INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

G.774.6

(04/97)

SERIES G: TRANSMISSION SYSTEMS AND MEDIA, DIGITAL SYSTEMS AND NETWORKS

Digital transmission systems – Terminal equipments – Operations, administration and maintenance features of transmission equipment

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Synchronous Digital Hierarchy (SDH) unidirectional performance monitoring for the network element view

ITU-T Recommendation G.774.6

(Previously CCITT Recommendation)

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ITU-T RECOMMENDATION G.774.6

SYNCHRONOUS DIGITAL HIERARCHY (SDH) UNIDIRECTIONAL PERFORMANCE MONITORING FOR THE NETWORK ELEMENT VIEW

Summary

This Recommendation provides an information model for the performance monitoring of Synchronous Digital Hierarchy (SDH) network. This model describes the managed object classes and their properties for the performance monitoring function of unidirectional paths and sections, as defined in Recommendation G.784 [6] and as related to SDH network elements. These objects are useful to describe information exchanged across interfaces defined in Recommendation M.3010 [10] Telecommunications Management Network (TMN) architecture for the management of the performance monitoring function.

Source

ITU-T Recommendation G.774.6 was prepared by ITU-T Study Group 15 (1997-2000) and was approved under the WTSC Resolution No. 1 procedure on the 8th of April 1997.

Keywords

Synchronous Digital Hierarchy, Information Model, Managed Object Class, Attribute, Notification, Action, GDMO, ASN.1.

FOREWORD

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NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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Recommendation G.774.6

SYNCHRONOUS DIGITAL HIERARCHY (SDH) UNIDIRECTIONAL PERFORMANCE MONITORING FOR THE NETWORK ELEMENT VIEW

(Geneva, 1997)

The ITU,

considering

a) that Recommendation G.707 is a specification for the Synchronous Digital Hierarchy (SDH) and the Network Node Interface (NNI);

b) that Recommendations G.783 and G.784 form a coherent set of specifications for SDH multiplex equipment functions and management;

c) that Recommendation M.3010 defines the principles for a Telecommunications Management Network (TMN);

d) that Recommendation G.773 defines the protocol suites for Q-interfaces;

e) that Recommendation M.3100 defines a Generic Network Information Model for the exchange of management information;

f) that Recommendation G.774 defines an SDH Management Information Model for the Network Element View;

g) that Recommendation G.774.1 defines an SDH Management Information Model for Performance Monitoring for the Network Element View;

h) that Recommendation Q.822 defines a Management Information Model for Performance Management,

recommends

that the unidirectional performance management of SDH equipment be carried out by using the information model defined in accordance with the details contained within this Recommendation.

1 Scope

1.1 Scope of this Recommendation

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.

Recommendation M.2120 defines maintenance of transport network, Recommendation G.784 defines the management of SDH-based network element. This Recommendation defines the object model based on Recommendation Q.822 according to the requirements described in Recommendations G.784 and M.2120 with respect to unidirectional performance monitoring. This model uses generic mechanisms defined in Recommendation Q.822. The information model for bidirectional performance monitoring is covered by Recommendation G.774.1. This Recommendation reuses functionality of Recommendation G.774.1 wherever possible.

1.2 Structure of this Recommendation

Subclause 5.1 provides an overview of the unidirectional SDH performance monitoring information model. Clauses 6-15 describe the information model using the notation mechanisms defined in Recommendation X.722, Guidelines for the definition of managed objects [22]. Clause 15 contains the syntax definitions of the information carried in the protocol using Abstract Syntax Notation One (ASN.1) defined in Recommendation X.208 [16]. Naming and inheritance are illustrated in Appendix I. Clauses 5-15 are normative; all other text is informative.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; all users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published.

[1] ITU-T Recommendation G.707 (1996), *Network node interface for the Synchronous Digital Hierarchy (SDH).*

[2] ITU-T Recommendation G.773 (1993), *Protocol suites for Q-interfaces for management of transmission systems*.

[3] CCITT Recommendation G.774 (1992), *Synchronous Digital Hierarchy (SDH) management information model for the network element view*.

[4] ITU-T Recommendation G.774.1 (1994), *Synchronous Digital Hierarchy (SDH) performance monitoring for the network element view.*

[5] ITU-T Recommendation G.783 (1997), *Characteristics of Synchronous Digital Hierarchy (SDH) equipment functional blocks.*

[6] ITU-T Recommendation G.784 (1994), *Synchronous Digital Hierarchy (SDH) management.*

[7] ITU-T Recommendation G.805 (1995), *Generic functional architecture of transport networks*.

[8] ITU-T Recommendation G.826 (1996), *Error performance parameters and objectives for international constant bit rate digital paths at or above the primary rate*.

[9] CCITT Recommendation M.2120 (1992), *Digital path, section and transmission system fault detection and localization procedures.*

[10] ITU-T Recommendation M.3010 (1996), *Principles for a telecommunication management network.*

[11] ITU-T Recommendation M.3100 (1995), *Generic network information model.*

[12] ITU-T Recommendation M.60 (1993), *Maintenance terminology and definitions*.

[13] ITU-T Recommendation Q.811 (1993), *Lower layer protocol profiles for the Q3 interface*.

[14] ITU-T Recommendation Q.812 (1993), *Upper layer protocol profiles for the Q3 interface.*

[15] ITU-T Recommendation Q.822 (1994), *Stage 1, stage 2 and stage 3 description for the Q3 interface – Performance management.*

[16] CCITT Recommendation X.208 (1988), *Specification of Abstract Syntax Notation One (ASN.1).*

[17] CCITT Recommendation X.701 (1992), *Information technology – Open Systems Interconnection – Systems management overview.*

[18] CCITT Recommendation X.710 (1991), *Common management information service definition for CCITT applications.*

[19] CCITT Recommendation X.711 (1991), *Common management information protocol specification for CCITT applications*.

