



EUROPEAN
TELECOMMUNICATION
STANDARD

DRAFT
pr **ETS 300 371**

April 1996

Second Edition

Source: ETSI TC-TM

Reference: RE/TM-02223

ICS: 33.020

Key words: PDH, NE, model

**Transmission and Multiplexing (TM);
Plesiochronous Digital Hierarchy (PDH) information model
for the Network Element (NE) view**

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Foreword

This draft European Telecommunication Standard (ETS) was produced by the Transmission and Multiplexing (TM) Technical Committee of the European Telecommunications Standards Institute (ETSI), and is now submitted for the Unified Approval Procedure phase of the ETSI standards approval procedure.

This ETS describes the information model for Network Elements (NEs), which use the Plesiochronous Digital Hierarchy (PDH) multiplexing structure.

Proposed transposition dates	
Date of latest announcement of this ETS (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	6 months after doa

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1 Scope

This draft 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 equipment which use the Plesiochronous Digital Hierarchy (PDH).

This ETS defines:

- the information model for network elements using PDH multiplexing, including PDH interfaces of Synchronous Digital Hierarchy (SDH) network elements.

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 in this ETS (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 Normative references

This ETS incorporates, by dated or 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 apply.

- [1] ETS 300 337 (1995): "Transmission and Multiplexing (TM); Generic frame structures for the transport of various signals (including Asynchronous Transfer Mode (ATM) cells and Synchronous Digital Hierarchy (SDH) elements) at the CCITT Recommendation G.702 hierarchical rates of 2 048 kbit/s, 34 368 kbit/s and 139 264 kbit/s".
- [2] ITU-T Recommendation G.702 (1988): "Digital hierarchy bit rates".
- [3] ITU-T Recommendation M.3100 (1992): "Generic network information model".
- [4] ITU-T Recommendation X.721 (1991): "Information technology - Open Systems Interconnection - Structure of management information: Definition of management information".
- [5] ITU-T Recommendation G.707 (1993): "Synchronous Digital Hierarchy bit rates".
- [6] ITU-T Recommendation G.708 (1993): "Network-Node Interface for the synchronous digital hierarchy".
- [7] ITU-T Recommendation G.709 (1993): "Synchronous Multiplexing Structure".
- [8] ITU-T Recommendation M.3010: "Principles for a telecommunication management network".
- [9] ITU-T Recommendation G.783 (1993): "Characteristics of Synchronous Digital Hierarchy (SDH) equipment functional blocks".

- [10] ITU-T Recommendation G.784 (1993): "Synchronous Digital Hierarchy (SDH) Management".
- [11] ITU-T Recommendation X.722 (1992): "Information technology - Open Systems Interconnection - Structure of Management Information: Guidelines for the definition of managed objects".
- [12] ITU-T Recommendation X.208 (1990): "Specification of Abstract Syntax Notation One (ASN.1)".
- [13] ITU-T Recommendation X.720 (1992): "Information technology - Open Systems Interconnection - Structure of management information: Management information model".
- [14] ITU-T Recommendation G.774 (1992): "SDH Management Information Model for the Network Element View".
- [15] ITU-T Recommendation Q.822 (1993): "Stage 1, stage 2 and stage 3 description for the Q3 interface - Performance management".
- [16] ITU-T Recommendation X.701 (1992): "Information technology - Open Systems Interconnection - Systems management overview".
- [17] ITU-T Recommendation X.710 (1991): "Common management information service definition for CCITT applications".
- [18] ITU-T Recommendation X.711 (1991): "Common management information protocol specification for CCITT applications".
- [19] ITU-T Recommendation X.731 (1992): "Information technology - Open Systems Interconnection - Systems Management: State management function".
- [20] ITU-T Recommendation X.730 (1992): "Information technology - Open Systems Interconnection - Systems Management: Object management function".
- [21] ITU-T Recommendation X.733 (1992): "Information technology - Open Systems Interconnection - Systems Management: Alarm reporting function".
- [22] ITU-T Recommendation X.734 (1992): "Information technology - Open Systems Interconnection - Systems Management: Event report management function".
- [23] ITU-T Recommendation X.735 (1992): "Information technology - Open Systems Interconnection - Systems Management: Log control function".
- [24] ITU-T Recommendations G.803: "Architectures of transport networks based on the synchronous digital hierarchy (SDH)".
- [25] ITU-T Recommendation G.773 (1993): "Protocol suites for Q-interfaces for management of transmission systems".
- [26] ITU-T Recommendation Q.811 (1993): "Lower layer protocol profiles for the Q3 interface".
- [27] ITU-T Recommendation Q.812 (1993): "Upper layer protocol profiles for the Q3 interface".
- [28] ITU-T Recommendation M.60 (1993): "Maintenance terminology and definitions".
- [29] ETS 300 304 (1994): "Transmission and Multiplexing (TM); Synchronous Digital Hierarchy (SDH) information model for the Network Element (NE) view".

- [30] ETS 300 371 Edition 1 (1994): "Transmission and Multiplexing (TM); Plesiochronous Digital Hierachcy (PDH) information model for the Network Element (NE) view".
- [31] ITU-T Recommendation G.831 (1993): "Management capabilities of transport networks based on the synchronous digital hierarchy (SDH)".

3 Abbreviations

For the purposes of this ETS, the following symbols and abbreviations apply.

AIS	Alarm Indication Signal
AP	Access Point
ASN.1	Abstract Syntax Notation No. 1
ATM	Asynchronous Transfer Mode
CMIP	Common Management Information Protocol
CMIS	Common Management Information Service
CP	Connection Point
CTP	Connection Termination Point
EBER	Excessive Bit Error Ratio
FERF	Far End Receive Failure
LOF	Loss Of Frame
LOS	Loss Of Signal
NE	Network Element
OS	Operation System
OSI	Open System Interconnection
PDH	Plesiochronous Digital Hierarchy
Pkg	Package
PPA	Plesiochronous Physical Adaptation
PPI	Plesiochronous Physical Interface
PPT	Plesiochronous Physical Termination
RAI	Remote Alarm Indication
RDN	Relative Distinguished Name
SDH	Synchronous Digital Hierarchy
Snk	Sink
Src	Source
STM-N	Synchronous Transport Module N
TMN	Telecommunications Management Network
TP	Termination Point
TTP	Trail Termination Point
VC-n	Virtual Container n

4 Registration supporting Abstract Syntax Notation No. 1 (ASN.1) for ETS 300 371

```
ASN1TypeModule {ccitt(0) identified-organization(4) etsi(0) ets(371) informationModel(0) asn1Module(2)
asn1TypeModule(0)}
```

```
DEFINITIONS IMPLICIT TAGS ::= BEGIN
```

```
-- EXPORT Everything
```

```
prETS300371 OBJECT IDENTIFIER ::= {ccitt(0) identified-organization(4) etsi(0) ets(371)
informationModel(0)}
```

```
etsObjectClass OBJECT IDENTIFIER ::= {prETS300371 managedObjectClass(3)}
```

```
etsPackage OBJECT IDENTIFIER ::= {prETS300371 package(4)}
```

```
etsNameBinding OBJECT IDENTIFIER ::= {prETS300371 nameBinding(6)}
```

```
etsAttribute OBJECT IDENTIFIER ::= {prETS300371 attribute(7)}
```

```
etsAction OBJECT IDENTIFIER ::= {prETS300371 action(9)}
```

```
etsNotification OBJECT IDENTIFIER ::= {prETS300371 notification(10)}
```

```
END
```

5 PDH fragment

This clause provides managed objects required to model PDH interfaces.

5.1 Object classes definitions

5.1.1 Electrical PDH physical interface

This subclause describes the object classes required to model the PDH physical interface.

NOTE: Whether these require attributes to model more features (e.g. PDH level, line code, etc.) is for further study.

```
pPITTPBidirectional MANAGED OBJECT CLASS
DERIVED FROM "Recommendation M.3100:1992":trailTerminationPointBidirectional,
                pPITTPSink,
                pPITTPSource;
```

```
REGISTERED AS { etsObjectClass 1};
```

```
pPITTPSink MANAGED OBJECT CLASS
DERIVED FROM "Recommendation M.3100:1992":trailTerminationPointSink;
CHARACTERIZED BY
    "Recommendation M.3100:1992":administrativeOperationalStatesPackage,
    "Recommendation M.3100:1992":createDeleteNotificationsPackage,
    "Recommendation M.3100:1992":stateChangeNotificationPackage,
    "Recommendation M.3100:1992":tmnCommunicationsAlarmInformationPkg,
    "Recommendation M.3100:1992":userLabelPackage,
```

```
pPITTPSinkPkg PACKAGE
BEHAVIOUR
pPITTPSinkBehaviourPkg BEHAVIOUR
DEFINED AS
    "This managed object class represents the point where the incoming interface signal
```

is converted into an internal logic level and the timing is recovered from the line signal.

The upStream connectivity pointer is NULL for an instance of this class.

A communicationsAlarm notification shall be issued if a Loss of Signal (LOS) is detected. The probableCause parameter of the notification shall indicate LOS.

The operational state is disabled if a LOS is detected";;

ATTRIBUTES

pPITTPId GET;;;

REGISTERED AS { etsObjectClass 2 };

pPITTPSource MANAGED OBJECT CLASS

DERIVED FROM "Recommendation M.3100:1992":trailTerminationPointSource;

CHARACTERIZED BY

"Recommendation M.3100:1992":createDeleteNotificationsPackage,

"Recommendation M.3100:1992":userLabelPackage,

pPITTPSourcePkg PACKAGE

BEHAVIOUR

pPITTPSourceBehaviourPkg BEHAVIOUR

DEFINED AS

"This managed object class represents the point where the internal logic level and the timing is converted into a line signal.

