

3GPP TS 32.350 V1.0.0 (2003-09)

Technical Report

3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Telecommunication management; Communication Surveillance (CS): Requirements; (Release 6)



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Keywords

communication surveillance, requirement

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Foreword

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

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

- TS 32.351:** "Requirements";
- TS 32.352: "Information Service (IS)";
- TS 32.353: "Common Object Request Broker Architecture (CORBA) Solution Set (SS)";
- TS 32.354: "Common Management Information Protocol (CMIP) Solution Set (SS)".

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- 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 set of technical specifications 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.

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

1 Scope

The present document describes the requirements of the Communication Surveillance.

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] ITU-T Recommendation X.734: "Information technology - Open Systems Interconnection - Systems Management: Event report management function".
 - [4] 3GPP TS 32.301: "Telecommunication management; Configuration Management (CM); Notification Integration Reference Point (IRP): Requirements".
-

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions in 3GPP TS 32.101 and 3GPP TS 32.102 and the following apply:

communication surveillance: capability to monitor the communication between NM and managed system and to discover their breaks as early as possible.

communication link: facility, which supports the communication between NM and IRP Agent(s) in managed system, including all the resources required for this communication.

notification distribution service: in managed system, provides notification controlling and forwarding functions ITU-T Recommendation X.734 [3].

Element Manager (EM): see 3GPP TS 32.101 [1].

IRP Agent: see 3GPP TS 32.102 [2].

IRP Manager: see 3GPP TS 32.102 [2].

Network Manager (NM): see 3GPP TS 32.101 [1].

managed system: provides a package of IRPs, these IRPs include Notification IRP (notification distribution service) and other IRPs.

3.2 Abbreviations

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

CS	Communication Surveillance
EM	Element Manger
IRP	Integration Reference Point
NE	Network Element
NM	Network Manager

4 Communication Surveillance (CS) requirements

4.1 General

The communication between NM and Managed System (NE or EM) shall be monitored and link breaks shall be discovered by NM as early as possible.

In this (CS) context, the NM contains one or more IRPManagers.

Figure 1 illustrates the major components in the CS context.

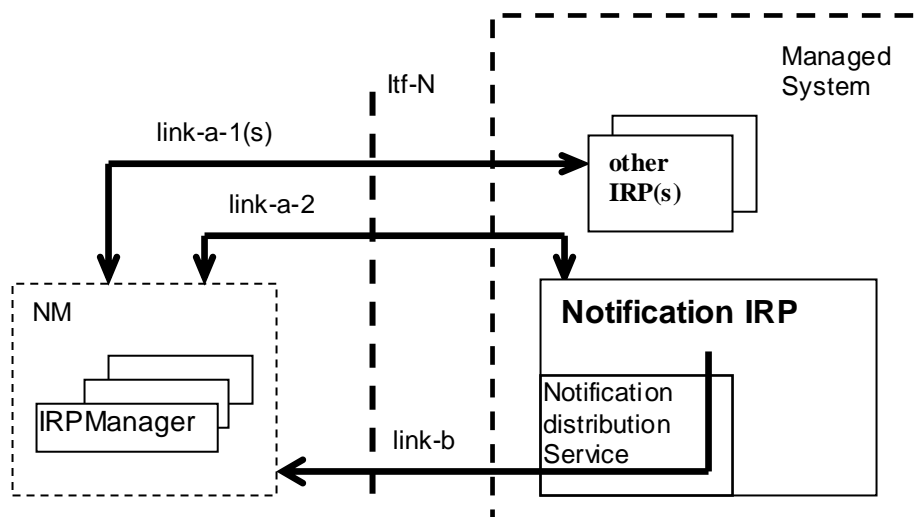


Figure 1 : Communication Surveillance Context

Referring to the above figure, the CS monitors the communication between NM entity and EM (or NE) entity at application level. At this application level, there are three parts involved, which are NM, Managed System and the Communication Link(s) between them. From NM side, to monitor the communication, is to know whether the other entity and/or the Communication Link(s) between them are functioning correctly. NM can detect whether link-a-1 or link-a-2 is functioning correctly by observing the operation responses.

The Managed System shall provide a service allowing NM to detect promptly whether link-b (including Notification Distribution Service) and NotificationIRP TS 32.301 [4] are functioning correctly regarding notification sending.

4.2 Communication Surveillance Management features

The Itf-N between IRPManagers (of the NM) and managed system can include the following Communication Surveillance Management features.

4.2.1 Communication Surveillance Features from NM perspective

4.2.1.1 Query Communication Surveillance information

This feature allows the NM to query the Communication Surveillance information from the managed system. NM can query information of Communication Surveillance, including:

- Timing of Communication Surveillance notifications.

4.2.1.2 Modify Communication Surveillance information

This feature allows the NM to modify the Communication Surveillance information from the managed system, including:

- Timing of the Communication Surveillance notifications.

4.2.1.3 Emission of Communication Surveillance notifications

This feature allows the managed system to send Communication Surveillance notifications to the NM.

Managed system will emit Communication Surveillance notifications to NM according to the specified timing

4.2.1.4 Trigger Communication Surveillance notification

The timing of the Communication Surveillance notifications may not be short for payload consideration. In case NM suspects the link breaks before receiving next Communication Surveillance notifications and needs to make decision at once, this complementary feature allows NM to ask managed system to send Communication Surveillance notifications to the triggering NM immediately.

The triggered Communication Surveillance notification shall be emitted only to the triggering NM. In this Communication Surveillance notification, additional description will be given to help NM distinguish it from spontaneous Communication Surveillance notifications described in clause 4.2.1.3. This feature has no impact on the spontaneous Communication Surveillance heartbeat notification feature.

Annex A (informative): Change history

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
Sep 2003	S_21	SP-030422	--	--	Submitted to TSG SA#21 for Information	1.0.0	