[20] CCITT Recommendation X.720 (1992), *Information technology – Open Systems Interconnection – Structure of Management Information: Management information model.*

[21] CCITT Recommendation X.721 (1992), *Information technology – Open Systems Interconnection – Structure of Management Information: Definition of management information*.

[22] CCITT Recommendation X.722 (1992), *Information technology – Open Systems Interconnection – Structure of Management Information: Guidelines for the definition of managed objects.*

[23] CCITT Recommendation X.731 (1992), *Information technology – Open Systems Interconnection – Systems Management: State management function.*

[24] CCITT Recommendation X.730 (1992), *Information technology – Open Systems Interconnection – Systems Management: Object management function.*

[25] CCITT Recommendation X.733 (1992), *Information technology – Open Systems Interconnection – Systems Management: Alarm reporting function.*

[26] CCITT Recommendation X.734 (1992), *Information technology – Open Systems Interconnection – Systems Management: Event report management function.*

[27] CCITT Recommendation X.735 (1992), *Information technology – Open Systems Interconnection – Systems Management: Log control function.*

[28] ITU-T Recommendation X.739 (1993), *Information technology – Open Systems Interconnection – Systems Management – Metric objects and attributes.*

3 Definition

For the definition of performance management functionality, refer to Recommendation G.784 [6].

4 Abbreviations

This Recommendation uses the following abbreviations:

AIS Alarm Indication Signal

BBE Background Block Error

CSES Consecutive Severely Errored Second

CTP Connection Termination Point

EBER Excessive Bit Error Ratio

ES Errored Second

FEBBE Far-End Background Block Error

FEEB Far-End Errored Block

FEES Far-End Errored Second

FESES	Far-End Severely Errored Second
ISO	International Organization for Standardization
ITU	International Telecommunication Union
LOF	Loss Of Frame
LOS	Loss Of Signal
MS	Multiplex Section
NCSES	Number of Consecutive Severely Errored Seconds
NE	Network Element
OS	Operations System
OSI	Open Systems Interconnection
Pkg	Package
QOS	Quality of Service
RDN	Relative Distinguished Name
RS	Regenerator Section
SDH	Synchronous Digital Hierarchy
SES	Severely Errored Second
SPI	Synchronous Physical Interface
STM-N	Synchronous Transport Module N
TMN	Telecommunications Management Network
TP	Termination Point
TR	Threshold Reset
TTP	Trail Termination Point
UAS	Unavailable Second

5 Unidirectional Performance Management Model

5.1 Overview

This subclause provides Managed Objects required to support management of unidirectional performance monitoring in SDH Network Elements.

This model defines subclasses of the generic currentData and historyData object classes from Recommendation Q.822 for each kind of monitoring point. For each type of monitoring point, two subclasses of currentData are defined. One is defined for either a 15-minute count or 1-day count period, and provides implicit clearing of threshold crossing alarms at the end of each granularity period. The other subclass is only relevant to 15-minute counting and performs explicit clearing of threshold alarms (Threshold Reset) at the end of a clear 15-minute period (refer to 2.3.4.2/M.2120).

History information could either be collected as part of historyData instances or one of its subclasses or as an eventRecord or one of its subclasses contained in a log. Utilization of a log is not mandatory in this Recommendation.

5.2 Requirements

The unidirectional SDH Performance Monitoring functions shall provide for:

– the ability for a managing system to request the collection of the various Performance events relating to a given monitored entity for a given collection period;

– the ability for a managing system to suspend/resume the performance data collection for a given monitored entity (or set of entities);

– the ability for a managing system to instruct the NE to reset the performance monitoring counters for a given monitored entity (or set of entities);

– the scheduling of performance collection activity within specified time periods, for a given monitored entity (or set of entities);

– the ability for a managing system to request the performance monitoring counters for a given monitored entity (or set of entities);

– the ability for a managed system to send event reports to a managing system to notify the results of the performance data collection, at the end of the collection period;

– the ability for a managing system to instruct the NE to maintain Performance historical data for a specified duration, under specified conditions;

– the ability for a managing system to instruct the NE to remove specific Performance historical data;

– the ability for a managing system to instruct the NE to establish thresholding criteria for a given monitored entity (or set of entities);

– the ability for a managed system to send Quality Of Service Alarms upon threshold violation of a performance counter of a monitored entity.

In order to fulfil the needs for maintenance-based collection and error performance-based collection (refer to Recommendation G.784), the following register sets are required for performance management evaluation:

Starting and ending of a unidirectional unavailability period has to be reported by the instance of the managed object class that hold the 24-hour counts (near end or far end).

Maintenance-based collection for Paths and Multiplex Sections[1]

These requirements are covered by this Recommendation.

Register sets needed:

– 17 (16+1) 15-minute near-end registers for BBE, ES, SES and UAS;

– 17 (16+1) 15-minute far-end registers for BBE, ES, SES and UAS;

– 2 (1+1) 24-hour near-end registers unidirectional for BBE, ES, SES and UAS;

– 2 (1+1) 24-hour far-end registers unidirectional for BBE, ES, SES and UAS.

Error performance-based collection for Paths only

These requirements are covered by Recommendation G.774.1.

Register sets needed:

– 2 (1+1) 24-hour near-end registers for BBE, ES and SES but bidirectional (G.826) behaviour;

[1] The requirements for regenerator sections are covered by Recommendation G.774.1.

– 2 (1+1) 24-hour far-end registers for BBE, ES and SES but bidirectional (G.826) behaviour;

– 2 (1+1) 24-hour bidirectional registers for UAS.

5.3 Model overview

Recommendation G.774.1 does not cover unidirectional unavailability of paths and multiplex sections, because the performance counters of the several currentData and historyData Managed Object Classes behave in the G.826 (the bidirectional) way. Therefore, it is necessary to have new Managed Object Classes for the unidirectional performance monitoring feature to extend the G.774.1 information model.