The downStream connectivity pointer is NULL for an instance of this class.";;

ATTRIBUTES

pPITTPId GET;;;

REGISTERED AS { etsObjectClass 3 };

5.1.2 European PDH Alarm Indication Signal (AIS) trail termination point

This generic object class represents a particular case of termination point used in a managed element where no connectivity at respective level is provided. Instances of this object class are used when, in one layer, no flexibility is provided, but a direct adaptation to client is present.

The sink object class includes the AIS monitoring function of a respective Connection Termination Point (CTP) which is not instantiated where no connectivity on the respective level is provided. A communicationsAlarm notification shall be issued if an AIS is detected. The probableCause parameter of the notification shall indicate AIS.

Object classes inherited from this class are labelled according to the European PDH hierarchy (exTP, where x = 0 stands for 2 Mbit/s, x = 1 for 2 Mbit/s, x = 2 for 8 Mbit/s, x = 3 for 34 Mbit/s and x = 4 for 140 Mbit/s.)

NOTE: The possibility of adding conditional packages (present if the equipment supports the features) in order to model the capability to reveal Far End Receive Failure (FERF) and Excessive Bit Error Ratio (EBER) is for further study.

ePDHATTPSink MANAGED OBJECT CLASS

DERIVED FROM ePDHTTPSink;

CHARACTERIZED BY

ePDHTTPSinkPkg PACKAGE

BEHAVIOUR

ePDHATTPSinkBehaviourPkg BEHAVIOUR

DEFINED AS

"This object class includes the AIS monitoring function of a respective CTP which is not instantiated where no connectivity on the respective level is provided.

A communicationsAlarm notification shall be issued if an AIS is detected. The probableCause parameter of the notification shall indicate AIS.

An instance of this object class is used when, in one layer, no flexibility is provided, but a direct adaptation to client is present.

The upStream connectivity pointer attribute value of an instance of this object class is equal to NULL.

The operational state is disabled when an AIS is detected.";;;

REGISTERED AS {etsObjectClass 4};

ePDHATTPSource MANAGED OBJECT CLASS

DERIVED FROM ePDHATTPSource;

CHARACTERIZED BY

ePDHATTPSourcePkg PACKAGE

BEHAVIOUR

ePDHATTPSourceBehaviourPkg BEHAVIOUR

DEFINED AS

"The downStream connectivity pointer attribute value of an instance of this object class is equal to NULL.";;;

REGISTERED AS {etsObjectClass 5};

ePDHATTPBidirectional MANAGED OBJECT CLASS

DERIVED FROM

ePDHATTPBidirectional,

ePDHATTPSink,

ePDHATTPSource;

REGISTERED AS {etsObjectClass 6};

5.1.3 European PDH connection termination point

This subclause describes an object class (sink, source or bidirectional) which represents the model for a generic PDH connection termination point (2, 8, 34 and 140 Mbit/s).

Object classes inherited from this class are labelled according to the European PDH hierarchy (exTP, where x = 0 stands for 2 Mbit/s, x = 1 for 8 Mbit/s, x = 2 for 34 Mbit/s, x = 3 for 140 Mbit/s and x = 4 for 140 Mbit/s).

ePDHCTPSink MANAGED OBJECT CLASS

DERIVED FROM "Recommendation M.3100:1992":connectionTerminationPointSink;

CHARACTERIZED BY

"Recommendation M.3100:1992":createDeleteNotificationsPackage,

"Recommendation M.3100:1992":operationalStatePackage,

"Recommendation M.3100:1992":stateChangeNotificationPackage,

"Recommendation M.3100:1992":tmnCommunicationsAlarmInformationPkg,

ePDHCTPSinkPkg PACKAGE

BEHAVIOUR

ePDHCTPSinkBehaviourPkg BEHAVIOUR

DEFINED AS

"This object class represents the termination of a PDH hierarchy connection. A communicationsAlarm notification shall be issued if an AIS is detected. The probableCause parameter of the notification shall indicate AIS. An instance of this object class shall be used when, in one layer, flexibility is available or when there is no adaptation to client. The operationalState is disabled when an AIS is detected.";;

ATTRIBUTES

ePDHCTPId GET;;

REGISTERED AS {etsObjectClass 7};

ePDHCTPSource MANAGED OBJECT CLASS

DERIVED FROM "Recommendation M.3100:1992":connectionTerminationPointSource;

CHARACTERIZED BY

"Recommendation M.3100:1992":createDeleteNotificationsPackage,

ePDHCTPSourcePkg PACKAGE

BEHAVIOUR
ePDHCTPSourceBehaviourPkg BEHAVIOUR
DEFINED AS
"This object class originates a PDH hierarchy connection.";;

ATTRIBUTES
ePDHCTPId GET;;;

REGISTERED AS {etsObjectClass 8};

ePDHCTPBidirectional MANAGED OBJECT CLASS
DERIVED FROM
"Recommendation M.3100:1992":connectionTerminationPointBidirectional,
ePDHCTPSink,
ePDHCTPSource;

REGISTERED AS {etsObjectClass 9};

5.1.4 European PDH trail termination point

This subclause describes an object class (sink, source or bidirectional) which represents the model for a generic PDH trail termination point (2, 8, 34 and 140 Mbit/s).

Object classes inherited from this class are labelled according to the European PDH hierarchy (exTP, where x = 0 stands for 2 Mbit/s, x = 1 for 2 Mbit/s, x = 2 for 8 Mbit/s, x = 3 for 34 Mbit/s and x = 4 for 140 Mbit/s).

ePDHTTPSink MANAGED OBJECT CLASS
DERIVED FROM "Recommendation M.3100:1992":trailTerminationPointSink;
CHARACTERIZED BY
"Recommendation X.721: 1991":administrativeStatePackage,
"Recommendation M.3100:1992":operationalStatePackage,
"Recommendation M.3100:1992":createDeleteNotificationsPackage,
"Recommendation M.3100:1992":stateChangeNotificationPackage,
"Recommendation M.3100:1992":tmnCommunicationsAlarmInformationPkg,
ePDHTTPSinkPkg PACKAGE
BEHAVIOUR
ePDHTTPSinkBehaviourPkg BEHAVIOUR
DEFINED AS
"This object class represents the termination of a PDH trail. A communicationsAlarm notification shall be issued if a Loss Of Frame (LOF) is detected. The probableCause parameter of the notification shall indicate LOF.
The operationalState is disabled when a LOF is detected.";;

ATTRIBUTES
ePDHTTPId GET;;;

REGISTERED AS {etsObjectClass 10};

ePDHTTPSource MANAGED OBJECT CLASS
DERIVED FROM "Recommendation M.3100:1992":trailTerminationPointSource;
CHARACTERIZED BY
"Recommendation M.3100:1992":createDeleteNotificationsPackage,
ePDHTTPSourcePkg PACKAGE
BEHAVIOUR
ePDHTTPSourceBehaviourPkg BEHAVIOUR
DEFINED AS
"This object class originates a PDH hierarchy trail.";;

ATTRIBUTES
 ePDHTTPId GET;;;

REGISTERED AS {etsObjectClass 11};

ePDHTTPIBidirectional MANAGED OBJECT CLASS
 DERIVED FROM

"Recommendation M.3100:1992":trailTerminationPointBidirectional,
 ePDHTTPISink,
 ePDHTTPISource;

CHARACTERIZED BY

ePDHTTPIBidirectionalPkg PACKAGE
 BEHAVIOUR
 ePDHTTPIBidirectionalBehaviourPkg BEHAVIOUR
 DEFINED AS

"A communicationsAlarm notification shall be issued if a Remote Alarm Indication (RAI) is detected. The probableCause parameter of the notification shall indicate RAI. Detection of a RAI has no effect on the operationalState.";;;

REGISTERED AS {etsObjectClass 12};

5.1.5 European PDH TTP's for transport SDH VC's and ATM cells

This generic object class models the PDH trail used to transport SDH VC's and ATM cells and the label Int stands for **interworking**.

ePDHIntTTPSink MANAGED OBJECT CLASS

DERIVED FROM ePDHATTPSink;

CHARACTERIZED BY

ePDHIntTTPSinkPkg PACKAGE
 BEHAVIOUR
 ePDHIntTTPSinkBehaviourPkg BEHAVIOUR
 DEFINED AS

"This object class terminates a ETS 300 337 [1] trail transporting ATM cells or SDH elements. A communicationsAlarm notification shall be issued if the trail trace received (TR byte) does not match the trail trace expected. The probableCause parameter of the notification shall indicate trail trace mismatch.";;;

ATTRIBUTES

trTrailTraceExpected GET-REPLACE,
 trTrailTraceReceived GET;;;

REGISTERED AS { etsObjectClass 13 };

ePDHIntTTPSource MANAGED OBJECT CLASS

DERIVED FROM ePDHATTPSource;

CHARACTERIZED BY

ePDHIntTTPSourcePkg PACKAGE
 BEHAVIOUR
 ePDHIntTTPSourceBehaviourPkg BEHAVIOUR
 DEFINED AS

"This object class originates a ETS 300 337 [1] trail transporting ATM cells or SDH elements.";;;

