



SLOVENSKI STANDARD
SIST ETS 300 304 E1:2003
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Prenos in multipleksiranje (TM) – Informacijski model v sistemu sinhrono digitalne hierarhije (SDH), gledano s strani omrežnega elementa (NE)

Transmission and Multiplexing (TM); Synchronous Digital Hierarchy (SDH) information model for the Network Element (NE) view

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Foreword

This European Telecommunication Standard (ETS) was produced by the Transmission and Multiplexing (TM) Technical Committee of the European Telecommunications Standards Institute (ETSI).

This ETS describes the information model for Network Elements (NEs) which use the Synchronous Digital Hierarchy (SDH) multiplexing structure.

Transposition dates	
Date of latest announcement of this ETS (doa):	28 February 1995
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	31 August 1995
Date of withdrawal of any conflicting National Standard (dow):	31 August 1995

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1 Scope

This European Telecommunication Standard (ETS) defines the information model to be used at the interface between Network Elements (NEs) and management systems, for the management of Synchronous Digital Hierarchy (SDH) NEs.

This ETS defines the information model for SDH NEs.

This ETS 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 NE 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 Normative references

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- <https://standards.iteh.ai/catalog/standards/sist/91e33d89-2f71-44db-932e-bba582a2bf58/sist-ets-300-304-e1-2003>
- [1] CCITT Recommendation X.701 (1992): "Information technology - Open Systems Interconnection - Systems management overview".
- [2] CCITT Recommendation X.710 (1991): "Common management information service definition for CCITT applications".
- [3] CCITT Recommendation X.711 (1991): "Common management information protocol specification for CCITT applications".
- [4] CCITT Recommendation X.731 (1992): "Information technology - Open Systems Interconnection - Systems management: State management function".
- [5] CCITT Recommendation X.730 (1992): "Information technology - Open Systems Interconnection - Systems management: Object management function".
- [6] CCITT Recommendation X.733 (1992): "Information technology - Open Systems Interconnection - Systems management: Alarm reporting function".
- [7] CCITT Recommendation X.734 (1992): "Information technology - Open Systems Interconnection - System management: Event report management function".
- [8] CCITT Recommendation X.735 (1992): "Information technology - Open Systems Interconnection - System management: Log control function".

- [9] CCITT Recommendation X.720 (1992): "Information technology - Open Systems Interconnection - Structure management information - Part 1: Management information model".
- [10] CCITT Recommendation X.721 (1992): "Information technology - Open Systems Interconnection - Structure of management information: Definition of management information".
- [11] CCITT Recommendation X.722 (1992): "Information technology - Open Systems Interconnection - Structure of management information: Guidelines for the definition of managed objects".
- [12] CCITT Recommendation G.774 (1992): "Synchronous Digital Hierarchy management information model".
- [13] Draft ITU-T Recommendation G.774.03: "Synchronous digital hierarchy (SDH) management of multiplex-section protection for the network element view".
- [14] CCITT Recommendation M.3100 (1992): "Generic network information model".

3 Abbreviations

For the purposes of this ETS, the following abbreviations apply:

AIS	Alarm Indication Signal
AP	Access Point
ATM	Asynchronous Transfer Mode
AU	Administrative Unit
AUG	Administrative Unit Group
CMIP	Common Management Information Protocol
CMIS	Common Management Information Service
CP	Connection Point
CTP	Connection Termination Point
GTP	Group Termination Point
HPA	Higher Order Path Adaptation
HPC	Higher Order Path Connection
HPT	Higher Order Path Termination
IA	Indirect Adaptor
IOS	Intra-Office Section
LOF	Loss Of Frame
LPA	Lower Order Path Adaptation
LPC	Lower Order Path Connection
LPT	Lower Order Path Termination
MS	Multiplexer Section
MSA	Multiplexer Section Adaptation
MST	Multiplexer Section Termination
MSTTP	Multiplexer Section Trail Termination Point
NE	Network Element
OS	Operation System
OSI	Open Systems Interconnection
PDH	Plesiochronous Digital Hierarchy
Pkg	Packages
POH	Path Overhead
PPI	Plesiochronous Physical Interface
RDN	Relative Distinguished Name
RS	Regenerator Section
RST	Regenerator Section Termination
RSTTP	Regenerator Section Trail Termination Point
SDH	Synchronous Digital Hierarchy
SDHNE	Synchronous Digital Hierarchy Network Element
Snk	Sink
Src	Source
SPI	Synchronous Physical Interface

