Technical Specification Group Services and System Aspects
Meeting #20, Hämeenlinna, FINLAND, 09 - 12 June 2003

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Source:	**SA5 (Telecom Management)**
Title:	**Rel-6 32.411-200 (Performance Management (PM) Integration Reference Point (IRP): Requirements) - for Approval**
Document for:	**Approval**
Agenda Item:	**7.5.3**

Presentation of Technical Specification to TSG SA

Presentation to:	**TSG SA Meeting #20**
Document for presentation:	**TS 32.411, Version 2.0.0**
Presented for:	**Approval**

Abstract of document:
This is a Technical Specification on the Performance Management Integration Reference Point Requirements for 3GPP Release 6.

The new Performance Management IRP is intended for Release 6 and consists of a Requirements specification (32.411; Stage 1), an Information service specification (32.412; Stage 2) and one or two Stage 3 solution set specifications (32.413 CORBA or 32.414 CMIP).

The purpose of those specifications is to provide the essential Performance Management (PM) capabilities for measurement job administration, performance alarm handling and management of measurement file transfer over the Itf-N.

The work is done against the WID contained in SP-020499 (Work Item ID: OAM-PM), approved in SA#17.

Changes since last presentation to TSG-SA Meeting #17:
Information service (Stage 2) is now available, and is submitted for information to SA#20 (SP-030295).

CORBA solution set (Stage 3) draft specification is now available, but still needs discussion in SA5.

Optional/Mandatory statements have been moved to PM IRP Information Service (32.412; Stage 2).

Outstanding Issues:
Further minor alignments with the Generic File Transfer IRP might be required.

Contentious Issues:
None.

3GPP TS 32.411 V2.0.0 (2003-06)

Technical Specification

3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Telecommunication management; Performance Management (PM) Integration Reference Point (IRP): Requirements (Release 6)

Keywords
Performance Management

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Foreword

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

The present document is part the 32.41x-series covering the 3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Telecommunication Management; Performance Management (PM) Integration Reference Point (IRP), as identified below:

32.411 "Requirements";

32.412 "Information service";

32.413 "Common Object Request Broker Architecture (CORBA) solution set".

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 set of TSs which describe 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 [2] and 3GPP TS 32.102 [3].

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 overall requirements for the Performance Management Integration Reference Point (PM IRP) as it applies to the Network Elements (NE), Element Manager (EM) and Network Manager (NM).

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 32.6xx: "Telecommunication management; Configuration Management (CM)".

[2] 3GPP TS 32.101: "Telecommunication management; Principles and high level requirements".

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

[4] 3GPP TS 32.401: "Telecommunication management; Performance Management (PM); Concept and requirements".

[5] 3GPP TS 32.111-x: "Telecommunication management; Fault Management; Parts 2-4: Alarm Integration Reference Point (IRP)".

[6] 3GPP TS 32.30x: "Telecommunication management; Configuration Management (CM); Notification Integration Reference Point (IRP)".

3 Definitions and abbreviations

3.1 Definitions

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

alarm notification: notification used to inform the recipient about the occurrence of an alarm

event: generic term for any type of occurrence within a network entity
A notification or event report may be used to inform one or more OS(s) about the occurrence of the event

granularity period: the time between the initiation of two successive gatherings of measurement data

measurement job: task for collecting performance measurements

measurement schedule: specifies the time frames during which the measurement job will be active. The measurement schedule contains one or several recording intervals

recording interval: the time period during which the measurement data is collected within the NE. The length of a recording interval will be a multiple of the granularity period

3.2 Abbreviations

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

CM	Configuration Management
EM	Element Manager
ETSI	European Telecommunications Standards Institute
IRP	Integration Reference Point
Itf-N	management Interface between the Network and the Network Manager
NE	Network Element
NM	Network Manager
NRM	Network Resource Model
OS	Operations System
PM	Performance Management

4 Performance Management concept and requirements

Refer to 3GPP TS 32.401 [4].