The unidirectional requirements are reflected in new Managed Object Classes.

In order to avoid redundant information duplication and unuseful implementation effort the CSES events are managed only in the sdhCurrentData subclass instances that have a 15-minute granularity period.

List of the new Managed Object Classes to fulfil the requirements for unidirectional performance monitoring

sdhCurrentDataUnidirectional

msCurrentDataNearEnd, msCurrentDataNearEndTR
pathTerminationCurrentDataNearEnd, pathTerminationCurrentDataNearEndTR
msCurrentDataFarEnd, msCurrentDataFarEndTR
pathTerminationCurrentDataFarEnd, pathTerminationCurrentDataFarEndTR
msHistoryDataNearEnd
pathTerminationHistoryDataNearEnd
msHistoryDataFarEnd
pathTerminationHistoryDataFarEnd

5.4 Other modelling considerations

Since there is no far-end signalling in the regenerator section, the rsCurrentData, rsCurrentDataTR and rsHistoryData Managed Object Classes of Recommendation G.774.1 with the uASCurrentDataPackage and the uASHistoryDataPackage shall be used for near-end monitoring.

No additional Managed Object Classes are needed to fulfil the requirement of monitoring 2 (1+1) 24-hour-registers for bidirectional performance data of paths. The Recommendation G.774.1 pathTerminationCurrentData with the uASCurrentDataPackage plus the farEndCurrentDataPackage and the pathTerminationHistoryData Managed Object Classes with the uASHistoryDataPackage plus the farEndHistoryDataPackage can be used.

New nameBindings and new attributes [far-end unavailable seconds (fEUAS), near-end unavailable seconds (nEUAS)] are added wherever necessary.

All the UAS counters are optional and therefore put in conditional packages.

6 Managed Object Class definitions

6.1 SDH Current Data Unidirectional

sdhCurrentDataUnidirectional MANAGED OBJECT CLASS
DERIVED FROM "Recommendation Q.822:1993": currentData;
CHARACTERIZED BY
"Recommendation Q.822:1994": zeroSuppressionPkg,
"Recommendation Q.822:1994": thresholdPkg,

sdhCurrentDataUnidirectionalPackage PACKAGE
BEHAVIOUR sdhCurrentDataUnidirectionalBehaviour;
ATTRIBUTES
"Recommendation M.3100:1995": currentProblemList GET;;;
CONDITIONAL PACKAGES
"Recommendation G.774.01:1994": historyPackage PRESENT IF
"an instance does not support flexible assignment of the history length",
"Recommendation G.774.01:1994": unavailableTimeAlarmPackage PRESENT IF
"starting and ending of unavailable period has to be reported and the
granularity period is 24 hours";
REGISTERED AS {g774-6MObjectClass 1};

sdhCurrentDataUnidirectionalBehaviour BEHAVIOUR
DEFINED AS
"The sdhCurrentDataUnidirectional class is used to define generic characteristic for unidirectional SDH performance monitoring from which subclasses are defined in order to hold performance event counts for a specific monitoring point. Subclasses of this class are used in order to support performance monitoring of SDH trails at various layers as described in Recommendation G.805. The performance monitoring events ES, SES and BBE which are monitored by some of the subclasses of this subclass are defined in 4.1.1/G.826. The granularityPeriod attribute can only be assigned a value at creation time.

This class can only contain one reference to an instance of the thresholdData object class in the thresholdDataInstance attribute.

If a threshold is reached or crossed then the currentProblemList attribute shall indicate it with the probable cause Threshold crossed. Subclass of this class is used to monitor the near-end or far-end performance data of the trail.

A period of unavailable time begins at the onset of 10 consecutive SES events. These ten seconds are considered to be part of unavailable time. A new period of available time begins at the onset of ten consecutive non-SES events. These ten seconds are considered to be part of available time.

The unavailability conditions are kept separate for near-end and far-end monitoring. This means that only near-end conditions (e.g. 10 consecutive SES at the near end) apply only to near-end unavailability and vice versa only far-end conditions (e.g. 10 consecutive SES at the far end) apply only to far-end unavailability.

For threshold reset subclasses of this object class the following rules apply:

- **No more than one QOS alarm shall be generated until there has been a 15-minute rectangular fixed window with less error count than the low error count threshold and no unavailable period exists.**

- **To provision the high and low threshold value, the counterThresholdAttributList attribute of the Q.822-ThresholdDataInstance is used.**

  In this attribute all the thresholds (high and low) for each necessary counter are stored in a list. This means for example, that the high threshold for ES and the low threshold for ES are individually stored in the same list. It is up to the network element to recognize which is the high and which is the low one.

If the unavailableTimeAlarmPackage is present and if an unavailable period starts, then a communication alarm shall be sent with a probable cause of Unavailable and the presence of this unavailable condition is indicated by the currentProblemList attribute. If an unavailable period is ending, then a communication alarm shall be sent with a probable cause of Unavailable and a severity of Cleared. An available condition is indicated by the absence of the unavailable condition in the current problem list. The unavailable condition has no effect on the operationalState. Each subclass of this class shall define the performance attributes required to hold the mandatory or optional performance events. These performance event counts are inhibited during unavailable time of its own direction (at the near end or at the far end). Attributes which are defined in a subclass of this class shall be included in history information using the historyData, or one of its subclasses, unless it is explicitly specified in the subclass of this class that a particular attribute be not included. Each subclass of this class shall indicate which subclass of the history data is used for history retention. The following conditional packages are not used in this class: filterSuppressionPkg, observedManagedObjectPkg.

