Synchronous Digital Hierarchy (SDH); Unidirectional performance monitoring for the network element view
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Foreword

This European Standard (EN) has been produced by ETSI Technical Committee Transmission and Multiplexing (TM) of the European Telecommunications Standards Institute (ETSI), and is now submitted for the ETSI standards One-step Approval Procedure.

The present document describes the information model for Network Elements (NEs) for performance monitoring.

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1 Scope

The present document provides an information model for the unidirectional performance monitoring of Synchronous Digital Hierarchy (SDH) network. This model describes the managed object classes and their properties for the performance monitoring function, as defined in ITU-T Recommendation G.784 [3] and as related to SDH Network Elements (NEs). These objects are useful to describe information exchanged across interfaces defined in ITU-T Recommendation M.3010 [5] Telecommunications Management Network (TMN) architecture for the management of the performance monitoring function.

Synchronous Digital Hierarchy (SDH) performance monitoring functions are used to monitor specified performance events of specified termination points managed objects and to report these performance data, as well as quality of service alarms to its managing system according to a given schedule.


The present document defines:

- an information model, as related to the unidirectional performance monitoring function for the SDH.

The present document does not define:

- the protocol stack to be used for message communication;
- the network level management processes;
- the application contexts;
- the conformance requirements to be met by an implementation of this information model;
- information models for other systems or equipment.

The information model defined here (and the corresponding message set) is concerned with the management of NEs, the equipment by which they are implemented and the functions contained within them. More precisely, it applies to an equipment domain visible at the element manager to element interface and is only concerned with information available within that domain. Information proper to the domain of a network level management process is not included within this model.
2 References

References may be made to:

a) specific versions of publications (identified by date of publication, edition number, version number, etc.), in which case, subsequent revisions to the referenced document do not apply; or

b) all versions up to and including the identified version (identified by "up to and including" before the version identity); or

c) all versions subsequent to and including the identified version (identified by "onwards" following the version identity); or

d) publications without mention of a specific version, in which case the latest version applies.

A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.


3 Abbreviations

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

NE Network Element

SDH Synchronous Digital Hierarchy

TMN Telecommunications Management Network

4 Performance monitoring management model

The SDH performance monitoring requirements are described in ITU-T Recommendation G.774.01 [1], clause 5 and in ITU-T Recommendation G.774.06 [2], clause 5.
5 Managed object class definitions

In the context of the present document, the IMPORTS clause specifies the object classes which can be instantiated in the scope of the present document. The IMPORTS clause does not include uninstantiated superclasses.

BEGIN
IMPORTS
  sdhCurrentDataUnidirectional,
  msCurrentDataNearEnd,
  msCurrentDataNearEndTR,
  pathTerminationCurrentDataNearEnd,
  pathTerminationCurrentDataNearEndTR,
  msCurrentDataFarEnd,
  msCurrentDataFarEndTR,
  pathTerminationCurrentDataFarEnd,
  pathTerminationCurrentDataFarEndTR,
  msHistoryDataNearEnd,
  pathTerminationHistoryDataNearEnd,
  msHistoryDataFarEnd,
  pathTerminationHistoryDataFarEnd
FROM {itu-t(0) recommendation(0) g(7) g774(774) hyphen(127) pmUni(06) informationModel(0) managedObjectClass(3) }
;
END

6 Packages

BEGIN
IMPORTS
  nearEndUASCurrentDataPackage,
  farEndUASCurrentDataPackage,
  nearEndUASHistoryDataPackage,
  farEndUASHistoryDataPackage
FROM {itu-t(0) recommendation(0) g(7) g774(774) hyphen(127) pmUni(06) informationModel(0) package(4) }
;
END

7 Attributes

BEGIN
IMPORTS
  nEUAS,
  fEUAS
FROM {itu-t(0) recommendation(0) g(7) g774(774) hyphen(127) pmUni(06) informationModel(0) attribute(7) }
;
END

8 Actions

None.

9 Notifications

None.