ATTRIBUTES

trTrailTraceSend GET-REPLACE;;;

REGISTERED AS { etsObjectClass 14 };

ePDHIntTTPBidirectional MANAGED OBJECT CLASS

DERIVED FROM ePDHATTPBidirectional,
ePDHIntTTPSink,
ePDHIntTTPSource;

REGISTERED AS {etsObjectClass 15};

5.1.6 140 Mbit/s object classes

e4ATTPSink MANAGED OBJECT CLASS

DERIVED FROM ePDHATTPSink;

CHARACTERIZED BY

e4ATTPSinkPkg PACKAGE

BEHAVIOUR

e4ATTPSinkBehaviourPkg BEHAVIOUR

DEFINED AS

"This object class terminates a CCITT Recommendation G.702 [2] 140 Mbit/s
trail.";;;;

REGISTERED AS {etsObjectClass 16};

e4ATTPSource MANAGED OBJECT CLASS

DERIVED FROM ePDHATTPSource;

CHARACTERIZED BY

e4ATTPSourcePkg PACKAGE

BEHAVIOUR

e4ATTPSourceBehaviourPkg BEHAVIOUR

DEFINED AS

"This object class originates a CCITT Recommendation G.702 [2] 140 Mbit/s trail.";;;;

REGISTERED AS {etsObjectClass 17};

e4ATTPBidirectional MANAGED OBJECT CLASS

DERIVED FROM

ePDHATTPBidirectional,

e4ATTPSink,

e4ATTPSource;

REGISTERED AS {etsObjectClass 18};

e4CTPSink MANAGED OBJECT CLASS

DERIVED FROM ePDHCTPSink;

CHARACTERIZED BY

e4CTPSinkPkg PACKAGE

BEHAVIOUR

e4CTPSinkBehaviourPkg BEHAVIOUR

DEFINED AS

"This object class terminates a CCITT Recommendation G.702 [2] 140 Mbit/s
connection.";;;;

REGISTERED AS {etsObjectClass 19};

e4CTPSource MANAGED OBJECT CLASS

DERIVED FROM ePDHCTPSource;

CHARACTERIZED BY

e4CTPSourcePkg PACKAGE

BEHAVIOUR

e4CTPSourceBehaviourPkg BEHAVIOUR

DEFINED AS

"This object class originates a CCITT Recommendation G.702 [2] 140 Mbit/s
connection.";;;;

REGISTERED AS {etsObjectClass 20};

e4CTPBidirectional MANAGED OBJECT CLASS
DERIVED FROM
 ePDHCTPBidirectional,
 e4CTPSink,
 e4CTPSource;

REGISTERED AS {etsObjectClass 21};
e4TTPSink MANAGED OBJECT CLASS
DERIVED FROM ePDHTTTPSink;
CHARACTERIZED BY
 e4TTPSinkPkg PACKAGE
 BEHAVIOUR
 e4TTPSinkBehaviourPkg BEHAVIOUR
 DEFINED AS
 "This object class terminates a CCITT Recommendation G.702 [2] 140 Mbit/s
 trail.";;;;;

REGISTERED AS {etsObjectClass 22};

e4TTPSource MANAGED OBJECT CLASS
DERIVED FROM ePDHTTPSource;
CHARACTERIZED BY
 e4TTPSourcePkg PACKAGE
 BEHAVIOUR
 e4TTPSourceBehaviourPkg BEHAVIOUR
 DEFINED AS
 "This object class originates a CCITT Recommendation G.702 [2] 140 Mbit/s trail.";;;;;

REGISTERED AS {etsObjectClass 23};

e4TTPBidirectional MANAGED OBJECT CLASS
DERIVED FROM
 ePDHTTPBidirectional,
 e4TTPSink,
 e4TTPSource;

REGISTERED AS {etsObjectClass 24};

e4IntTTPSink MANAGED OBJECT CLASS
DERIVED FROM ePDHIntTTPSink;
CHARACTERIZED BY
 e4IntTTPSinkPkg PACKAGE
 BEHAVIOUR
 e4IntTTPSinkBehaviourPkg BEHAVIOUR
 DEFINED AS
 "This object class terminates a ETS 300 337 [1] 140 Mbit/s trail transporting ATM
 cells or SDH elements.";;;;;

REGISTERED AS { etsObjectClass 25};

e4IntTTPSource MANAGED OBJECT CLASS
DERIVED FROM ePDHIntTTPSource;
CHARACTERIZED BY
 e4IntTTPSourcePkg PACKAGE
 BEHAVIOUR

e4IntTTPSourceBehaviourPkg BEHAVIOUR
DEFINED AS
"This object class originates a ETS 300 337 [1] 140 Mbit/s trail transporting ATM
cells or SDH elements.";;;

REGISTERED AS { etsObjectClass 26};

e4IntTTPBidirectional MANAGED OBJECT CLASS
DERIVED FROM
ePDHIntTTPBidirectional,
e4IntTTPSink,
e4IntTTPSource;

REGISTERED AS { etsObjectClass 27};

5.1.7 34 Mbit/s object classes

e3ATTPSink MANAGED OBJECT CLASS
DERIVED FROM ePDHATTPSink;
CHARACTERIZED BY
e3ATTPSinkPkg PACKAGE
BEHAVIOUR
e3ATTPSinkBehaviourPkg BEHAVIOUR
DEFINED AS
"This object class terminates a CCITT Recommendation G.702 [2] 34 Mbit/s trail.";;;

REGISTERED AS {etsObjectClass 28};

e3ATTPSource MANAGED OBJECT CLASS
DERIVED FROM ePDHATTPSource;
CHARACTERIZED BY
e3ATTPSourcePkg PACKAGE
BEHAVIOUR
e3ATTPSourceBehaviourPkg BEHAVIOUR
DEFINED AS
"This object class originates a CCITT Recommendation G.702 [2] 34 Mbit/s trail.";;;

REGISTERED AS {etsObjectClass 29};

e3ATTPBidirectional MANAGED OBJECT CLASS
DERIVED FROM
ePDHATTPBidirectional,
e3ATTPSink,
e3ATTPSource;

REGISTERED AS {etsObjectClass 30};

e3CTPSink MANAGED OBJECT CLASS
DERIVED FROM ePDHCTPSink;
CHARACTERIZED BY
e3CTPSinkPkg PACKAGE
BEHAVIOUR
e3CTPSinkBehaviourPkg BEHAVIOUR
DEFINED AS
"This object class terminates a CCITT Recommendation G.702 [2] 34 Mbit/s
connection.";;;

REGISTERED AS {etsObjectClass 31};

e3CTPSource MANAGED OBJECT CLASS
DERIVED FROM ePDHCTPSource;
CHARACTERIZED BY
 e3CTPSourcePkg PACKAGE
 BEHAVIOUR
 e3CTPSourceBehaviourPkg BEHAVIOUR
 DEFINED AS
 "This object class originates a CCITT Recommendation G.702 [2] 34 Mbit/s
 connection.";;;;

REGISTERED AS {etsObjectClass 32};

e3CTPBidirectional MANAGED OBJECT CLASS
DERIVED FROM
 ePDHCTPBidirectional,
 e3CTPSink,
 e3CTPSource;

REGISTERED AS {etsObjectClass 33};

e3TTPSink MANAGED OBJECT CLASS
DERIVED FROM ePDHTTTPSink;
CHARACTERIZED BY
 e3TTPSinkPkg PACKAGE
 BEHAVIOUR
 e3TTPSinkBehaviourPkg BEHAVIOUR
 DEFINED AS
 "This object class terminates a CCITT Recommendation G.702 [2] 34 Mbit/s trail.";;;;

REGISTERED AS {etsObjectClass 34};

e3TTPSource MANAGED OBJECT CLASS
DERIVED FROM ePDHTTPSource;
CHARACTERIZED BY
 e3TTPSourcePkg PACKAGE
 BEHAVIOUR
 e3TTPSourceBehaviourPkg BEHAVIOUR
 DEFINED AS
 "This object class originates a CCITT Recommendation G.702 [2] 34 Mbit/s trail.";;;;

REGISTERED AS {etsObjectClass 35};

e3TTPBidirectional MANAGED OBJECT CLASS
DERIVED FROM
 ePDHTTPBidirectional,
 e3TTPSink,
 e3TTPSource;

REGISTERED AS {etsObjectClass 36};
e3IntTTPSink MANAGED OBJECT CLASS
DERIVED FROM ePDHIntTTPSink;
CHARACTERIZED BY
 e3IntTTPSinkPkg PACKAGE
 BEHAVIOUR
 e3IntTTPSinkBehaviourPkg BEHAVIOUR
 DEFINED AS
 "This object class terminates a ETS 300 337 [1] 34 Mbit/s trail transporting ATM
 cells or SDH elements.";;;;

REGISTERED AS { etsObjectClass 37};

e3IntTTPSource MANAGED OBJECT CLASS
DERIVED FROM ePDHIntTTPSource;
CHARACTERIZED BY
 e3IntTTPSourcePkg PACKAGE
 BEHAVIOUR
 e3IntTTPSourceBehaviourPkg BEHAVIOUR
 DEFINED AS
 "This object class originates a ETS 300 337 [1] 34 Mbit/s trail transporting ATM
 cells or SDH elements.";;;;

REGISTERED AS { etsObjectClass 38};

e3IntTTPBidirectional MANAGED OBJECT CLASS
DERIVED FROM
 ePDHIntTTPBidirectional,
 e3IntTTPSink,
 e3IntTTPSource;