Concerning the subclasses of this class the following rule applies:

If a subclass of this class has a granularity period of 15 minutes, it should be either an instance with the threshold reset functionality or an instance without this functionality instantiated (per termination point), but not both.";

6.2 Multiplex Section Current Data Near End

```
msCurrentDataNearEnd MANAGED OBJECT CLASS
DERIVED FROM sdhCurrentDataUnidirectional;
CHARACTERIZED BY
msCurrentDataNearEndPackage PACKAGE
        BEHAVIOUR   msCurrentDataNearEndBehaviour;
        ATTRIBUTES
        "Recommendation X.739:1993": granularityPeriod  REQUIRED VALUES
                SDHPMUNIASN1.SDHGranularityPeriod,
        "Recommendation G.774.01:1994": bBE REPLACE-WITH-DEFAULT GET,
        "Recommendation G.774.01:1994": eS REPLACE-WITH-DEFAULT GET,
        "Recommendation G.774.01:1994": sES REPLACE-WITH-DEFAULT GET;;;
CONDITIONAL PACKAGES
        nearEndUASCurrentDataPackage PRESENT IF
        "an instance supports it",
        "Recommendation G.774.01:1994": cSESCurrentDataPackage PRESENT IF
        " the granularity period is 15 minutes and an instance supports it",
        failureCountsNearEndPackage PRESENT IF
        "an instance supports it",
        eSANearEndPackage PRESENT IF
        "an instance supports it",
        eSBNearEndPackage PRESENT IF
        "an instance supports it";
REGISTERED AS {g774-6MObjectClass 2} ;

msCurrentDataNearEndBehaviour BEHAVIOUR
DEFINED AS
"Instances of the msCurrentDataNearEnd managed object Class are used to hold the current near-end register
counts for a multiplex section trail termination point during a collection period.

The following performance primitives are observed:

EB Errored Block

For the EB performance primitive, the following performance event is defined:

    • BBE Background Block Error

For the EB performance primitive and the following defect: MS-AIS, Excessive-Error, the following performance
events are defined:

    • ES  Errored Second
    • SES  Severely Errored Second
    • UAS  Unavailable Second: This counter is used to store one-second intervals pertaining to an
      unavailable time period at the near end.

In addition, the following optional performance events are defined:

    • FC  Failure Counts (Near End)
    • ESA  Errored Seconds A (Near End)
    • ESB  Errored Seconds B (Near End)

This managed object class uses the msHistoryDataNearEnd managed object class for history retention.
```

A QOS alarm shall be sent as soon as a threshold is reached or crossed. At the end of the granularity period, the QOS alarm is implicitly cleared and, providing there are no other outstanding threshold crossing QOS alarms, threshold crossing is removed from the currentProblemList (i.e. No Notification is Sent) and a new QOS alarm shall be sent if the threshold is reached or crossed again during the next granularity period. Only one threshold value per performance counter will be supported.";

6.3 Multiplex Section Current Data Near End Threshold Reset

msCurrentDataNearEndTR MANAGED OBJECT CLASS
DERIVED FROM sdhCurrentDataUnidirectional;
CHARACTERIZED BY
"Recommendation G.774.01:1994": thresholdResetPackage,
msCurrentDataNearEndTRPackage PACKAGE
BEHAVIOUR
msCurrentDataNearEndTRBehaviour;
ATTRIBUTES
"Recommendation X.739:1993": granularityPeriod PERMITTED VALUES
SDHPMUNIASN1.SDHPVGranularityPeriod,
"Recommendation G.774.01:1994": bBE REPLACE-WITH-DEFAULT GET,
"Recommendation G.774.01:1994": eS REPLACE-WITH-DEFAULT GET,
"Recommendation G.774.01:1994": sES REPLACE-WITH-DEFAULT GET;;;
CONDITIONAL PACKAGES
nearEndUASCurrentDataPackage PRESENT IF
"an instance supports it",
"Recommendation G.774.01:1994": cSESCurrentDataPackage PRESENT IF
" the granularity period is 15 minutes and an instance supports it" ;
REGISTERED AS {g774-6MObjectClass 3} ;

msCurrentDataNearEndTRBehaviour BEHAVIOUR
DEFINED AS
"Instances of the msCurrentDataNearEndTR managed object Class are used to hold the current near-end register counts for a multiplex section trail termination point during a collection period.

The following performance primitives are observed:

EB Errored Block

For the EB performance primitive, the following performance events are defined:

- **BBE Background Block Error**

For the EB performance primitive and the following defect: MS-AIS, Excessive-Error,
the following performance events are defined:

- **ES Errored Second**
- **SES Severely Errored Second**
- **UAS Unavailable Second: This counter is used to store one-second intervals pertaining to an unavailable time period at the near end.**

Only the 15 minutes granularity period must be supported.

This managed object class uses the msHistoryDataNearEnd managed object class for history retention. " ;

6.4 Path Termination Current Data Near End

pathTerminationCurrentDataNearEnd MANAGED OBJECT CLASS
DERIVED FROM sdhCurrentDataUnidirectional;
CHARACTERIZED BY
pathTerminationCurrentDataNearEndPackage PACKAGE

BEHAVIOUR pathTerminationCurrentDataNearEndBehaviour;
ATTRIBUTES
"Recommendation X.739:1993": granularityPeriod REQUIRED VALUES
SDHPMUNIASN1.SDHGranularityPeriod,
"Recommendation G.774.01:1994": bBE REPLACE-WITH-DEFAULT GET,
"Recommendation G.774.01:1994": eS REPLACE-WITH-DEFAULT GET,
"Recommendation G.774.01:1994": sES REPLACE-WITH-DEFAULT GET;;;
CONDITIONAL PACKAGES
nearEndUASCurrentDataPackage PRESENT IF
"an instance supports it",
"Recommendation G.774.01:1994": cSESCurrentDataPackage PRESENT IF
"the granularity period is 15 minutes and an instance supports it",
failureCountsNearEndPackage PRESENT IF
"an instance supports it",
eSANearEndPackage PRESENT IF
"an instance supports it",
eSBNearEndPackage PRESENT IF
"an instance supports it";
REGISTERED AS {g774-6MObjectClass 4} ;

pathTerminationCurrentDataNearEndBehaviour BEHAVIOUR
DEFINED AS
"Instances of the pathTerminationCurrentDataNearEnd managed object Class are used to hold the current near end register counts for a Higher Order Path or Lower Order Path during a collection period.