10 Parameters

None.
11 Name bindings

BEGIN

IMPORTS

msCurrentDataNearEnd-msTTPSink,
pathTerminationCurrentDataNearEnd-vc4TTPSink,
pathTerminationCurrentDataNearEnd-vc3TTPSink,
pathTerminationCurrentDataNearEnd-vc2TTPSink,
pathTerminationCurrentDataNearEnd-vc12TTPSink,
pathTerminationCurrentDataNearEnd-vc11TTPSink,
pathTerminationCurrentDataNearEndTR-vc4TTPSink,
pathTerminationCurrentDataNearEndTR-vc3TTPSink,
pathTerminationCurrentDataNearEndTR-vc2TTPSink,
pathTerminationCurrentDataNearEndTR-vc12TTPSink,
pathTerminationCurrentDataNearEndTR-vc11TTPSink,
msCurrentDataFarEnd-msTTPSink,
pathTerminationCurrentDataFarEnd-vc4TTPSink,
pathTerminationCurrentDataFarEnd-vc3TTPSink,
pathTerminationCurrentDataFarEnd-vc2TTPSink,
pathTerminationCurrentDataFarEnd-vc12TTPSink,
pathTerminationCurrentDataFarEnd-vc11TTPSink,
pathTerminationCurrentDataFarEndTR-vc4TTPSink,
pathTerminationCurrentDataFarEndTR-vc3TTPSink,
pathTerminationCurrentDataFarEndTR-vc2TTPSink,
pathTerminationCurrentDataFarEndTR-vc12TTPSink,
pathTerminationCurrentDataFarEndTR-vc11TTPSink,
pathTerminationCurrentDataNearEnd-au4SupervisedCTPSink,
pathTerminationCurrentDataNearEnd-au3SupervisedCTPSink,
pathTerminationCurrentDataNearEnd-tu3SupervisedCTPSink,
pathTerminationCurrentDataNearEnd-tu2SupervisedCTPSink,
pathTerminationCurrentDataNearEnd-tu12SupervisedCTPSink,
pathTerminationCurrentDataNearEnd-tu11SupervisedCTPSink,
pathTerminationCurrentDataFarEnd-au4SupervisedCTPSink,
pathTerminationCurrentDataFarEnd-au3SupervisedCTPSink,
pathTerminationCurrentDataFarEnd-tu3SupervisedCTPSink,
pathTerminationCurrentDataFarEnd-tu2SupervisedCTPSink,
pathTerminationCurrentDataFarEnd-tu12SupervisedCTPSink,
pathTerminationCurrentDataFarEnd-tu11SupervisedCTPSink,
pathTerminationCurrentDataNearEndTR-au4SupervisedCTPSink,
pathTerminationCurrentDataNearEnd-au3SupervisedCTPSink,
pathTerminationCurrentDataNearEnd-tu3SupervisedCTPSink,
pathTerminationCurrentDataNearEnd-tu2SupervisedCTPSink,
pathTerminationCurrentDataNearEnd-tu12SupervisedCTPSink,
pathTerminationCurrentDataNearEnd-tu11SupervisedCTPSink,
pathTerminationCurrentDataFarEndTR-au4SupervisedCTPSink,
pathTerminationCurrentDataFarEnd-au3SupervisedCTPSink,
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pathTerminationCurrentDataNearEnd-au3SupervisedCTPSinkR1,
pathTerminationCurrentDataNearEnd-tu3SupervisedCTPSinkR1,
pathTerminationCurrentDataNearEnd-tu2SupervisedCTPSinkR1,
pathTerminationCurrentDataNearEnd-tu12SupervisedCTPSinkR1,
pathTerminationCurrentDataNearEnd-tu11SupervisedCTPSinkR1,
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pathTerminationCurrentDataFarEnd-au3SupervisedCTPSinkR1,
pathTerminationCurrentDataFarEnd-tu3SupervisedCTPSinkR1,
pathTerminationCurrentDataFarEnd-tu2SupervisedCTPSinkR1,
pathTerminationCurrentDataFarEnd-tu12SupervisedCTPSinkR1,
pathTerminationCurrentDataFarEnd-tu11SupervisedCTPSinkR1,
pathTerminationCurrentDataNearEndTR-au4SupervisedCTPSinkR1,
pathTerminationCurrentDataNearEnd-au3SupervisedCTPSinkR1,
pathTerminationCurrentDataNearEnd-tu3SupervisedCTPSinkR1,
pathTerminationCurrentDataNearEnd-tu2SupervisedCTPSinkR1,
pathTerminationCurrentDataNearEnd-tu12SupervisedCTPSinkR1,
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pathTerminationCurrentDataFarEnd-au3SupervisedCTPSinkR1,
pathTerminationCurrentDataFarEnd-tu3SupervisedCTPSinkR1,
pathTerminationCurrentDataFarEnd-tu2SupervisedCTPSinkR1,
pathTerminationCurrentDataFarEnd-tu12SupervisedCTPSinkR1,
pathTerminationCurrentDataFarEnd-tu11SupervisedCTPSinkR1

FROM {itu(0) recommendation(0) g(7) g774(774) hyphen(127) pmUni(06) informationModel(0) nameBinding(6) }

; END
Annex A (informative):
Bibliography

The following material, though not specifically referenced in the body of the present document, gives supporting information.

ITU-T Recommendation G.826 (1993): "Error Performance Parameters and Objectives for International Constant Bit Rate Digital Paths at or above the Primary Rate".
ITU-T Recommendation M.60 (1993): "TMN Terminology".
ITU-T Recommendation X.208 (1990): "Specification of Abstract Syntax Notation One (ASN.1) [17]".
ITU-T Recommendation X.735 (1992): "Log Control Function".
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