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Technical Specification

Digital cellular telecommunications system (Phase 2+);
Universal Mobile Telecommunications System (UMTS);
Telecommunication management;
Performance Management (PM)
Integration Reference Point (IRP);
eXtensible Markup Language (XML) definitions
(3GPP TS 32.415 version 7.0.1 Release 7)

GLOBAL SYSTEM FOR MOBILE COMMUNICATIONS

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Foreword

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The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under http://webapp.etsi.org/key/queryform.asp.

Contents

Foreword

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

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Version x.y.z

where:

x   the first digit:

1   presented to TSG for information;

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y   the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

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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:

32.411:   "Performance Management (PM) Integration Reference Point (IRP): Requirements"

32.412:   "Performance Management (PM) Integration Reference Point (IRP): Information Service (IS)"

32.413:   "Performance Management (PM) Integration Reference Point (IRP): Common Object Request Broker Architecture (CORBA) Solution Set (SS)"

32.415   "Performance Management (PM) Integration Reference Point (IRP): eXtensible Markup Language (XML) definitions"

The present document is part of a set of TSs which describes the requirements and information model necessary for the Telecommunication Management (TM) of 3G systems. The TM principles and TM architecture are specified in 3GPP TS 32.101 [1] and 3GPP TS 32.102 [2].

A 3G system is composed of a multitude of Network Elements (NE) of various types and, typically, different vendors, which inter-operate in a co-ordinated manner in order to satisfy the network users' communication requirements. Any evaluation of PLMN-system behaviour will require performance data collected and recorded by its NEs according to a schedule established by the EM.

This aspect of the management environment is termed Performance Management. The purpose of any Performance Management activity is to collect performance related data, which can be used to locate potential problems in the network.

1 Scope

The present document specifies the XML definitions for the Performance Management (PM) Integration Reference Point (IRP) as it applies to Itf-N, in accordance with PM IRP IS definitions in 3GPP TS 32.412 [3] as well as Notification Log IRP XML definitions in 3GPP TS 32.335 [4].

This specification is related to 3GPP TS 32.412 V7.0.X.

2 References

The following documents contain provisions which, 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 32.101: "Telecommunication management; Principles and high level requirements".

[2]   3GPP TS 32.102: "Telecommunication management; Architecture".

[3]   3GPP TS 32.412: "Performance Management (PM) Integration Reference Point (IRP): Information Service (IS)".

[4]   3GPP TS 32.335: "Telecommunication management; Notification Log (NL) Integration Reference Point (IRP): eXtensible Markup Language (XML) solution definitions".

[5]   3GPP TS 32.331: "Telecommunication management; Notification Log (NL) Integration Reference Point (IRP): Requirements".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TS 32.101 [1], 3GPP TS 32.102 [2], and 3GPP TS 32.331 [5] apply.

3.2 Abbreviations

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

IRP   Integration Reference Point
IS   Information Service
NL   Notification Log
PM   Performance Management
PMIRP   Performance Management Integration Reference Point
XML   eXtensible Markup Language

4 PM IRP XML Definitions

4.1 PM IRP XML Definitions

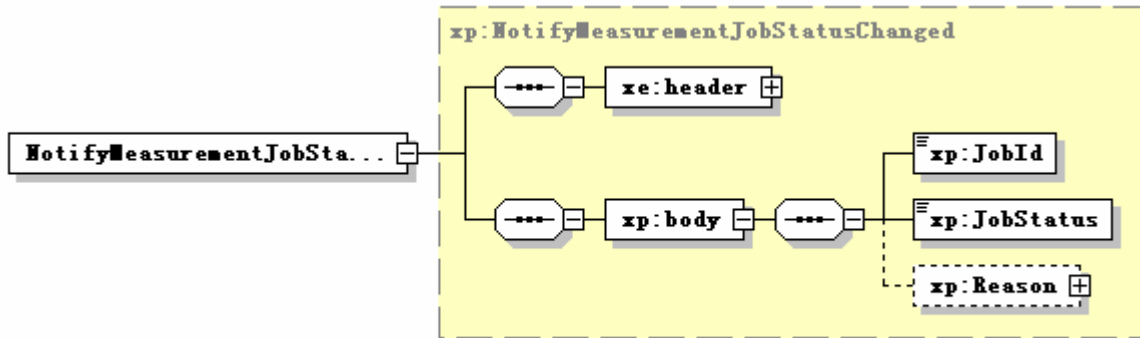This section provides XML definitions of PM IRP notifications as defined in 3GPP TS 32.412 [3].