The following performance primitives are observed:

EB Errored Block

For the EB performance primitive, the following performance events are defined:

- **BBE Background Block Error**

For the EB performance primitive and the following defect: AU-AIS/TU-AIS, Path Trace Mismatch, Signal Label Mismatch, and Loss of TU Multiframe the following performance events are defined:

- **ES Errored Second**
- **SES Severely Errored Second**
- **UAS Unavailable Second: This counter is used to store one-second intervals pertaining to an unavailable time period at the near end.**

In addition, the following optional performance events are defined:

- **FC Failure Counts (Near End)**
- **ESA Errored Seconds A (Near End)**
- **ESB Errored Seconds B (Near End)**

This managed object class uses the pathTerminationHistoryDataNearEnd managed object class for history retention.

A QOS alarm shall be sent as soon as a threshold is reached or crossed. At the end of the granularity period, the QOS alarm is implicitly cleared and, providing there are no other outstanding threshold crossing QOS alarms, threshold crossing is removed from the currentProblemList (i.e. No Notification is Sent) and a new QOS alarm shall be sent if the threshold is reached or crossed again during the next granularity period. Only one threshold value per performance counter will be supported.";

6.5 Path Termination Current Data Near End Threshold Reset

pathTerminationCurrentDataNearEndTR MANAGED OBJECT CLASS
DERIVED FROM sdhCurrentDataUnidirectional;

CHARACTERIZED BY
"Recommendation G.774.01:1994": thresholdResetPackage,
pathTerminationCurrentDataNearEndTRPackage PACKAGE
BEHAVIOUR pathTerminationCurrentDataNearEndTRBehaviour;
ATTRIBUTES
"Recommendation X.739:1993": granularityPeriod PERMITTED VALUES
SDHPMUNIASN1.SDHPVGranularityPeriod,
"Recommendation G.774.01:1994": bBE REPLACE-WITH-DEFAULT GET,
"Recommendation G.774.01:1994": eS REPLACE-WITH-DEFAULT GET,
"Recommendation G.774.01:1994": sES REPLACE-WITH-DEFAULT GET;;;
CONDITIONAL PACKAGES
nearEndUASCurrentDataPackage PRESENT IF
"an instance supports it",
"Recommendation G.774.01:1994": cSESCurrentDataPackage PRESENT IF
" the granularity period is 15 minutes and an instance supports it";
REGISTERED AS {g774-6MObjectClass 5} ;

pathTerminationCurrentDataNearEndTRBehaviour BEHAVIOUR
DEFINED AS
"Instances of the pathTerminationCurrentDataNearEndTR managed object Class are used to hold the current near-end register counts for a Higher Order Path or Lower Order Path during a collection period.

The following performance primitive are observed:

EB Errored Block

For the EB performance primitive, the following performance events are defined:

- **BBE Background Block Error**

For the EB performance primitive and the following defect: AU-AIS/TU-AIS, Path Trace Mismatch, Signal Label Mismatch, and Loss of TU Multiframe the following performance events are defined:

- **ES Errored Second**
- **SES Severely Errored Second**
- **UAS Unavailable Second: This counter is used to store one-second intervals pertaining to an unavailable time period at the near end.**

Only the 15 minutes granularity period must be supported.

This managed object class uses the pathTerminationHistoryDataNearEnd managed object class for history retention.";

6.6 Multiplex Section Current Data Far End

msCurrentDataFarEnd MANAGED OBJECT CLASS
DERIVED FROM sdhCurrentDataUnidirectional;
CHARACTERIZED BY
msCurrentDataFarEndPackage PACKAGE
BEHAVIOUR msCurrentDataFarEndBehaviour;
ATTRIBUTES
"Recommendation X.739:1993": granularityPeriod REQUIRED VALUES
SDHPMUNIASN1.SDHGranularityPeriod,
"Recommendation G.774.01:1994": fEBBE REPLACE-WITH-DEFAULT GET,
"Recommendation G.774.01:1994": fEES REPLACE-WITH-DEFAULT GET,
"Recommendation G.774.01:1994": fESES REPLACE-WITH-DEFAULT GET;;;
CONDITIONAL PACKAGES
farEndUASCurrentDataPackage PRESENT IF
"an instance supports it",

"Recommendation G.774.01:1994": farEndCSESCurrentDataPackage PRESENT IF
" the granularity period is 15 minutes and an instance supports it",
failureCountsFarEndPackage PRESENT IF
"an instance supports it",
eSAFarEndPackage PRESENT IF
"an instance supports it",
eSBFarEndPackage PRESENT IF
"an instance supports it";
REGISTERED AS {g774-6MObjectClass 6} ;

msCurrentDataFarEndBehaviour BEHAVIOUR
DEFINED AS
"Instances of the msCurrentDataFarEnd managed object Class are used to hold the current far-end register counts for a multiplex section trail termination point during a collection period.

The following performance primitives are observed:

FEEB Far-End Errored Block

For the FEEB performance primitive, the following performance events are defined:

- **FEBBE Far-End Background Block Error**

For the FEEB performance primitive and the following defect: RDI the following performance events are defined:

- **FEES Far-End Errored Second**
- **FESES Far-End Severely Errored Second**
- **FEUAS Far-End Unavailable Second: This counter is used to store one-second intervals pertaining to an unavailable time period at the far end.**

In addition, the following optional performance events are defined:

- **FC Failure Counts (Far End)**

- **ESA Errored Seconds A (Far End)**

- **ESB Errored Seconds B (Far End)**

This managed object class uses the msHistoryDataFarEnd managed object class for history retention.

