

## AlarmSpec

Applied stereotypes:

* OpenModelClass
* support: MANDATORY
* OpenInterfaceModelClass
* objectCreationNotification: YES
* objectDeletionNotification: YES

Attributes for AlarmSpec

Table 1: Attributes for AlarmSpec

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| \_Alarm\_Pac | Alarm\_Pac  ./. | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | See referenced class |

## Alarm\_Pac

Applied stereotypes:

* OpenModelClass
* support: MANDATORY
* OpenInterfaceModelClass
* objectCreationNotification: NO
* objectDeletionNotification: NO

Attributes for Alarm\_Pac

Table 1: Attributes for Alarm\_Pac

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| \_AlarmCapability | AlarmCapability  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | See referenced class |
| \_AlarmConfiguration | AlarmConfiguration  ./. | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | See referenced class |
| \_CurrentAlarms | CurrentAlarms  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | See referenced class |
| \_AlarmEventRecords | AlarmEventRecords  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | See referenced class |

## CurrentAlarms

Applied stereotypes:

* OpenModelClass
* support: MANDATORY
* OpenInterfaceModelClass
* objectCreationNotification: NO
* objectDeletionNotification: NO

Attributes for CurrentAlarms

Table 1: Attributes for CurrentAlarms

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| currentAlarmList | CurrentAlarmType  ./. | 0..\* | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | The list of alarmEventSequenceNumbers of currently active alarms. |
| numberOfCurrentAlarms | Integer  -1 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_16\_BIT | This object shows the total number of currently active alarms in the system. |
| timeOfLatestChange | DateTime  2010-11-20T14:00:00+01:00 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | A timestamp when the alarm list was last changed. The value can be used by a manager to initiate an alarm resynchronization procedure. |

# Data Types

## AlarmEventRecordType

Applied Stereotypes:

Attributes for AlarmEventRecordType

Table 1: Attributes for AlarmEventRecordType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| alarmEventSequenceNumber | Integer  ./. | 1 | R | OpenModelAttribute   * partOfObjectKey: 1 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_32\_BIT | Identifier of the records of raised and cleared alarms. |
| alarmTypeId | AlarmTypeIdType  ./. | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | This leaf and the leaf alarm-type-qualifier together provides a unique identification of the alarm type. |
| alarmTypeQualifier | String  ./. | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | This leaf is used when the alarm-type-id leaf cannot uniquely identify the alarm type. Normally, this is not the case, and this leaf is the empty string. |
| \_resource | GlobalClass  ./. | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | Concrete resource affected by this alarm event. |
| \_subresource | LocalClass  ./. | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | Concrete resource affected by this alarm event. |
| alarmSeverity | SeverityAndClearedType  NOT\_YET\_DEFINED | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | Severity of the alarm, but also indication about the alarm being cleared. |
| timestamp | DateTime  2010-11-20T14:00:00+01:00 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | The time-stamp when this alarm event occured. |

## AlarmKindType

Applied Stereotypes:

Attributes for AlarmKindType

Table 1: Attributes for AlarmKindType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| alarmTypeId | AlarmTypeIdType  ./. | 1 | R | OpenModelAttribute   * partOfObjectKey: 1 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | The statically defined alarm type identifier for this possible alarm. |
| alarmTypeQualifier | String  ./. | 1 | R | OpenModelAttribute   * partOfObjectKey: 2 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | The optionally defined alarm type identifier for this possible alarm. |
| willClear | Boolean  false | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | This leaf tells the operator if the alarm will be cleared when the correct corrective action has been taken. |
| description | String  Not yet defined. | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | A description of the possible alarm. It should include information on possible underlying root causes and corrective actions. |
| alarmCategory | AlarmCategoryType  NOT\_YET\_DEFINED | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | The X.733/X.736 event type for this alarm. |
| probableCause | Integer  -1 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_16\_BIT | The X.733 probable cause for this alarm. |
| probableCauseString | String  Not yet defined. | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | The user friendly string matching the probable cause integer value. The string should match the X.733 enumeration. |
| specificProblem | String  Not yet defined. | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA   Reference | This parameter, when present, identifies further refinements to the probable-cause of the alarm. This parameter qualifies the chosen probable-cause and may be used by the managed object class definer to specify a set of identifiers for use in managed object classes. |

## CurrentAlarmType

Applied Stereotypes:

Attributes for CurrentAlarmType

Table 1: Attributes for CurrentAlarmType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| alarmTypeId | AlarmTypeIdType  ./. | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | This leaf and the leaf alarm-type-qualifier together provides a unique identification of the alarm type. |
| alarmTypeQualifier | String  ./. | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | This leaf is used whenever the alarm-type-id leaf cannot uniquely identify the type of alarm. Usually, this is not required and this leaf is an empty string. |
| \_resource | GlobalClass  ./. | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA |  |
| \_subresource | LocalClass  ./. | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA |  |
| alarmSeverity | SeverityType  NOT\_YET\_DEFINED | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | Severity of the alarm. |
| timestamp | DateTime  2010-11-20T14:00:00+01:00 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | Time when this alarm entry was created. This represents the first time the alarm appeared, it can also represent that the alarm re-appeared after a purge. Further state-changes of the same alarm does not change this leaf, these changes will update the last-changed leaf. |

## SeverityConfigurationType

This list is used to override the system default alarm severity levels.