Figure 4.1.1

Figure 4.1.2

Figure 4.1.3

Figure 4.1.4

4.2 PM IRP XML Schema

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
    3GPP TS 32.415 PMIRP Notification XML Schema
    pMIRPNotif.xsd
-->
<schema xmlns:xp="http://www.3gpp.org/ftp/specs/archive/32_series/32.415#pMIRPNotif"
xmlns:xe="http://www.3gpp.org/ftp/specs/archive/32_series/32.305#notification"
xmlns:xa="http://www.3gpp.org/ftp/specs/archive/32_series/32.111-5#alarmIRPNotif"
xmlns="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://www.3gpp.org/ftp/specs/archive/32_series/32.415#pMIRPNotif"
elementFormDefault="qualified" attributeFormDefault="unqualified">
    <import namespace="http://www.3gpp.org/ftp/specs/archive/32_series/32.305#notification"/>
    <import namespace="http://www.3gpp.org/ftp/specs/archive/32_series/32.111-5#alarmIRPNotif"/>
    <simpleType name="JobId">
        <restriction base="string">
            <minLength value="1"/>
        </restriction>
    </simpleType>
    <simpleType name="JobStatus">
        <restriction base="string">
            <enumeration value="Scheduled"/>
            <enumeration value="Active"/>
            <enumeration value="Suspended"/>
            <enumeration value="Stopped"/>
        </restriction>
    </simpleType>
    <simpleType name="JobStatusChangedReason">
        <restriction base="string">
            <enumeration value="failToReadMeasurementTypesForExtendedProlongPeriod"/>
            <enumeration value="internalProblem"/>
            <enumeration value="stopMeasurementJob"/>
            <enumeration value="stopTimeReached"/>
            <enumeration value="resumeMeasurementJob"/>
            <enumeration value="suspendMeasurementJob"/>
            <enumeration value="startTimeReached"/>
            <enumeration value="suspendMeasurementJobBySystem"/>
        </restriction>
    </simpleType>
    <complexType name="JobStatusChangedReasons">
        <sequence>
            <element name="Reason" type="xp:JobStatusChangedReason" maxOccurs="unbounded"/>
        </sequence>
    </complexType>
    <simpleType name="MonitorStatusChangedReason">
        <restriction base="string">
            <enumeration value="ResumeThresholdMonitor"/>
            <enumeration value="SuspendThresholdMonitor"/>
        </restriction>
    </simpleType>
    <complexType name="MonitorStatusChangedReasons">
        <sequence>
            <element name="Reason" type="xp:MonitorStatusChangedReason" maxOccurs="unbounded"/>
        </sequence>
    </complexType>
    <simpleType name="MonitorId">
        <restriction base="string">
            <minLength value="1"/>
        </restriction>
    </simpleType>
    <simpleType name="MonitorGranularityPeriod">
        <restriction base="string">
            <enumeration value="5 Minutes"/>
            <enumeration value="15 Minutes"/>
            <enumeration value="30 Minutes"/>
            <enumeration value="1 Hour"/>
            <enumeration value="12 Hours"/>
            <enumeration value="24 Hours"/>
        </restriction>
    </simpleType>
    <simpleType name="QoSEventType">
        <restriction base="xa:EventType">