A QOS alarm shall be sent as soon as a threshold is reached or crossed. At the end of the granularity period, the QOS alarm is implicitly cleared and, providing there are no other outstanding threshold crossing QOS alarms, threshold crossing is removed from the currentProblemList (i.e. No Notification is Sent) and a new QOS alarm shall be sent if the threshold is reached or crossed again during the next granularity period. Only one threshold value per performance counter will be supported.";

6.7 Multiplex Section Current Data Far End Threshold Reset

msCurrentDataFarEndTR MANAGED OBJECT CLASS
DERIVED FROM sdhCurrentDataUnidirectional;
CHARACTERIZED BY
"Recommendation G.774.01:1994": thresholdResetPackage,
msCurrentDataFarEndTRPackage PACKAGE
BEHAVIOUR
msCurrentDataFarEndTRBehaviour;
ATTRIBUTES
"Recommendation X.739:1993": granularityPeriod PERMITTED VALUES
SDHPMUNIASN1.SDHPVGranularityPeriod,
"Recommendation G.774.01:1994": fEBBE REPLACE-WITH-DEFAULT GET,

"Recommendation G.774.01:1994": fEES REPLACE-WITH-DEFAULT GET,
"Recommendation G.774.01:1994": fESES REPLACE-WITH-DEFAULT GET;;;
CONDITIONAL PACKAGES
farEndUASCurrentDataPackage PRESENT IF
"an instance supports it",
"Recommendation G.774.01:1994": farEndCSESCurrentDataPackage PRESENT IF
" the granularity period is 15 minutes and an instance supports it";
REGISTERED AS {g774-6MObjectClass 7} ;

msCurrentDataFarEndTRBehaviour BEHAVIOUR
DEFINED AS
"Instances of the msCurrentDataFarEnd managed object Class are used to hold the current far-end register counts for a multiplex section trail termination point during a collection period.

The following performance primitives are observed:

FEEB Far-End Errored Block

For the FEEB performance primitive, the following performance events are defined:

- **FEBBE Far-End Background Block Error**

For the FEEB performance primitive and the following defect: RDI the following performance events are defined:

- **FEES Far-End Errored Second**
- **FESES Far-End Severely Errored Second**
- **FEUAS Far-End Unavailable Second: This counter is used to store one-second intervals pertaining to an unavailable time period at the far end.**

Only the 15 minutes granularity period must be supported.

This managed object class uses the msHistoryDataFarEnd managed object class for history retention." ;

6.8 Path Termination Current Data Far End

pathTerminationCurrentDataFarEnd MANAGED OBJECT CLASS
DERIVED FROM sdhCurrentDataUnidirectional;
CHARACTERIZED BY
pathTerminationCurrentDataFarEndPackage PACKAGE
BEHAVIOUR pathTerminationCurrentDataFarEndBehaviour;
ATTRIBUTES
"Recommendation X.739:1993": granularityPeriod REQUIRED VALUES
SDHPMUNIASN1.SDHGranularityPeriod,
"Recommendation G.774.01:1994": fEBBE REPLACE-WITH-DEFAULT GET,
"Recommendation G.774.01:1994": fEES REPLACE-WITH-DEFAULT GET,
"Recommendation G.774.01:1994": fESES REPLACE-WITH-DEFAULT GET;;;
CONDITIONAL PACKAGES
farEndUASCurrentDataPackage PRESENT IF
"an instance supports it",
"Recommendation G.774.01:1994": farEndCSESCurrentDataPackage PRESENT IF
" the granularity period is 15 minutes and an instance supports it",
failureCountsFarEndPackage PRESENT IF
"an instance supports it",
eSAFarEndPackage PRESENT IF
"an instance supports it",
eSBFarEndPackage PRESENT IF
"an instance supports it";
REGISTERED AS {g774-6MObjectClass 8} ;

pathTerminationCurrentDataFarEndBehaviour BEHAVIOUR
DEFINED AS
"Instances of the pathTerminationCurrentDataFarEnd managed object Class are used to hold the current far end register counts for a Higher Order Path or Lower Order Path during a collection period.

The following performance primitives are observed:

FEEB Far-End Errored Block

For the FEEB performance primitive, the following performance events are defined:

- **FEBBE Far-End Background Block Error**

For the FEEB performance primitive and the following defect: RDI the following performance events are defined:

- **FEES Far-End Errored Second**
- **FESES Far-End Severely Errored Second**
- **FEUAS Far-End Unavailable Second: This counter is used to store one-second intervals pertaining to an unavailable time period at the far end.**

In addition, the following optional performance events are defined:

- **FC Failure Counts (Far End)**

- **ESA Errored Seconds A (Far End)**

- **ESB Errored Seconds B (Far End)**

This managed object class uses the pathTerminationHistoryDataFarEnd managed object class for history retention.