REGISTERED AS { etsObjectClass 39};

5.1.8 8 Mbit/s object classes

e2ATTPSink MANAGED OBJECT CLASS
DERIVED FROM ePDHATTPSink;
CHARACTERIZED BY
 e2ATTPSinkPkg PACKAGE
 BEHAVIOUR
 e2ATTPSinkBehaviourPkg BEHAVIOUR
 DEFINED AS
 "This object class terminates a CCITT Recommendation G.702 [2] 8 Mbit/s trail.";;;;

REGISTERED AS {etsObjectClass 40};

e2ATTPSource MANAGED OBJECT CLASS
DERIVED FROM ePDHATTPSource;
CHARACTERIZED BY
 e2ATTPSourcePkg PACKAGE
 BEHAVIOUR
 e2ATTPSourceBehaviourPkg BEHAVIOUR
 DEFINED AS
 "This object class originates a CCITT Recommendation G.702 [2] 8 Mbit/s trail.";;;;

REGISTERED AS {etsObjectClass 41};

e2ATTPBidirectional MANAGED OBJECT CLASS
DERIVED FROM
 ePDHATTPBidirectional,
 e2ATTPSink,
 e2ATTPSource;

REGISTERED AS {etsObjectClass 42};

e2CTPSink MANAGED OBJECT CLASS
DERIVED FROM ePDHCTPSink;
CHARACTERIZED BY
 e2CTPSinkPkg PACKAGE
 BEHAVIOUR
 e2CTPSinkBehaviourPkg BEHAVIOUR
 DEFINED AS
 "This object class terminates a CCITT Recommendation G.702 [2] 8 Mbit/s
 connection.";;;;

REGISTERED AS {etsObjectClass 43};

e2CTPSource MANAGED OBJECT CLASS

DERIVED FROM ePDHCTPSource;

CHARACTERIZED BY

 e2CTPSourcePkg PACKAGE

 BEHAVIOUR

 e2CTPSourceBehaviourPkg BEHAVIOUR

 DEFINED AS

 "This object class originates a CCITT Recommendation G.702 [2] 8 Mbit/s connection.";;;;

REGISTERED AS {etsObjectClass 44};

e2CTPBidirectional MANAGED OBJECT CLASS

DERIVED FROM

 ePDHCTPBidirectional,

 e2CTPSink,

 e2CTPSource;

REGISTERED AS {etsObjectClass 45};

e2TTPSink MANAGED OBJECT CLASS

DERIVED FROM ePDHTTPSink;

CHARACTERIZED BY

 e2TTPSinkPkg PACKAGE

 BEHAVIOUR

 e2TTPSinkBehaviourPkg BEHAVIOUR

 DEFINED AS

 "This object class terminates a CCITT Recommendation G.702 [2] 8 Mbit/s trail.";;;;

REGISTERED AS {etsObjectClass 46};

e2TTPSource MANAGED OBJECT CLASS

DERIVED FROM ePDHTTPSource;

CHARACTERIZED BY

 e2TTPSourcePkg PACKAGE

 BEHAVIOUR

 e2TTPSourceBehaviourPkg BEHAVIOUR

 DEFINED AS

 "This object class originates a CCITT Recommendation G.702 [2] 8 Mbit/s trail.";;;;

REGISTERED AS {etsObjectClass 47};

e2TTPBidirectional MANAGED OBJECT CLASS

DERIVED FROM

 ePDHTTPBidirectional,

 e2TTPSink,

 e2TTPSource;

REGISTERED AS {etsObjectClass 48};

5.1.9 2 Mbit/s object classes

e1ATTPSink MANAGED OBJECT CLASS

DERIVED FROM ePDHATTPSink;

CHARACTERIZED BY

 e1ATTPSinkPkg PACKAGE

 BEHAVIOUR

```
e1ATTPSinkBehaviourPkg BEHAVIOUR
  DEFINED AS
  "This object class terminates a CCITT Recommendation G.702 [2] 2 Mbit/s trail.";;;
REGISTERED AS {etsObjectClass 49};

e1ATTPSource MANAGED OBJECT CLASS
DERIVED FROM ePDHATTPSource;
CHARACTERIZED BY
  e1ATTPSourcePkg PACKAGE
  BEHAVIOUR
  e1ATTPSourceBehaviourPkg BEHAVIOUR
  DEFINED AS
  "This object class originates a CCITT Recommendation G.702 [2] 2 Mbit/s trail.";;;
REGISTERED AS {etsObjectClass 50};

e1ATTPBidirectional MANAGED OBJECT CLASS
DERIVED FROM
  ePDHATTPBidirectional,
  e1ATTPSink,
  e1ATTPSource;
REGISTERED AS {etsObjectClass 51};
e1CTPSink MANAGED OBJECT CLASS
  DERIVED FROM ePDHCTPSink;
  CHARACTERIZED BY
    "Recommendation M.3100: 1992":tmnCommunicationsAlarmInformationPackage,
    e1CTPSinkPkg PACKAGE
    BEHAVIOUR
      e1CTPSinkBehaviourPkg BEHAVIOUR
      DEFINED AS
        "This object class terminates a CCITT Recommendation G.702 2
        Mbit/s connection. There are communication alarms for byte
        synchronous mapping only. A communicationsAlarm notification
        shall be issued if a Loss Of Frame (LOF) is detected. The
        probableCause parameter of the notification shall indicate LOF
        (Loss Of Frame).The operational state is disabled when a LOF
        alarm is reportable on an instance.";;;
REGISTERED AS {etsObjectClass 52};

e1CTPSource MANAGED OBJECT CLASS
DERIVED FROM ePDHCTPSource;
CHARACTERIZED BY
  e1CTPSourcePkg PACKAGE
  BEHAVIOUR
  e1CTPSourceBehaviourPkg BEHAVIOUR
  DEFINED AS
  "This object class originates a CCITT Recommendation G.702 [2] 2 Mbit/s
  connection.";;;
REGISTERED AS {etsObjectClass 53};

e1CTPBidirectional MANAGED OBJECT CLASS
DERIVED FROM
  ePDHCTPBidirectional,
  e1CTPSink,
  e1CTPSource;
```

REGISTERED AS {etsObjectClass 54};

e1TTPSink MANAGED OBJECT CLASS

DERIVED FROM ePDHTTTPSink;

CHARACTERIZED BY

e1TTPSinkPkg PACKAGE

BEHAVIOUR

e1TTPSinkBehaviourPkg BEHAVIOUR

DEFINED AS

"This object class terminates a CCITT Recommendation G.702 [2] 2 Mbit/s trail.";;;

REGISTERED AS {etsObjectClass 55};

e1TTPSource MANAGED OBJECT CLASS

DERIVED FROM ePDHTTPSource;

CHARACTERIZED BY

e1TTPSourcePkg PACKAGE

BEHAVIOUR

e1TTPSourceBehaviourPkg BEHAVIOUR

DEFINED AS

"This object class originates a CCITT Recommendation G.702 [2] 2 Mbit/s trail.";;;

REGISTERED AS {etsObjectClass 56};

e1TTPBidirectional MANAGED OBJECT CLASS

DERIVED FROM

ePDHTTPBidirectional,

e1TTPSink,

e1TTPSource;

REGISTERED AS {etsObjectClass 57};

5.1.10 64 kbit/s object classes

e0CTPSink MANAGED OBJECT CLASS

DERIVED FROM "Recommendation M.3100:1992":connectionTerminationPointSink;

CHARACTERIZED BY

"Recommendation M.3100:1992":createDeleteNotificationsPackage,

"Recommendation M.3100:1992":operationalStatePackage,

"Recommendation M.3100:1992":stateChangeNotificationPackage,

e0CTPSinkPkg PACKAGE

BEHAVIOUR

e0CTPSinkBehaviourPkg BEHAVIOUR

DEFINED AS

" An instance of this object class terminates a 64 kbit/s connection. Where additional features are requested and supported by the equipment, appropriate subclassing is recommended (e.g. where monitoring is required, the tmnCommunicationsAlarmInformationPkg should be included)";;

ATTRIBUTES

e0CTPId

GET;;;

REGISTERED AS {etsObjectClass 58};
e0CTPSource MANAGED OBJECT CLASS
DERIVED FROM "Recommendation M.3100:1992":connectionTerminationPointSource;
CHARACTERIZED BY
 "Recommendation M.3100:1992":createDeleteNotificationsPackage,
 e0CTPSourcePkg PACKAGE
 BEHAVIOUR
 e0CTPSourceBehaviourPkg BEHAVIOUR
 DEFINED AS
 "An instance of this object class originates a 64 kbit/s connection.";;

ATTRIBUTES
e0CTPId GET;;;

REGISTERED AS {etsObjectClass 59};

e0CTPBidirectional MANAGED OBJECT CLASS
DERIVED FROM
 "Recommendation M.3100:1992":connectionTerminationPointBidirectional,
 e0CTPSink,
 e0CTPSource;

REGISTERED AS {etsObjectClass 60};

5.2 Attributes definitions

pPITTPId ATTRIBUTE
WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule1.NameType;
MATCHES FOR EQUALITY;
 BEHAVIOUR
 pPITTPIdBehaviour BEHAVIOUR
 DEFINED AS
 "This attribute is used as a Relative Distinguished Name (RDN) for naming instances of the
 pPITTP object classes.";;;;