            <enumeration value="Quality Of Service Alarm"/>
        </restriction>
    </simpleType>
```
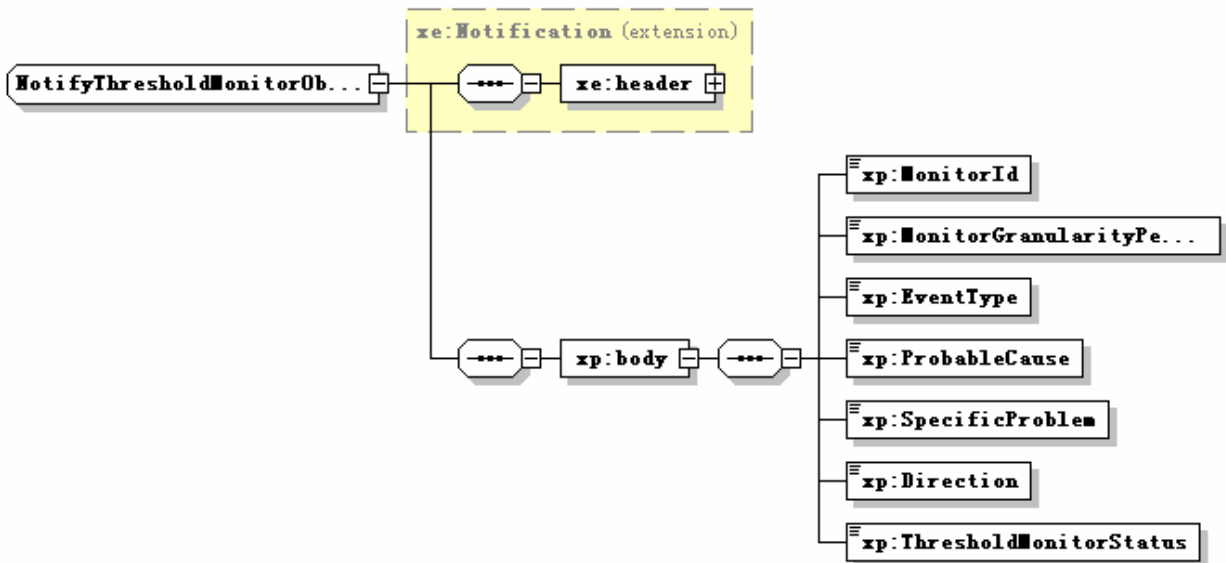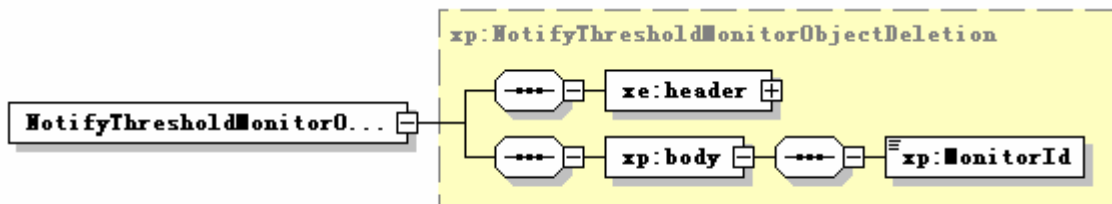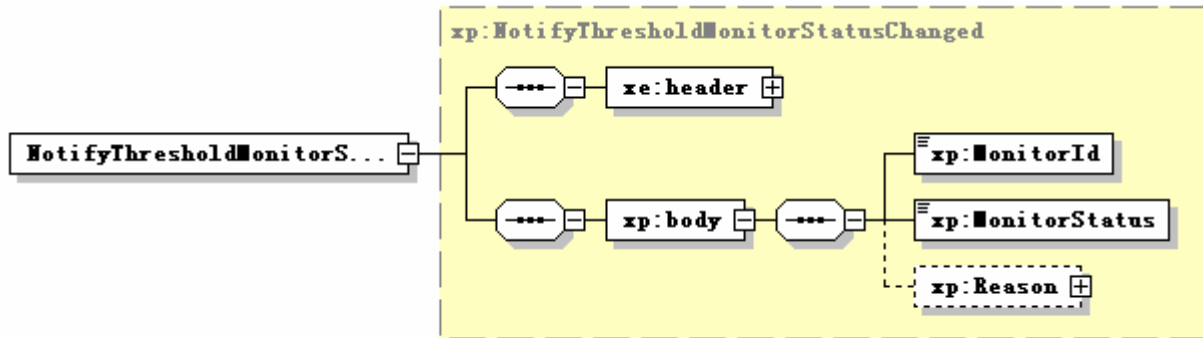
```
<simpleType name="TcProbableCause">
    <restriction base="xa:ProbableCause">
        <enumeration value="Threshold Crossed"/>
    </restriction>
</simpleType>
<simpleType name="SpecificProblem">
    <restriction base="string"/>
</simpleType>
<simpleType name="Direction">
    <restriction base="string">
        <enumeration value="Increasing"/>
        <enumeration value="Decreasing"/>
    </restriction>
</simpleType>
<simpleType name="ThresholdMonitorStatus">
    <restriction base="string">
        <enumeration value="Active"/>
        <enumeration value="Suspended"/>
    </restriction>
</simpleType>
<complexType name="NotifyMeasurementJobStatusChanged">
    <complexContent>
        <extension base="xe:Notification">
            <sequence>
                <element name="body">
                    <complexType>
                        <sequence>
                            <element name="JobId" type="xp:JobId"/>
                            <element name="JobStatus" type="xp:JobStatus"/>
                            <element name="Reason" type="xp:JobStatusChangedReasons"
minOccurs="0"/>
                        </sequence>
                    </complexType>
                </element>
            </sequence>
        </extension>
    </complexContent>
</complexType>
<complexType name="NotifyThresholdMonitorObjectCreation">
    <complexContent>
        <extension base="xe:Notification">
            <sequence>
                <element name="body">
                    <complexType>
                        <sequence>
                            <element name="MonitorId" type="xp:MonitorId"/>
                            <element name="MonitorGranularityPeriod"
type="xp:MonitorGranularityPeriod"/>
                            <element name="EventType" type="xp:QoSEventType"/>
                            <element name="ProbableCause" type="xp:TcProbableCause"/>
                            <element name="SpecificProblem" type="xp:SpecificProblem"/>
                            <element name="Direction" type="xp:Direction"/>
                            <element name="ThresholdMonitorStatus"
type="xp:ThresholdMonitorStatus"/>
                        </sequence>
                    </complexType>
                </element>
            </sequence>
        </extension>
    </complexContent>
</complexType>
<complexType name="NotifyThresholdMonitorObjectDeletion">
    <complexContent>
        <extension base="xe:Notification">
            <sequence>
                <element name="body">
                    <complexType>
                        <sequence>
                            <element name="MonitorId" type="xp:MonitorId"/>
                        </sequence>
                    </complexType>
                </element>
            </sequence>
        </extension>
    </complexContent>
</complexType>
<complexType name="NotifyThresholdMonitorStatusChanged">
    <complexContent>
```