STM-N	Synchronous Transport Module N
TMN	Telecommunication Management Network
TP	Termination Point
TTP	Trail Termination Point
TU	Tributary Unit
TUG	Tributary Unit Group
VC-n	Virtual Container n

4 Registration supporting Abstract Syntax Notation one (ASN.1)

```

ETS5 {ccitt(0) identified-organization(4) etsi(0) ets(304) informationModel(0)
asn1Module(2) eTS5(0)}
DEFINITIONS IMPLICIT TAGS ::= BEGIN
-- EXPORTS everything
eTS300304 OBJECT IDENTIFIER ::= {ccitt(0) identified-organization(4) etsi(0) ets(304)
informationModel(0)}
etsObjectClass OBJECT IDENTIFIER ::= {eTS300304 managedObjectClass(3)}
etsNameBinding OBJECT IDENTIFIER ::= {eTS300304 nameBinding(6)}
etsAttribute OBJECT IDENTIFIER ::= {eTS300304 attribute(7)}
etsAction OBJECT IDENTIFIER ::= {eTS300304 action(9)}
etsNotification OBJECT IDENTIFIER ::= {eTS300304 notification(10)}
END

```

5 Generic objects fragment

In this fragment, a working sub-set of standard and mature object classes have been adopted, mainly from the CCITT X.700 series of Recommendations.

5.1 Generic objects - object classes

In this context the IMPORTS section specifies the object classes which can be instantiated in the scope of this ETS. The IMPORTS section does not include uninstantiated superclasses.

```

BEGIN
IMPORTS
alarmRecord,
attributeValueChangeRecord,
eventForwardingDiscriminator,
log,
objectCreationRecord,
objectDeletionRecord,
stateChangeRecord
FROM {joint-iso-ccitt ms(9) smi(3) part2(2) managedObjectClass(3)}

alarmSeverityAssignmentProfile
FROM {ccitt(0) recommendation(0) m(13) m3100(3100) informationModel(0)
managedObjectClass(3)}
;
END

```

5.2 Generic objects - packages, attributes, ASN.1, name-bindings

All packages, attributes, ASN.1 and name-bindings associated with object classes are implicitly imported from CCITT Recommendations defining the appropriate object classes.

6 SDH TP fragment

6.1 SDH TP - object classes

In this context, the IMPORTS section specifies the object classes which can be instantiated in the scope of this ETS. The IMPORTS section does not include uninstantiated superclasses.

```
BEGIN
IMPORTS
au4CTPBidirectional,
au4CTPSink,
au4CTPSource,
augBidirectional,
augSink,
augSource,
electricalSPITTPBidirectional,
electricalSPITTPSink,
electricalSPITTPSource,
msCTPBidirectional,
msCTPSink,
msCTPSource,
msDatacomCTPBidirectional,
msDatacomCTPSink,
msDatacomCTPSource,
msOrderwireCTPBidirectional,
msOrderwireCTPSink,
msOrderwireCTPSource,
msTTPBidirectional,
msTTPSink,
msTTPSource,
opticalSPITTPBidirectional,
opticalSPITTPSink,
opticalSPITTPSource,
rsCTPBidirectional,
rsCTPSink,
rsCTPSource,
rsDatacomCTPBidirectional,
rsDatacomCTPSink,
rsDatacomCTPSource,
rsOrderwireCTPBidirectional,
rsOrderwireCTPSink,
rsOrderwireCTPSource,
rsTTPBidirectional,
rsTTPSink,
rsTTPSource,
rsUserChannelCTPBidirectional,
rsUserChannelCTPSink,
rsUserChannelCTPSource,
tull1CTPBidirectional,
tull1CTPSink,
tull1CTPSource,
tul2CTPBidirectional,
tul2CTPSink,
tul2CTPSource,
tu2CTPBidirectional,
tu2CTPSink,
tu2CTPSource,
tu3CTPBidirectional,
tu3CTPSink,
tu3CTPSource,
tug2Bidirectional,
tug2Sink,
tug2Source,
tug3Bidirectional,
tug3Sink,
tug3Source,
vc11TTPBidirectional,
vc11TTPSink,
vc11TTPSource,
vc12TTPBidirectional,
vc12TTPSink,
vc12TTPSource,
vc2TTPBidirectional,
vc2TTPSink,
vc2TTPSource,
vc3TTPBidirectional,
vc3TTPSink,
vc3TTPSource,
```

