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Technical Specification

**Universal Mobile Telecommunications System (UMTS);
LTE;
Telecommunication management;
Communication Surveillance (CS)
Integration Reference Point (IRP)
(3GPP TS 32.355 version 8.0.0 Release 8)**



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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

where:

- 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:

- 32.351: "Communication Surveillance (CS) Integration Reference Point (IRP): Requirements".
- 32.352: "Communication Surveillance (CS) Integration Reference Point (IRP): Information Service (IS)".
- 32.353: "Communication Surveillance (CS) Integration Reference Point (IRP): Common Object Request Broker Architecture (CORBA) Solution Set (SS)".
- 32.355: "Communication Surveillance (CS) Integration Reference Point (IRP): eXtensible Markup Language (XML) definitions".**

The present document is part of a TS-family defining the Telecommunication Management (TM) of 3G systems.

The TM principles are described in 3GPP TS 32.101 [1]. The TM architecture is described in 3GPP TS 32.102 [2].

The other specifications define the interface (Itf-N) between the managing system (manager), which is in general the Network Manager (NM) and the managed system (agent), which is either an Element Manager (EM) or the managed NE itself. The Itf-N is composed of a number of Integration Reference Points (IRPs) defining the information in the agent that is visible for the manager, the operations that the manager may perform on this information and the notifications that are sent from the agent to the manager. Communication Surveillance IRP (CSIRP) is one of these IRPs with special function.

To ensure the availability and reliability of the management, an automatic surveillance of the communication between NM and the managed system are required. CSIRP is defined as a capability to achieve this goal.

1 Scope

The present document specifies the XML Definitions for the Communication Surveillance IRP (CSIRP) as it applies to Itf-N, in accordance with CS IRP IS definitions [3], for usage with the Notification Log IRP XML Definitions [4].

This specification is related to 3GPP TS 32.352 V8.0.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 32.352: "Communication Surveillance(CS) 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:

| | |
|-------|--------------------------------|
| CS | Communication Surveillance |
| CSIRP | Communication Surveillance IRP |
| IRP | Integration Reference Point |
| IS | Information Service |
| NL | Notification Log |
| NRM | Network Resource Model |
| UML | Unified Modelling Language |
| XML | eXtensible Markup Language |

4 CS IRP XML Definitions

4.1 CS IRP notifications XML definition structure

This section provides XML definitions of CS IRP notifications as defined in 3GPP TS 32.352 [3].

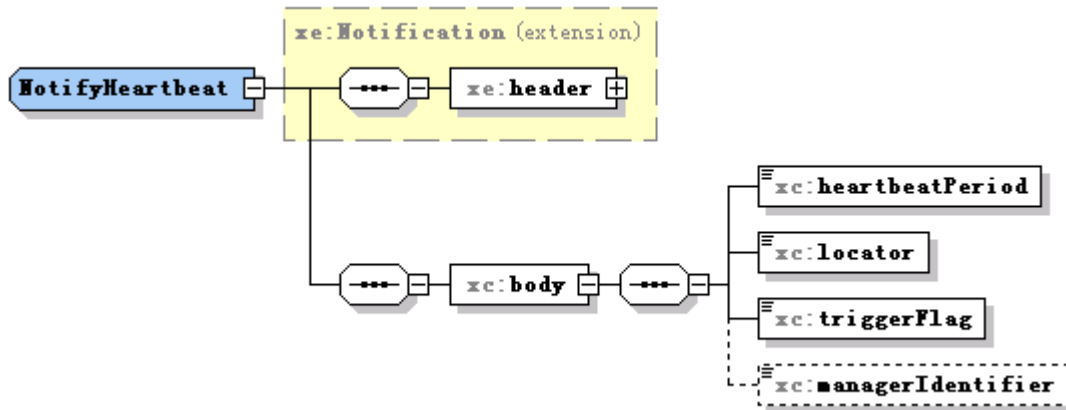


Figure 1

NOTE: The use of XML schema key word "sequence" to support IS-defined set (not sequence) is for the purpose of XML processor efficiency. This shall not imply the use of "sequence" in other technology.