```
                <extension base="xe:Notification">
                    <sequence>
                        <element name="body">
                            <complexType>
                                <sequence>
                                    <element name="MonitorId" type="xp:MonitorId"/>
                                    <element name="MonitorStatus" type="xp:ThresholdMonitorStatus"/>
                                    <element name="Reason" type="xp:MonitorStatusChangedReasons"
minOccurs="0"/>
                                </sequence>
                            </complexType>
                        </element>
                    </sequence>
                </extension>
            </complexContent>
    </complexType>
    <element name="NotifyMeasurementJobStatusChanged" type="xp:NotifyMeasurementJobStatusChanged"/>
    <element name="NotifyThresholdMonitorObjectCreation"
type="xp:NotifyThresholdMonitorObjectCreation"/>
    <element name="NotifyThresholdMonitorObjectDeletion"
type="xp:NotifyThresholdMonitorObjectDeletion"/>
    <element name="NotifyThresholdMonitorStatusChanged"
type="xp:NotifyThresholdMonitorStatusChanged"/>
</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/32415/schema/32415-700-XMLSchema.zip

Annex B (informative): Change history

<table>
<tr><th colspan="9">Change history</th></tr>
<tr><th>Date</th><th>TSG #</th><th>TSG Doc.</th><th>CR</th><th>Rev</th><th>Subject/Comment</th><th>Cat</th><th>Old</th><th>New</th></tr>
<tr><td>Mar 2007</td><td>SA_35</td><td>SP-070073</td><td>--</td><td>--</td><td>Submitted to TSG SA#35 for Approval</td><td>--</td><td>1.0.0</td><td>7.0.0</td></tr>
<tr><td>Jun 2007</td><td>SA_36</td><td>--</td><td>--</td><td>--</td><td>Deleted reference to CMIP SS, discontinued from R7 onwards.</td><td>--</td><td>7.0.0</td><td>7.0.1</td></tr>
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History

Document history		
V7.0.1	June 2007	Publication