5 Detailed requirements

5.1 Overall PM concept of Itf-N

An operations system on the network management layer (i.e. the NM) provides performance management services and functions required by the 3G operator on top of the element management layer.

The N interface (Itf-N) may connect the Network Management system either to Element Managers (EMs) or directly to the Network Elements (NEs). This is done by means of Integration Reference Points (IRPs). In the following, the term "subordinate entities" defines either EMs or NEs, which are in charge of supporting the N interface.

This clause describes the properties of an interface enabling a NM to supervise a 3G-telecommunication network including - if necessary - the managing EMs. To provide to the NM the Performance Management capability for the network implies that the NM and the subordinate entities have to agree on the following:

- The identification of the performance measurements for each relevant network resource class, or for instances of a network resource class.
- The identification of the network resource instances whose performance measurements are required by NM.
- The identification of the performance measurement attributes that can serve as a threshold and the identification of the corresponding threshold value(s).
- The identification of the files containing collected performance measurements for retrieval by NM.
- Notification of available files containing collected performance measurements for retrieval by NM.
- The network configuration (due to the fact that measurement results, performance alarms and related state change information are always originated by network resources, see the Configuration Management (CM) NRM IRPs in 3GPP TS 32.6xx [1]). This is, however, not part of the PM functionality.

5.2 Management of network performance measurements

The IRP Manager shall be able to request the IRP Agent to:

- Collect specific performance measurements on specific network resources. The network resources, whose performance measurements are to be managed or collected, must have been modelled by the 3GPP Network Resource IRP or vendor-specific extended NRM and must be visible via the Bulk or Basic CM IRP.
- Collect the performance measurements in a file. The data format of this file shall be specified in the 3GPP defined set of PM Specifications.
- Emit notification announcing the availability of such file(s).
- Create measurement jobs.
- Suspend, Resume, and Stop running measurement jobs.
- Define measurement job schedule, including the definition of the recording interval(s), job start time and job stop time.
- Stop scheduled measurement jobs.
- Report status of the running and scheduled measurement jobs (as response to corresponding queries from the IRP manager).

It is noted that the IRP Agent can only derive or determine the value of a performance measurement at the end of a granularity period (status inspection and discrete event registration). The IRP Agent may also have to reset the value of a performance measurement at the beginning of a granularity period. The above IRP Agent behaviours are dependent on the nature of the performance measurement types (cumulative counter, status inspection, gauge, and discrete event registration).

5.3 Management of threshold-crossing alarms

The IRP Manager shall be able to request the IRP Agent to:

- Set threshold values to specific performance measurements of specific network resources.
- Emit an alarm notification indicating threshold(s) crossing if the threshold value(s) is crossed.

5.4 Management of measurement events

The IRP Manager shall be able to:

- Subscribe to notifications that carry threshold crossing alarms and information on the availability of performance measurement data files.

5.5 Management of measurement files

The IRP Manager shall be able to:

- Manage the transfer of data files containing performance measurement data.
- Request a list of available files, including the specification of filter.

For information:

- The requirements for measurement file management may be satisfied by a separate File Transfer IRP.

6 Overview of IRPs related to Performance Management (PM)

The N interface is built up by a number of IRPs. The basic structure of the IRPs is defined in 3GPP TS 32.101 [2] and 3GPP TS 32.102 [3].

For the purpose of PM the following IRPs are needed:

- Performance Management IRP, i.e. 3GPP TS 32.41x.
- Alarm IRP, see 3GPP TS 32.111-series [5].
- Notification IRP, see 3GPP TS 32.30x [6]3
- File Transfer IRP, see (to be defined).

Annex A (informative): Change history

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
Sep 2002	S_17	SP-020500	--	--	Submitted to TSG SA#17 for Information	1.0.0	
Jun 2003	S_20	SP-030294	--	--	Submitted to TSG SA#20 for Approval	2.0.0	