REGISTERED AS {etsAttribute 1};

ePDHCTPId ATTRIBUTE
WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule1.NameType;
MATCHES FOR EQUALITY;
 BEHAVIOUR
 ePDHCTPIdBehaviour BEHAVIOUR
 DEFINED AS
 "This attribute is used as a RDN for naming instances of the ePDHCTP object classes.";;;;

REGISTERED AS {etsAttribute 2};

ePDHTTPId ATTRIBUTE
WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule1.NameType;
MATCHES FOR EQUALITY;
 BEHAVIOUR
 ePDHTTPIdBehaviour BEHAVIOUR
 DEFINED AS
 "This attribute is used as a RDN for naming instances of the ePDHTTP object classes.";;;;

REGISTERED AS {etsAttribute 3};

trTrailTraceExpected ATTRIBUTE
WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule1.TrailTrace;

MATCHES FOR EQUALITY;
BEHAVIOUR
trTrailTraceExpectedBehaviour BEHAVIOUR
DEFINED AS
"This attribute is used to specify the value of the expected TR byte PDH trail trace 16 bytes message for instances of the e3IntTTP and e4IntTTP object class.";;;;
REGISTERED AS {etsAttribute 4};

trTrailTraceReceive ATTRIBUTE
WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule1.TrailTrace;
MATCHES FOR EQUALITY;
BEHAVIOUR
trTrailTraceReceiveBehaviour BEHAVIOUR
DEFINED AS
"This attribute is used to know the value of the incoming TR byte PDH trail trace 16 bytes message for instances of the e3IntTTP and e4IntTTP object class.";;;;
REGISTERED AS {etsAttribute 5};
trTrailTraceSend ATTRIBUTE
WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule1.TrailTrace;
MATCHES FOR EQUALITY;
BEHAVIOUR
trTrailTraceSendBehaviour BEHAVIOUR
DEFINED AS
"This attribute is used to specify the value of the outgoing TR byte PDH trail trace 16 bytes message for instances of the e3IntTTP and eg4IntTTP object class.";;;;
REGISTERED AS {etsAttribute 6};

e0CTPId ATTRIBUTE
WITH ATTRIBUTE SYNTAX ASN1DefinedTypesModule1.NameType;
MATCHES FOR EQUALITY;
BEHAVIOUR
e0CTPIdBehaviour BEHAVIOUR
DEFINED AS
"This attribute is used as a RDN for naming instances of the e0CTP object classes.";;;;
REGISTERED AS {etsAttribute 7};

5.3 Name bindings definitions

pPITTPSink-managedElement NAME BINDING
SUBORDINATE OBJECT CLASS pPITTPSink AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS managedElement AND SUBCLASSES;
WITH ATTRIBUTE pPITTPId;
CREATE
WITH-REFERENCE-OBJECT,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS { etsNameBinding 1 };

pPITTPSource-managedElement NAME BINDING
SUBORDINATE OBJECT CLASS pPITTPSource AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS managedElement AND SUBCLASSES;
WITH ATTRIBUTE pPITTPId;
CREATE
WITH-REFERENCE-OBJECT,

WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS { etsNameBinding 2 };

ePDHTTTSink-managedElement NAME BINDING
SUBORDINATE OBJECT CLASS ePDHTTTSink AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS managedElement AND SUBCLASSES;
WITH ATTRIBUTE ePDHTTTPid;
BEHAVIOUR ePDHTTTSink-managedElement BEHAVIOUR
DEFINED AS
"The subordinate managed object may be automatically instantiated when the superior managed object is instantiated, according to the make-up and mode of operation of the equipment.";;

REGISTERED AS {etsNameBinding 3};
ePDHTTTSource-managedElement NAME BINDING
SUBORDINATE OBJECT CLASS ePDHTTTSource AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS managedElement AND SUBCLASSES;
WITH ATTRIBUTE ePDHTTTPID;
BEHAVIOUR ePDHCTPSource-managedElement BEHAVIOUR
DEFINED AS
"The subordinate managed object may be automatically instantiated when the superior managed object is instantiated, according to the make-up and mode of operation of the equipment.";;

REGISTERED AS {etsNameBinding 4};

ePDHCTPSink-pPITTPSink NAME BINDING
SUBORDINATE OBJECT CLASS ePDHCTPSink AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS pPITTPSink AND SUBCLASSES;
WITH ATTRIBUTE ePDHCTPId;
BEHAVIOUR
ePDHCTPSink-pPITTPSink BEHAVIOUR
DEFINED AS
"The subordinate managed object may be automatically instantiated when the superior managed object is instantiated, according to the make-up and mode of operation of the equipment.";;
REGISTERED AS {etsNameBinding 5};

ePDHCTPSource-pPITTPSource NAME BINDING
SUBORDINATE OBJECT CLASS ePDHCTPSource AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS pPITTPSource AND SUBCLASSES;
WITH ATTRIBUTE ePDHCTPId;
BEHAVIOUR
ePDHCTPSource-pPITTPSource BEHAVIOUR
DEFINED AS
"The subordinate managed object may be automatically instantiated when the superior managed object is instantiated, according to the make-up and mode of operation of the equipment.";;

REGISTERED AS {etsNameBinding 6};

eOCTPSink-pPITTPSink NAME BINDING
SUBORDINATE OBJECT CLASS eOCTPSink AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS pPITTPSink AND SUBCLASSES;
WITH ATTRIBUTE eOCTPId;
BEHAVIOUR
eOCTPSink-pPITTPSink BEHAVIOUR
DEFINED AS

"The subordinate managed object may be automatically instantiated when the superior managed object is instantiated, according to the make-up and mode of operation of the equipment.";;

REGISTERED AS {etsNameBinding 7};

e0CTPSource-pPITTPSource NAME BINDING

SUBORDINATE OBJECT CLASS e0CTPSource AND SUBCLASSES;

NAMED BY

SUPERIOR OBJECT CLASS pPPITTPSource AND SUBCLASSES;

WITH ATTRIBUTE e0CTPIId;

BEHAVIOUR

e0CTPSource-pPITTPSource BEHAVIOUR

DEFINED AS

"The subordinate managed object may be automatically instantiated when the superior managed object is instantiated, according to the make-up and mode of operation of the equipment.";;

REGISTERED AS {etsNameBinding 8};

ePDHCTPSink-ePDHTTTPSink NAME BINDING

SUBORDINATE OBJECT CLASS ePDHCTPSink AND SUBCLASSES;

NAMED BY

SUPERIOR OBJECT CLASS ePDHTTTPSink AND SUBCLASSES;

WITH ATTRIBUTE ePDHCTPIId;

BEHAVIOUR

ePDHCTPSink-ePDHTTTPSink BEHAVIOUR

DEFINED AS

"The subordinate managed object may be automatically instantiated when the superior managed object is instantiated, according to the make-up and mode of operation of the equipment.";;

REGISTERED AS {etsNameBinding 9};

ePDHCTPSource-ePDHTTTPSource NAME BINDING

SUBORDINATE OBJECT CLASS ePDHCTPSource AND SUBCLASSES;

NAMED BY

SUPERIOR OBJECT CLASS ePDHTTTPSource AND SUBCLASSES;

WITH ATTRIBUTE ePDHCTPIId;

BEHAVIOUR

ePDHCTPSource-ePDHTTTPSource BEHAVIOUR

DEFINED AS

"The subordinate managed object may be automatically instantiated when the superior managed object is instantiated, according to the make-up and mode of operation of the equipment.";;

REGISTERED AS {etsNameBinding 10};

e0CTPSink-e1TTTPSink NAME BINDING

SUBORDINATE OBJECT CLASS e0CTPSink AND SUBCLASSES;

NAMED BY

SUPERIOR OBJECT CLASS e1TTTPSink AND SUBCLASSES;

WITH ATTRIBUTE e0CTPIId;

BEHAVIOUR

e0CTPSink-e1TTTPSink BEHAVIOUR

DEFINED AS

"The subordinate managed object may be automatically instantiated when the superior managed object is instantiated, according to the make-up and mode of operation of the equipment.";;

REGISTERED AS {etsNameBinding 11};
e0CTPSource-e1TTPSource NAME BINDING
SUBORDINATE OBJECT CLASS e0CTPSource AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS e1TTPSource AND SUBCLASSES;
WITH ATTRIBUTE e0CTPId;
BEHAVIOUR
e0CTPSource-e1TTPSource BEHAVIOUR
DEFINED AS
"The subordinate managed object may be automatically instantiated when the superior managed object is instantiated, according to the make-up and mode of operation of the equipment.";;

REGISTERED AS {etsNameBinding 12};

ePDHATTPSink-pPITTPSink NAME BINDING
SUBORDINATE OBJECT CLASS ePDHATTPSink AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS pPITTPSink AND SUBCLASSES;
WITH ATTRIBUTE ePDHTTPIId;
BEHAVIOUR
ePDHATTPSink-pPITTPSink BEHAVIOUR
DEFINED AS
"The subordinate managed object may be automatically instantiated when the superior managed object is instantiated, according to the make-up and mode of operation of the equipment.";;

REGISTERED AS {etsNameBinding 13};

ePDHATTPSource-pPITTPSource NAME BINDING
SUBORDINATE OBJECT CLASS ePDHATTPSource AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS pPITTPSource AND SUBCLASSES;
WITH ATTRIBUTE ePDHTTPIId;
BEHAVIOUR
ePDHATTPSink-pPITTPSource BEHAVIOUR
DEFINED AS
"The subordinate managed object may be automatically instantiated when the superior managed object is instantiated, according to the make-up and mode of operation of the equipment.";;