Applied Stereotypes:

* Reference

Attributes for SeverityConfigurationType

Table 1: Attributes for SeverityConfigurationType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| severityConfigurationIdentifier | String  ./. | 1 | R | OpenModelAttribute   * partOfObjectKey: 1 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA |  |
| alarmTypeId | AlarmTypeIdType  ./. | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | The alarm type identifier to match. |
| alarmTypeQualifier | String  ./. | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | The optionally defined alarm type identifier for this possible alarm. |
| resourceList | String  ./. | 1..\* | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | One or several xpath expressions describing individual resources or types of resources that a subject to the severity definition. |
| resourceGroupDescription | String  ./. | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | Label that describes the group of ressources or ressource types that are subject to this severity configuration. |
| severityLevelList | SeverityType  NOT\_YET\_DEFINED | 0..\* | RW | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: false * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: YES * bitLength: NA | Specifies the configured severity level(s) for the matching alarm. If the alarm has several severity levels, the leaf-list shall be given in rising severity order. Example: Assume a high-utilization alarm type with two thresholds with the system-default severity levels of threshold1 = warning and threshold2 = minor. Setting this leaf-list to (minor, major) will assign the severity levels as threshold1 = minor and threshold2 = major. |

# Enumeration Types

## AlarmCategoryType

Contains Enumeration Literals:

* OTHER:
  + None of the below.
* COMMUNICATIONS\_ALARM:
  + An alarm of this type is principally associated with the procedures and/or processes required to convey information from one point to another.
* QUALITY\_OF\_SERVICE\_ALARM:
  + An alarm of this type is principally associated with a degradation in the quality of a service.
* PROCESSING\_ERROR\_ALARM:
  + An alarm of this type is principally associated with a software or processing fault.
* EQUIPMENT\_ALARM:
  + An alarm of this type is principally associated with an equipment fault.
* ENVIRONMENTAL\_ALARM:
  + An alarm of this type is principally associated with a condition relating to an enclosure in which the equipment resides.
* INTEGRITY\_VIOLATION:
  + An indication that information may have been illegally modified, inserted or deleted.
* OPERATIONAL\_VIOLATION:
  + An indication that the provision of the requested service was not possible due to the unavailability, malfunction or incorrect invocation of the service.
* PHYSICAL\_VIOLATION:
  + An indication that a physical resource has been violated in a way that suggests a security attack.
* SECURITY\_SERVICE\_OR\_MECHANISM\_VIOLATION:
  + An indication that a security attack has been detected by a security service or mechanism.
* TIME\_DOMAIN\_VIOLATION:
  + An indication that an event has occurred at an unexpected or prohibited time.
* NOT\_YET\_DEFINED:

## AlarmTypeIdType

Contains Enumeration Literals:

## LayerProtocolNameType

A controlled list of LayerProtocol names.

Contains Enumeration Literals:

* LAYER\_PROTOCOL\_NAME\_TYPE\_AIR\_LAYER:

## SeverityAndClearedType

According to ITU-T M.3160

Contains Enumeration Literals:

* INDETERMINATE:
  + Indicates that the severity level could not be determined. This level SHOULD be avoided.
* WARNING:
  + This severity level indicates the detection of a potential or impending service affecting fault, before any significant effects have been felt. Action should be taken to further diagnose (if necessary) and correct the problem in order to prevent it from becoming a more serious service affecting fault.
* MINOR:
  + This severity level indicates the existence of a non-service affecting fault condition and that corrective action should be taken in order to prevent a more serious (for example, service affecting) fault. Such a severity can be reported, for example, when the detected alarm condition is not currently degrading the capacity of the resource.
* MAJOR:
  + This severity level indicates that a service affecting condition has developed and an urgent corrective action is required. Such a severity can be reported, for example, when there is a severe degradation in the capability of the resource and its full capability must be restored.
* CRITICAL:
  + This severity level indicates that a service affecting condition has occurred and an immediate corrective action is required. Such a severity can be reported, for example, when a resource becomes totally out of service and its capability must be restored.
* NOT\_YET\_DEFINED:
* CLEARED:

## SeverityType

According to ITU-T M.3160

Contains Enumeration Literals:

* INDETERMINATE:
  + Indicates that the severity level could not be determined. This level SHOULD be avoided.
* WARNING:
  + This severity level indicates the detection of a potential or impending service affecting fault, before any significant effects have been felt. Action should be taken to further diagnose (if necessary) and correct the problem in order to prevent it from becoming a more serious service affecting fault.
* MINOR:
  + This severity level indicates the existence of a non-service affecting fault condition and that corrective action should be taken in order to prevent a more serious (for example, service affecting) fault. Such a severity can be reported, for example, when the detected alarm condition is not currently degrading the capacity of the resource.
* MAJOR:
  + This severity level indicates that a service affecting condition has developed and an urgent corrective action is required. Such a severity can be reported, for example, when there is a severe degradation in the capability of the resource and its full capability must be restored.
* CRITICAL:
  + This severity level indicates that a service affecting condition has occurred and an immediate corrective action is required. Such a severity can be reported, for example, when a resource becomes totally out of service and its capability must be restored.
* NOT\_YET\_DEFINED:

# Primitive Types