A QOS alarm shall be sent as soon as a threshold is reached or crossed. At the end of the granularity period, the QOS alarm is implicitly cleared and, providing there are no other outstanding threshold crossing QOS alarms, threshold crossing is removed from the currentProblemList (i.e. No Notification is Sent) and a new QOS alarm shall be sent if the threshold is reached or crossed again during the next granularity period. Only one threshold value per performance counter will be supported.";

6.9 Path Termination Current Data Far End Threshold Reset

```
pathTerminationCurrentDataFarEndTR  MANAGED OBJECT CLASS
DERIVED FROM            sdhCurrentDataUnidirectional;
CHARACTERIZED BY
"Recommendation G.774.01:1994": thresholdResetPackage,
pathTerminationCurrentDataFarEndTRPackage PACKAGE
        BEHAVIOUR pathTerminationCurrentDataFarEndTRBehaviour;
        ATTRIBUTES
        "Recommendation X.739:1993": granularityPeriod PERMITTED VALUES
                        SDHPMUNIASN1.SDHPVGranularityPeriod,
        "Recommendation G.774.01:1994": fEBBE  REPLACE-WITH-DEFAULT  GET,
        "Recommendation G.774.01:1994": fEES  REPLACE-WITH-DEFAULT GET,
        "Recommendation G.774.01:1994": fESES  REPLACE-WITH-DEFAULT  GET;;;
CONDITIONAL PACKAGES
        farEndUASCurrentDataPackage PRESENT IF
        "an instance supports it",
        "Recommendation G.774.01:1994": farEndCSESCurrentDataPackage PRESENT IF
        "the granularity period is 15 minutes and an instance supports it";
REGISTERED AS  {g774-6MObjectClass 9} ;
```

pathTerminationCurrentDataFarEndTRBehaviour BEHAVIOUR
DEFINED AS
"Instances of the pathTerminationCurrentDataFarEndTR managed object Class are used to hold the current far-end register counts for a Higher Order Path or Lower Order Path during a collection period.

The following performance primitives are observed:

FEEB Far-End Errored Block

For the FEEB performance primitive, the following performance events are defined:

- **FEBBE Far-End Background Block Error**

For the FEEB performance primitive and the following defect: RDI the following performance events are defined:

- **FEES Far-End Errored Second**
- **FESES Far-End Severely Errored Second**
- **FEUAS Far-End Unavailable Second: This counter is used to store one-second intervals pertaining to an unavailable time period at the far end.**

Only the 15 minutes granularity period must be supported.

This managed object class uses the pathTerminationHistoryDataFarEnd managed object class for history retention.";

6.10 Multiplex Section History Data Near End

msHistoryDataNearEnd MANAGED OBJECT CLASS
DERIVED FROM "Recommendation Q.822:1994":historyData;
CHARACTERIZED BY
msHistoryDataNearEndPackage PACKAGE
BEHAVIOUR
msHistoryDataNearEndBehaviour;
ATTRIBUTES
"Recommendation G.774.01:1994": bBE GET,
"Recommendation G.774.01:1994": eS GET,
"Recommendation G.774.01:1994": sES GET;;;
CONDITIONAL PACKAGES
nearEndUASHistoryDataPackage PRESENT IF
"the containing msCurrentDataNearEnd contains the nearEndUASCurrentDataPackage",
failureCountsNearEndHistoryDataPackage PRESENT IF
"the containing msCurrentDataNearEnd contains the failureCountsNearEndPackage",
eSANearEndHistoryDataPackage PRESENT IF
"the containing msCurrentDataNearEnd contains the eSANearEndPackage",
eSBNearEndHistoryDataPackage PRESENT IF
"the containing msCurrentDataNearEnd contains the eSBNearEndPackage";
REGISTERED AS {g774-6MObjectClass 10} ;

msHistoryDataNearEndBehaviour BEHAVIOUR
DEFINED AS
"Instances of this class are used to store the observed events of an msCurrentDataNearEnd or msCurrentDataNearEndTR object at the end of an observation interval. An instance of this managed object is contained by an msCurrentDataNearEnd or msCurrentDataNearEndTR managed object instance";

6.11 Path Termination History Data Near End

pathTerminationHistoryDataNearEnd MANAGED OBJECT CLASS
DERIVED FROM "Recommendation Q.822:1994":historyData;
CHARACTERIZED BY

pathTerminationHistoryDataNearEndPackage PACKAGE
BEHAVIOUR pathTerminationHistoryDataNearEndBehaviour;
ATTRIBUTES
"Recommendation G.774.01:1994": bBE GET,
"Recommendation G.774.01:1994": eS GET,
"Recommendation G.774.01:1994": sES GET;;;
CONDITIONAL PACKAGES
nearEndUASHistoryDataPackage PRESENT IF
"the containing pathTerminationCurrentDataNearEnd contains the nearEndUASCurrentDataPackage",
failureCountsNearEndHistoryDataPackage PRESENT IF
"the containing pathTerminationCurrentDataNearEnd contains the failureCountsNearEndPackage",
eSANearEndHistoryDataPackage PRESENT IF
"the containing pathTerminationCurrentDataNearEnd contains the eSANearEndPackage",
eSBNearEndHistoryDataPackage PRESENT IF
"the containing pathTerminationCurrentDataNearEnd contains the eSBNearEndPackage";
REGISTERED AS {g774-6MObjectClass 11} ;

pathTerminationHistoryDataNearEndBehaviour BEHAVIOUR
DEFINED AS
"Instances of this class are used to store the observed events of a pathTerminationCurrentDataNearEnd or pathTerminationCurrentDataNearEndTR object at the end of an observation interval. An instance of this managed object is contained by a pathTerminationCurrentDataNearEnd or pathTerminationCurrentDataNearEndTR managed object instance";