REGISTERED AS {etsNameBinding 14};

e0CTPSink-e1ATTPSink NAME BINDING
SUBORDINATE OBJECT CLASS e0CTPSink AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS e1ATTPSink AND SUBCLASSES;
WITH ATTRIBUTE e0CTPId;
BEHAVIOUR
e0CTPSink-e1ATTPSink BEHAVIOUR
DEFINED AS
"The subordinate managed object may be automatically instantiated when the superior managed object is instantiated, according to the make-up and mode of operation of the equipment.";;

REGISTERED AS {etsNameBinding 15};
e0CTPSource-e1ATTPSource NAME BINDING
SUBORDINATE OBJECT CLASS e0CTPSource AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS e1ATTPSource AND SUBCLASSES;
WITH ATTRIBUTE e0CTPId;
BEHAVIOUR
e0CTPSource-e1ATTPSource BEHAVIOUR
DEFINED AS
"The subordinate managed object may be automatically instantiated when the superior managed object is instantiated, according to the make-up and mode of operation of the equipment.";;

REGISTERED AS {etsNameBinding 16};

e3ATTPSink-e4ATTPSink NAME BINDING
SUBORDINATE OBJECT CLASS e3ATTPSink AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS e4ATTPSink AND SUBCLASSES;
WITH ATTRIBUTE ePDHTTPIId;
BEHAVIOUR
e3ATTPSink-e4ATTPSink BEHAVIOUR
DEFINED AS
"The subordinate managed object may be automatically instantiated when the superior managed object is instantiated, according to the make-up and mode of operation of the equipment.";;

REGISTERED AS {etsNameBinding 17};

e3ATTPSource-e4ATTPSource NAME BINDING
SUBORDINATE OBJECT CLASS e3ATTPSource AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS e4ATTPSource AND SUBCLASSES;
WITH ATTRIBUTE ePDHTTPIId;
BEHAVIOUR
e3ATTPSource-e4ATTPSource BEHAVIOUR
DEFINED AS
"The subordinate managed object may be automatically instantiated when the superior managed object is instantiated, according to the make-up and mode of operation of the equipment.";;

REGISTERED AS {etsNameBinding 18};

e2ATTPSink-e3ATTPSink NAME BINDING
SUBORDINATE OBJECT CLASS e2ATTPSink AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS e3ATTPSink AND SUBCLASSES;
WITH ATTRIBUTE ePDHTTPIId;
BEHAVIOUR
e2ATTPSink-e3ATTPSink BEHAVIOUR
DEFINED AS
"The subordinate managed object may be automatically instantiated when the superior managed object is instantiated, according to the make-up and mode of operation of the equipment.";;

```
REGISTERED AS {etsNameBinding 19};
e2ATTPSource-e3ATTPSource NAME BINDING
SUBORDINATE OBJECT CLASS e2ATTPSource AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS e3ATTPSource AND SUBCLASSES;
WITH ATTRIBUTE ePDHTTPId;
BEHAVIOUR
e2ATTPSource-e3ATTPSource BEHAVIOUR
DEFINED AS
"The subordinate managed object may be automatically instantiated when the superior managed
object is instantiated, according to the make-up and mode of operation of the equipment.";;
```

```
REGISTERED AS {etsNameBinding 20};
```

```
e1ATTPSink-e2ATTPSink NAME BINDING
SUBORDINATE OBJECT CLASS e1ATTPSink AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS e2ATTPSink AND SUBCLASSES;
WITH ATTRIBUTE ePDHTTPId;
BEHAVIOUR
e1ATTPSink-e2ATTPSink BEHAVIOUR
DEFINED AS
"The subordinate managed object may be automatically instantiated when the superior managed
object is instantiated, according to the make-up and mode of operation of the equipment.";;
```

```
REGISTERED AS {etsNameBinding 21};
```

```
e1ATTPSource-e2ATTPSource NAME BINDING
SUBORDINATE OBJECT CLASS e1ATTPSource AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS e2ATTPSource;
WITH ATTRIBUTE ePDHTTPId;
BEHAVIOUR
e1ATTPSource-e2ATTPSource BEHAVIOUR
DEFINED AS
"The subordinate managed object may be automatically instantiated when the superior managed
object is instantiated, according to the make-up and mode of operation of the equipment.";;
```

```
REGISTERED AS {etsNameBinding 22};
```

5.4 ASN.1 definitions

```
ASN1DefinedTypesModule1 {ccitt(0) identified-organization(4) etsi(0) ets(371) informationModel(0)
asn1Module(2) asn1DefinedTypesModule1(1)}
```

```
DEFINITIONS IMPLICIT TAGS ::=
BEGIN
-- EXPORTS everything
IMPORTS
```

```
NameType FROM ASN1DefinedTypesModule {ccitt(0) recommendation(0) m(13) m3100(3100)
informationModel(0) asn1Module(2) asn1DefinedTypesModule(0)};
```

```
TrailTrace ::= CHOICE {
    null          NULL,
    pathtrace [1] GraphicString
}
```

```
END -- end of ASN1DefinedTypesModule
```

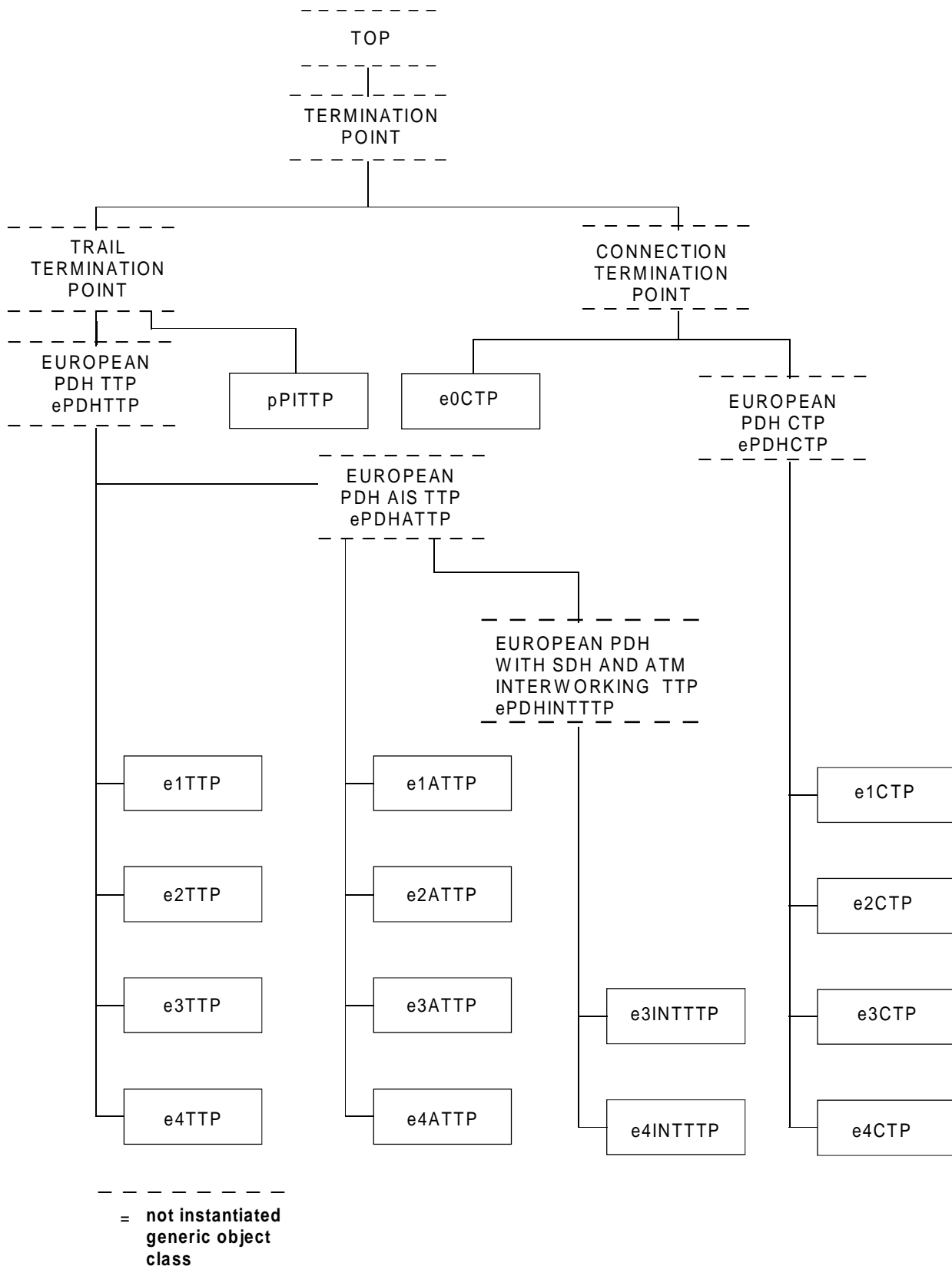


Figure 1: PDH transport object inheritance (all PDH objects may be source, sink or bidirectional)