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```

vc4TTPBidirectional,
vc4TTPSink,
vc4TTPSource,
vcnUserChannelCTPBidirectional,
vcnUserChannelCTPSink,
vcnUserChannelCTPSource
FROM {ccitt(0) recommendation(0) g(7) g774(774) informationModel(0)
managedObjectClass(3)}
;
END

```

6.2 SDH TP - packages

All packages associated with object classes are implicitly imported from CCITT Recommendations defining the appropriate object classes.

6.3 SDH TP - attributes

All attributes associated with object classes are implicitly imported from CCITT Recommendations defining the appropriate object classes.

supportedByObjectList

The value of the supportedByObjectList attribute points to the equipment and software objects which implement the TPs.

6.4 SDH TP - name bindings

```

BEGIN
IMPORTS
au4CTPBidirectional-augBidirectional,
au4CTPSink-augBidirectional,
au4CTPSink-augSink,
au4CTPSource-augBidirectional,
au4CTPSource-augSource,
augBidirectional-msTTPBidirectional,
augSink-msTTPSink,
augSource-msTTPSource,
electricalSPITTPBidirectional-sdhNE,
electricalSPITTPSink-sdhNE,
electricalSPITTPSource-sdhNE,
msCTPBidirectional-rsTTPBidirectional,
msCTPSink-rsTTPBidirectional,
msCTPSink-rsTTPSink,
msCTPSource-rsTTPBidirectional,
msCTPSource-rsTTPSource,
msDatacomCTPBidirectional-msTTPBidirectional,
msDatacomCTPSink-msTTPBidirectional,
msDatacomCTPSink-msTTPSink,
msDatacomCTPSource-msTTPBidirectional,
msDatacomCTPSource-msTTPSource,
msOrderwireCTPBidirectional-msTTPBidirectional,
msOrderwireCTPSink-msTTPBidirectional,
msOrderwireCTPSink-msTTPSink,
msOrderwireCTPSource-msTTPBidirectional,
msOrderwireCTPSource-msTTPSource,
msTTPBidirectional-sdhNE,
msTTPSink-sdhNE,
msTTPSource-sdhNE,
opticalSPITTPBidirectional-sdhNE,
opticalSPITTPSink-sdhNE,
opticalSPITTPSource-sdhNE,
rsCTPBidirectional-electricalSPITTPBidirectional,
rsCTPBidirectional-opticalSPITTPBidirectional,
rsCTPSink-electricalSPITTPBidirectional,
rsCTPSink-electricalSPITTPSink,
rsCTPSink-opticalSPITTPBidirectional,
rsCTPSink-opticalSPITTPSink,
rsCTPSource-electricalSPITTPBidirectional,
rsCTPSource-electricalSPITTPSource,
rsCTPSource-opticalSPITTPBidirectional,
rsCTPSource-opticalSPITTPSource,
rsDatacomCTPBidirectional-rsTTPBidirectional,
rsDatacomCTPSink-rsTTPBidirectional,
rsDatacomCTPSink-rsTTPSink,

```