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Technical Specification

Digital cellular telecommunications system (Phase 2+);
Universal Mobile Telecommunications System (UMTS);
LTE;
Telecommunication management;
Advanced Alarm Management (AAM)
Integration Reference Point (IRP):
eXtensible Markup Language (XML) file format definition
(3GPP TS 32.125 version 8.0.0 Release 8)

Reference
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Foreword

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Contents

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

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- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

Introduction

The present document is part of a TS-family covering the 3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Telecommunication management; as identified below:

32.121: Advanced Alarm Management (AAM) Integration Reference Point (IRP): Requirements

32.122: Advanced Alarm Management (AAM) Integration Reference Point (IRP): Information Service (IS)

32.123: Advanced Alarm Management (AAM) Integration Reference Point (IRP): Common Object Request Broker Architecture (CORBA) Solution Set

32.125: Advanced Alarm Management (AAM) Integration Reference Point (IRP): eXtensible Markup Language (XML) file format definition

The Itf-N interface is built up by a number of IRPs and a related Name Convention, which realise the functional capabilities over this interface. The basic structure of the IRPs is defined in 3GPP TS 32.150 [1].

For the purpose of AAM IRP, see TS 32.121 [2]

1 Scope

The purpose of Advanced Alarm Management (AAM) IRP is to define an interface through which an IRPManager can categorize alarm notifications.

The present document is the AAM IRP XML file format definition, whose semantics are specified in AAM IRP Information Service (3GPP TS 32.122 [3]).

This file format definition specification is related to TS 32.122 v8.1.0.

2 References

The following documents contain provisions that, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document in the same Release as the present document.

[1] 3GPP TS 32.150: "Telecommunication management; Integration Reference Point (IRP) Concept and definitions".

[2] 3GPP TS 32.121: "Telecommunication management; Advanced Alarm Mangement (AAM) Integrations Reference Point (IRP); Requirements ".

[3] 3GPP TS 32.122: "Telecommunication management; Advanced Alarm Mangement (AAM) Integrations Reference Point (IRP); Information Service (IS)".

[4] W3C REC-xml-20001006: "Extensible Markup Language (XML) 1.0 (Second Edition)".

[5] W3C REC-xmlschema-0-20010502: "XML Schema Part 0: Primer".

[6] W3C REC-xmlschema-1-20010502: "XML Schema Part 1: Structures".

[7] W3C REC-xmlschema-2-20010502: "XML Schema Part 2: Datatypes".

[8] W3C REC-xml-names-19990114: "Namespaces in XML".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

IRP: See 3GPP TS 32.150 [1].

IRPAgent: See 3GPP TS 32.150 [1].

IRPManager: See 3GPP TS 32.150 [1].

Alike Alarm: Two alarms are considered alike, if the corresponding alarm notifications are issued by the same object instance with the same alarmType, same perceivedSeverity, same probableCause and same specificProblem (if present).

Lower Edge of Time Window: The point in time which determines the begin of a time span.

Upper Edge of Time Window: The point in time which determines the end of a time span.

XML file: file containing an XML document

XML document: composed of the succession of an optional XML declaration followed by a root XML element

NOTE: See [4]; in the scope of the present document.

XML declaration: it specifies the version of XML being used

NOTE: See [4].

XML element: has a type, is identified by a name, may have a set of XML attribute specifications and is either composed of the succession of an XML start-tag followed by the XML content of the XML element followed by an XML end-tag, or composed simply of an XML empty-element tag; each XML element may contain other XML elements

NOTE: See [4].

empty XML element: having an empty XML content; an empty XML element still possibly has a set of XML attribute specifications; an empty XML element is either composed of the succession of an XML start-tag directly followed by an XML end-tag, or composed simply of an XML empty-element tag

NOTE: See [4].

XML content (of an XML element): empty if the XML element is simply composed of an XML empty-element tag; otherwise the part, possibly empty, of the XML element between its XML start-tag and its XML end-tag

XML start-tag: the beginning of a non-empty XML element is marked by an XML start-tag containing the name and the set of XML attribute specifications of the XML element

NOTE: See [4].

XML end-tag: the end of a non-empty XML element is marked by an XML end-tag containing the name of the XML element

NOTE: See [4].

XML empty-element tag: composed simply of an empty-element tag containing the name and the set of XML attribute specifications of the XML element.

NOTE: See [4].

XML attribute specification: has a name and a value

NOTE: See [4].

DTD: defines structure and content constraints to be respected by an XML document to be valid with regard to this DTD

NOTE: See [4].

XML schema: more powerful than a DTD, an XML schema defines structure and content constraints to be respected by an XML document to conform with this XML schema; through the use of XML namespaces several XML schemas can be used together by a single XML document; an XML schema is itself also an XML document that shall conform with the XML schema for XML schemas

NOTE: See [5], [6] and [7].

XML namespace: enables qualifying element and attribute names used in XML documents by associating them with namespaces identified by different XML schemas

NOTE: See [8], in the scope of the present document.

XML complex type: defined in an XML schema; cannot be directly used in an XML document; can be the concrete type or the derivation base type for an XML element type or for another XML complex type; ultimately defines constraints for an XML element on its XML attribute specifications and/or its XML content

NOTE: See [5], [6] and [7].

XML element type: declared by an XML schema; can be directly used in an XML document; as the concrete type of an XML element, directly or indirectly defines constraints on its XML attribute specifications and/or its XML content; can also be the concrete type or the derivation base type for another XML element type

NOTE: See [5], [6] and [7].