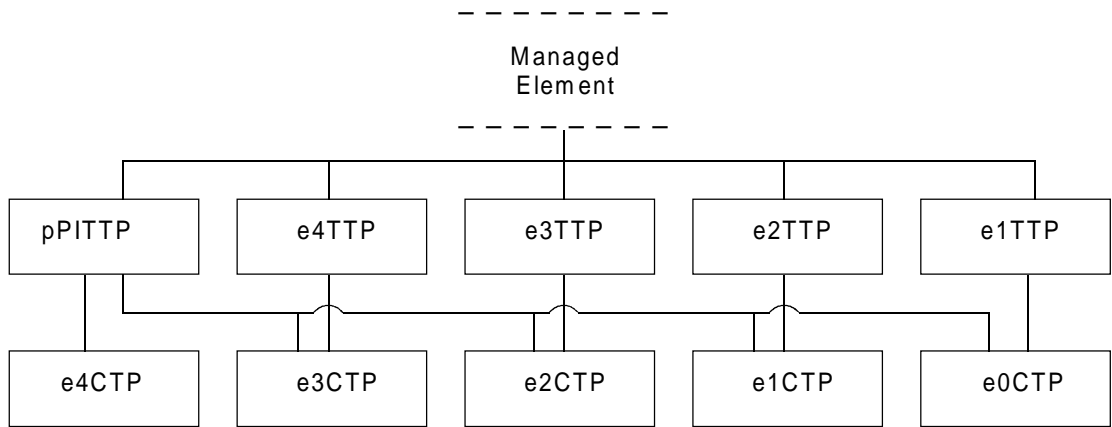


Figure 2: PDH object naming when PDH cross connectivity is available

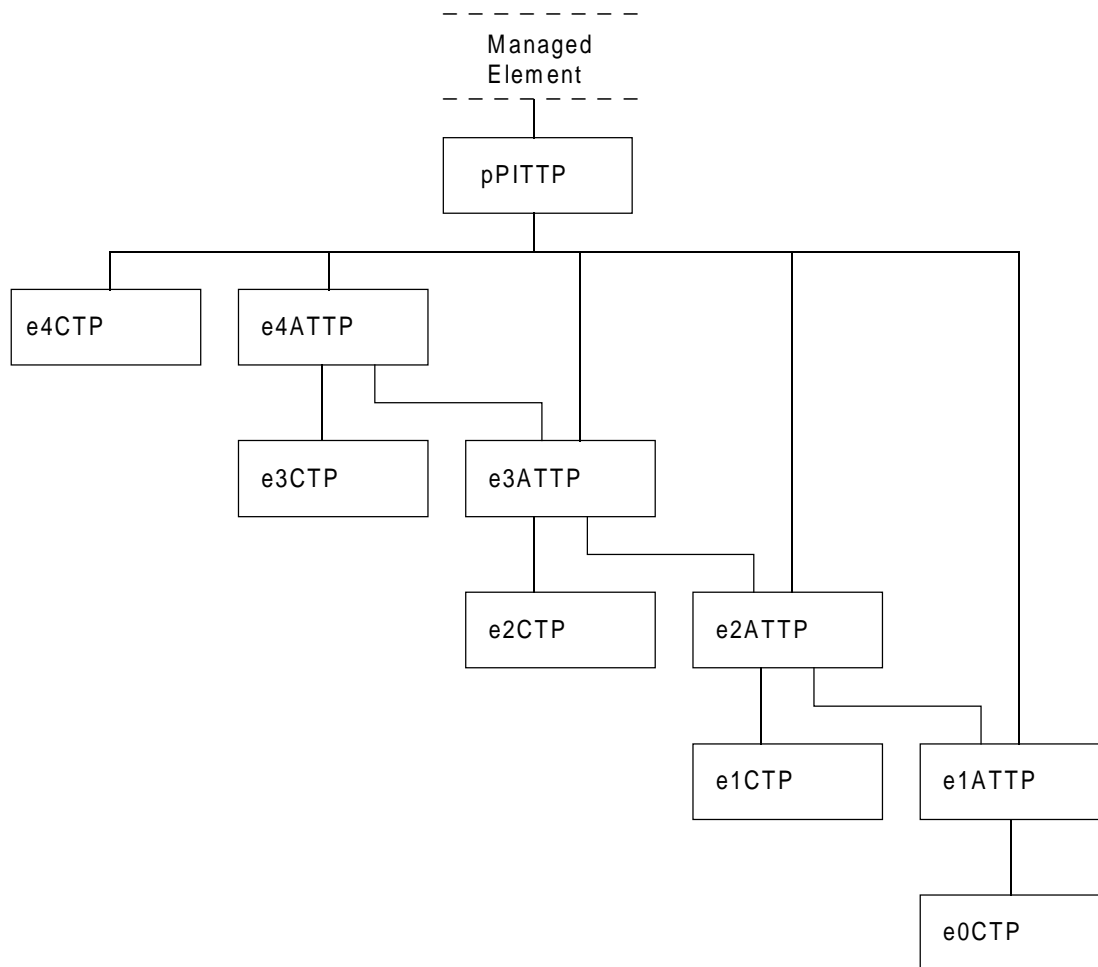


Figure 3: PDH object naming when no PDH cross connectivity is available

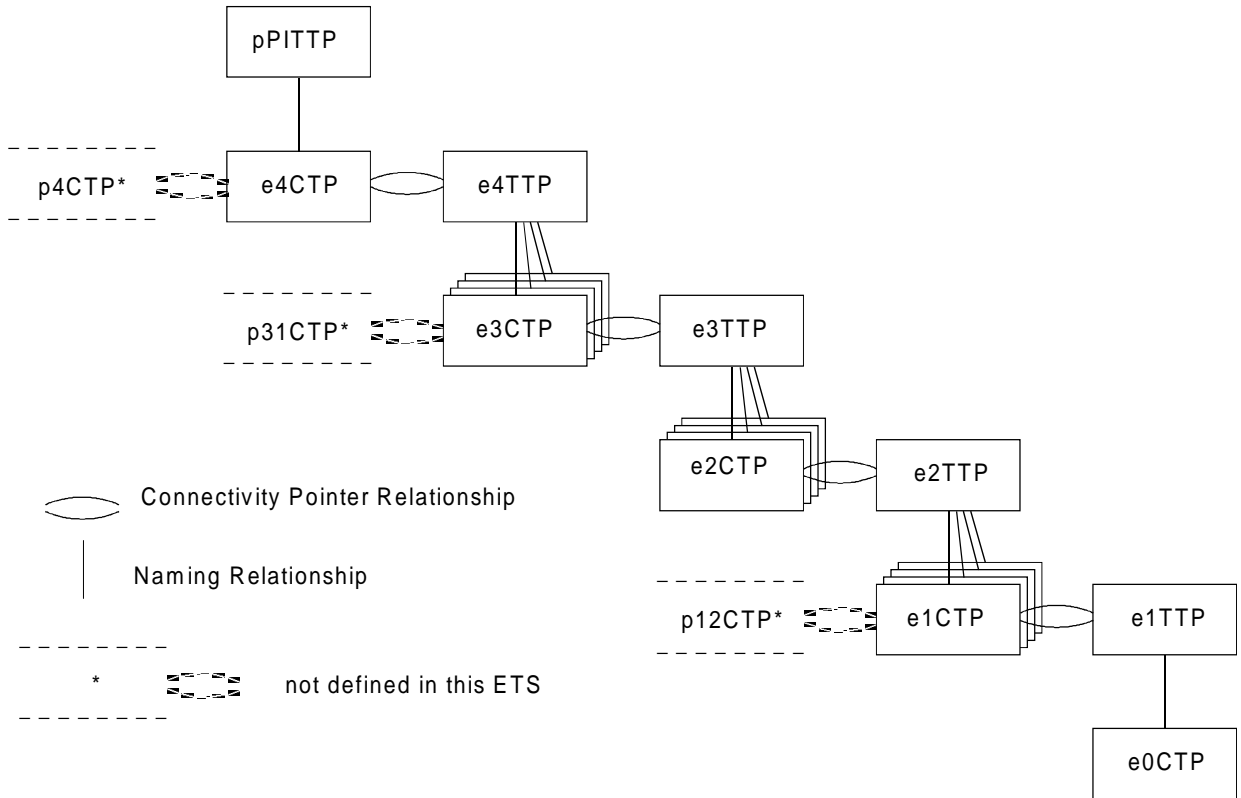


Figure 4: Naming and pointer relationships for PDH and relationship with SDH object classes