4.2 CS IRP XML Schema for notifications

```

<?xml version="1.0" encoding="UTF-8"?>
<!--
  3GPP TS 32.355 CSIRP Notification XML Schema
  cSIRPNotif.xsd
-->
<schema xmlns:xc="http://www.3gpp.org/ftp/specs/archive/32_series/32.355#cSIRPNotif"
  xmlns:xci="http://www.3gpp.org/ftp/specs/archive/32_series/32.355#cSIRPIOCs"
  xmlns:xe="http://www.3gpp.org/ftp/specs/archive/32_series/32.305#notification"
  xmlns="http://www.w3.org/2001/XMLSchema"
  targetNamespace="http://www.3gpp.org/ftp/specs/archive/32_series/32.355#cSIRPNotif"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <import namespace="http://www.3gpp.org/ftp/specs/archive/32_series/32.355#cSIRPIOCs"/>
  <import namespace="http://www.3gpp.org/ftp/specs/archive/32_series/32.305#notification"/>
  <simpleType name="TriggerFlag">
    <restriction base="string">
      <enumeration value="IRPManager"/>
      <enumeration value="IRPAgent"/>
    </restriction>
  </simpleType>
  <complexType name="NotifyHeartbeat">
    <complexContent>
      <extension base="xe:Notification">
        <sequence>
          <element name="body">
            <complexType>
              <sequence>
                <element name="heartbeatPeriod" type="xci:HeartbeatPeriod"/>
                <element name="locator" type="string"/>
                <element name="triggerFlag" type="xc:TriggerFlag"/>
                <element name="managerIdentifier" type="string" minOccurs="0"/>
              </sequence>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</schema>

```

```
        </complexContent>
    </complexType>
    <element name="NotifyHeartbeat" type="xc:NotifyHeartbeat"/>
</schema>
```

4.3 CS IRP XML Schema for IOCs

```
<?xml version="1.0" encoding="UTF-8"?>
<!--
3GPP TS 32.355 CSIRP Notification XML Schema
cSIRPIOCs.xsd
-->
<schema xmlns:xci="http://www.3gpp.org/ftp/specs/archive/32_series/32.355#cSIRPIOCs"
xmlns:xe="http://www.3gpp.org/ftp/specs/archive/32_series/32.305#notification"
xmlns="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://www.3gpp.org/ftp/specs/archive/32_series/32.355#cSIRPIOCs"
elementFormDefault="qualified" attributeFormDefault="unqualified">
    <simpleType name="HeartbeatPeriod">
        <restriction base="unsignedLong">
            <fractionDigits value="0"/>
            <minInclusive value="5"/>
            <maxInclusive value="60"/>
        </restriction>
    </simpleType>
    <simpleType name="CountDownTimer">
        <restriction base="unsignedLong">
            <maxInclusive value="60"/>
        </restriction>
    </simpleType>
    <!-- attributes of the CSIRP IOC -->
    <element name="heartbeatPeriod" type="xci:HeartbeatPeriod"/>
    <element name="countDownTimer" type="xci:CountDownTimer"/>
</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/32355/schema/32355-800-XMLSchema.zip

Annex B (informative): Change history

| Change history | | | | | | | | |
|----------------|-------|-----------|----|-----|---|-----|-------|-------|
| Date | TSG # | TSG Doc. | CR | Rev | Subject/Comment | Cat | Old | New |
| 2009-12 | SA#46 | SP-090734 | -- | -- | Presentation to SA for Information and Approval | -- | --- | 1.0.0 |
| 2009-12 | -- | -- | -- | -- | Publication of approved version | -- | 1.0.0 | 8.0.0 |

History

| Document history | | |
|-------------------------|---------------|-------------|
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