3.2 Abbreviations

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

AAM	Advanced Alarm Management
AAMRule	Advanced Alarm Management Rule
CM	Configuration Management
EM	Element Manager
IOC	Information Object Class
IRP	Integration Reference Point
IS	Information Service
Itf-N	Interface N
MIB	Management Information Base
NE	Network Element
XML	eXtensible Markup Language

4 AAM IRP XML Definitions

4.1 AAM IRP notifications XML definition structure

Currently there are no AAM IRP notifications defined in 3GPP TS 32.122 [3].

4.2 AAM IRP XML Schema for notifications

Currently there are no AAM IRP notifications defined in 3GPP TS 32.122 [3].

4.3 AAM IRP XML Schema for IOCs

```
<?xml version="1.0" encoding="UTF-8"?>
<!--
    3GPP TS 32.125 AAMIRP IOC XML Schema
    aamIRPIOCs.xsd
-->
<schema xmlns:xaa="http://www.3gpp.org/ftp/specs/archive/32_series/32.125#aamIRPIOCs"
xmlns="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://www.3gpp.org/ftp/specs/archive/32_series/32.125#aamIRPIOCs"
elementFormDefault="qualified" attributeFormDefault="unqualified">
    <simpleType name="AdvancedAlarmManagementRuleIdentifier">
        <restriction base="string">
            <length value=”64”>
        </restriction>
    </simpleType>
    <simpleType name="AdvancedAlarmManagementRuleType">
        <restriction base="string">
            <enumeration value="THRESHOLD_RULE"/>
```

```
            <enumeration value="TRANSIENT_RULE"/>
            <enumeration value="TOGGLE_RULE"/>
            <enumeration value="VENDOR_SPECIFIC_RULE"/>
        </restriction>
    </simpleType>
    <simpleType name="TimeSpan">
        <restriction base="string">
            <length value=”3”>
        </restriction>
    </simpleType>
    <complexType name="AAMRuleParameterListForTransientRule">
        <sequence>
            <element name="TimeSpan" type="xaa:TimeSpan"/>
        </ sequence >
    </complexType>
    <simpleType name="AlarmOccurenceThreshold">
        <restriction base="string">
            <length value=”3”>
        </restriction>
    </simpleType>
    <simpleType name="SlidingTimeWindow">
        <restriction base="string">
            <length value=”3”>
        </restriction>
    </simpleType>
    <complexType name="AAMRuleParameterListForThresholdRule">
        <sequence>
            <element name="AlarmOccurenceThreshold" type="xaa:AlarmOccurenceThreshold"/>
            <element name="SlidingTimeWindow" type="xaa:SlidingTimeWindow"/>
        </ sequence >
    </complexType>
    <complexType name="AAMRuleParameterListForToggleRule">
        <sequence>
            <element name="AlarmOccurenceThreshold" type="xaa:AlarmOccurenceThreshold"/>
            <element name="SlidingTimeWindowTogglingStarted" type="xaa:SlidingTimeWindow"/>
            <element name="SlidingTimeWindowTogglingSettled" type="xaa:SlidingTimeWindow"/>
        </ sequence >
    </complexType>
    <simpleType name="VendorSpecificParameterIdentifier">
        <restriction base="string">
            <length value=”64”>
        </restriction>
    <simpleType name="VendorSpecificParameterValue">
        <restriction base="string">
            <length value=”64”>
        </restriction>
    <complexType name="VendorSpecificParameter">
        <sequence>
            <element name="VendorSpecificParameterIdentifier"
type="xaa:VendorSpecificParameterIdentifier"/>
            <element name="VendorSpecificParameterValue" type="xaa:VendorSpecificParameterValue"/>
        </ sequence >
    </complexType>
    <complexType name="AAMRuleParameterListForVendorSpecificRule">
        <sequence>
            <element name="VendorSpecificParameter" type="xaa:VendorSpecificParameter"
maxOccurs="unbounded"/>
        </ sequence >
    </complexType>
    <complexType name="AdvancedAlarmManagementRuleParameterList">
        <choice>
            <element name="AAMRuleParameterListForTransientRule"
type="xaa:AAMRuleParameterListForTransientRule"/>
            <element name="AAMRuleParameterListForThresholdRule"
type="xaa:AAMRuleParameterListForThresholdRule"/>
            <element name="AAMRuleParameterListForToggleRule"
type="xaa:AAMRuleParameterListForToggleRule"/>
            <element name="AAMRuleParameterListForVendorSpecificRule"
type="xaa:AAMRuleParameterListForVendorSpecificRule"/>
        </choice>
    </complexType>
    <simpleType name="Filter">
        <restriction base="string">
            <length value=”256”>
        </restriction>
    </simpleType>
    <!-- Attributes of the advancedAlarmManagementRule IOC -->
```

```
    <element name="advancedAlarmManagementRuleIdentifier"
type="xaa:AdvancedAlarmManagementRuleIdentifier"/>
    <element name="advancedAlarmManagementRuleType" type="xaa:AdvancedAlarmManagementRuleType"/>
    <element name="advancedAlarmManagementRuleParameterList"
type="xaa:AdvancedAlarmManagementRuleParameterList"/>
    <element name="filter" type="xaa:Filter"/>
</schema>
```

Annex A (informative): XML schema electronic files

The electronic files corresponding to the XML schemas defined in the present document are available in native form in the following archive:

http://www.3gpp.org/ftp/specs/archive/32_series/32125/schema/32125-800-XMLSchema.zip

Annex B (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Dec 2009	SA5#68	SP-090733	--	--	Presentation to SA for information and approval	--	1.0.0
Dec 2009	--	--	--	--	Publication of SA-approved version	1.0.0	8.0.0

History

Document history		
V8.0.0	April 2010	Publication