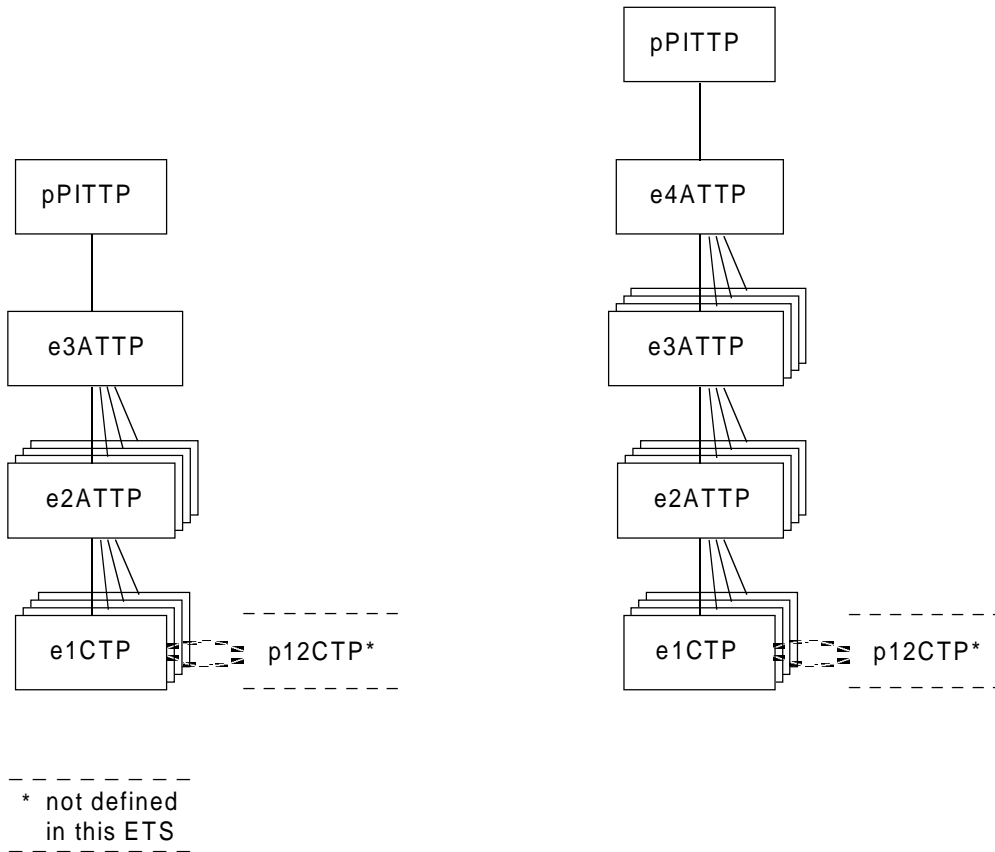


Figure 5: Naming and pointer relationships examples for short version 34/vc12 and 140/vc12 transmultiplexer

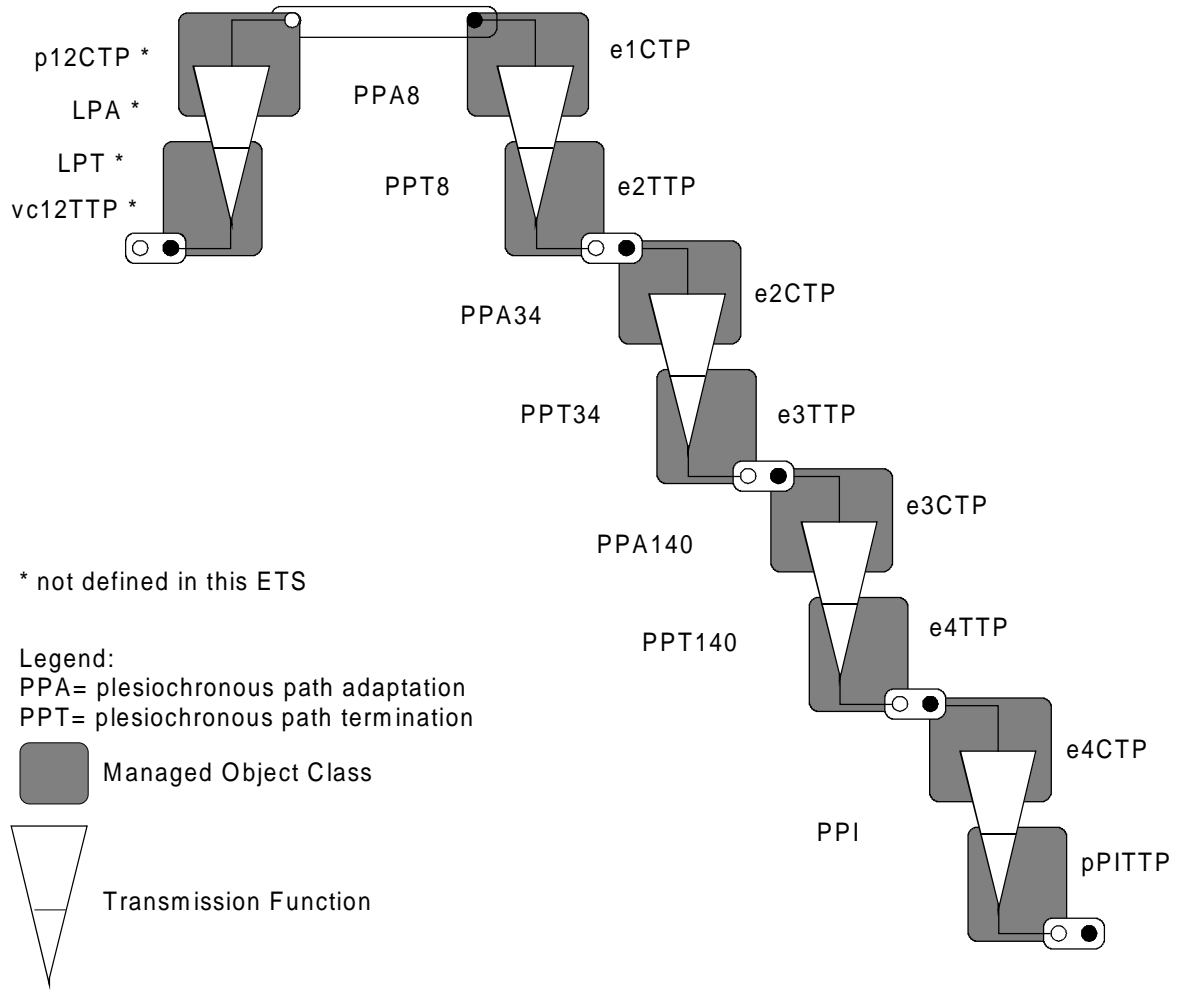


Figure 6: Example for relationship between object classes and transmission functions

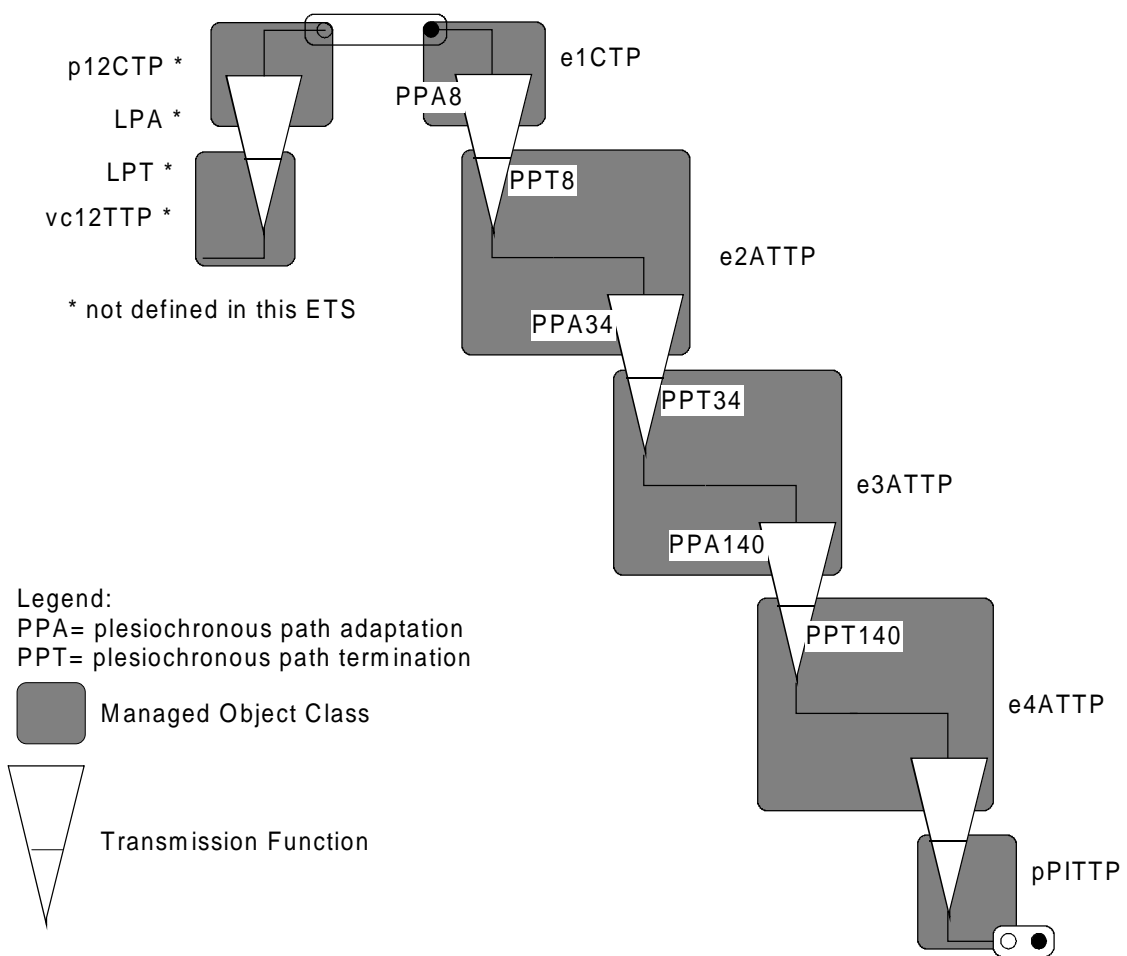


Figure 7: Example for relationship between object classes and transmission functions short version without PDH cross connectivity

History

Document history	
November 1994	First Edition
April 1996	Unified Approval Procedure UAP 46: 1996-04-08 to 1996-08-30