6.12 Multiplex Section History Data Far End

msHistoryDataFarEnd MANAGED OBJECT CLASS
DERIVED FROM "Recommendation Q.822:1994":historyData;
CHARACTERIZED BY
msHistoryDataFarEndPackage PACKAGE
BEHAVIOUR
msHistoryDataFarEndBehaviour;
ATTRIBUTES
"Recommendation G.774.01:1994": fEBBE GET,
"Recommendation G.774.01:1994": fEES GET,
"Recommendation G.774.01:1994": fESES GET;;;
CONDITIONAL PACKAGES
farEndUASHistoryDataPackage PRESENT IF
"the containing msCurrentDataFarEnd contains the farEndUASCurrentDataPackage",
failureCountsFarEndHistoryDataPackage PRESENT IF
"the containing msCurrentDataFarEnd contains the failureCountsFarEndPackage",
eSAFarEndHistoryDataPackage PRESENT IF
"the containing msCurrentDataFarEnd contains the eSAFarEndPackage",
eSBFarEndHistoryDataPackage PRESENT IF
"the containing msCurrentDataFarEnd contains the eSBFarEndPackage";
REGISTERED AS {g774-6MObjectClass 12} ;

msHistoryDataFarEndBehaviour BEHAVIOUR
DEFINED AS
"Instances of this class are used to store the observed events of an msCurrentDataFarEnd or msCurrentDataFarEndTR object at the end of an observation interval. An instance of this managed object is contained by an msCurrentDataFarEnd or msCurrentDataFarEndTR managed object instance";

6.13 Path Termination History Data Far End

pathTerminationHistoryDataFarEnd MANAGED OBJECT CLASS
DERIVED FROM "Recommendation Q.822:1994":historyData;
CHARACTERIZED BY
pathTerminationHistoryDataFarEndPackage PACKAGE

BEHAVIOUR pathTerminationHistoryDataFarEndBehaviour;
ATTRIBUTES
"Recommendation G.774.01:1994": fEBBE GET,
"Recommendation G.774.01:1994": fEES GET,
"Recommendation G.774.01:1994": fESES GET;;;
CONDITIONAL PACKAGES
farEndUASHistoryDataPackage PRESENT IF
"the containing pathTerminationCurrentDataFarEnd contains the farEndUASCurrentDataPackage",
failureCountsFarEndHistoryDataPackage PRESENT IF
"the containing pathTerminationCurrentDataFarEnd contains the failureCountsFarEndPackage",
eSAFarEndHistoryDataPackage PRESENT IF
"the containing pathTerminationCurrentDataFarEnd contains the eSAFarEndPackage",
eSBFarEndHistoryDataPackage PRESENT IF
"the containing pathTerminationCurrentDataFarEnd contains the eSBFarEndPackage";
REGISTERED AS {g774-6MObjectClass 13} ;

pathTerminationHistoryDataFarEndBehaviour BEHAVIOUR
DEFINED AS
"Instances of this class are used to store the observed events of a pathTerminationCurrentDataFarEnd or pathTerminationCurrentDataFarEndTR object at the end of an observation interval. An instance of this managed object is contained by a pathTerminationCurrentDataFarEnd or pathTerminationCurrentDataFarEndTR managed object instance";

7 Package definitions

7.1 Near-End Unavailable Second Current Data Package

nearEndUASCurrentDataPackage PACKAGE
BEHAVIOUR
nearEndUASCurrentDataPackageBehaviour;
ATTRIBUTES
nEUAS REPLACE-WITH-DEFAULT GET;
REGISTERED AS {g774-6Package 1};

nearEndUASCurrentDataPackageBehaviour BEHAVIOUR
DEFINED AS
"This package is used to store the counter of one-second intervals pertaining to an Unavailable Time at the near end.";

7.2 Far-End Unavailable Second Current Data Package

farEndUASCurrentDataPackage PACKAGE
BEHAVIOUR
farEndUASCurrentDataPackageBehaviour;
ATTRIBUTES
fEUAS REPLACE-WITH-DEFAULT GET;
REGISTERED AS {g774-6Package 2};

farEndUASCurrentDataPackageBehaviour BEHAVIOUR
DEFINED AS
"This package is used to store the counter of one-second intervals pertaining to an Unavailable Time at the far end.";

7.3 Near-End Unavailable Second History Data Package

nearEndUASHistoryDataPackage PACKAGE
BEHAVIOUR
nearEndUASHistoryDataPackageBehaviour;

ATTRIBUTES
nEUAS GET;
REGISTERED AS {g774-6Package 3};

nearEndUASHistoryDataPackageBehaviour BEHAVIOUR
DEFINED AS
"This package is used to store the corresponding current data counter of one second intervals pertaining to an Unavailable Time at the near end at the end of the granularity period.";

7.4 Far-End Unavailable Second History Data Package

farEndUASHistoryDataPackage PACKAGE
BEHAVIOUR
farEndUASHistoryDataPackageBehaviour;
ATTRIBUTES
fEUAS GET;
REGISTERED AS {g774-6Package 4};

farEndUASHistoryDataPackageBehaviour BEHAVIOUR
DEFINED AS
"This package is used to store the corresponding current data counter of one-second intervals pertaining to an Unavailable Time at the far end at the end of the granularity period.";

7.5 Failure Counts Near-End Package

failureCountsNearEndPackage PACKAGE
BEHAVIOUR
failureCountsNearEndPackageBehaviour;
ATTRIBUTES
fCNearEnd REPLACE-WITH-DEFAULT GET;
REGISTERED AS {g774-6Package 5};

failureCountsNearEndPackageBehaviour BEHAVIOUR
DEFINED AS
"This package is used to store the corresponding failure counts at the near end.";

7.6 Errored Seconds Type A Near-End Package

eSANearEndPackage PACKAGE
BEHAVIOUR
eSANearEndPackageBehaviour;
ATTRIBUTES
eSANearEnd REPLACE-WITH-DEFAULT GET;
REGISTERED AS {g774-6Package 6};

eSANearEndPackageBehaviour BEHAVIOUR
DEFINED AS
"This package is used to store the errored seconds of type A at the near end.";

7.7 Errored Seconds Type B Near-End Package

eSBNearEndPackage PACKAGE
BEHAVIOUR
eSBNearEndPackageBehaviour;
ATTRIBUTES
eSBNearEnd REPLACE-WITH-DEFAULT GET;
REGISTERED AS {g774-6Package 7};

eSBNearEndPackageBehaviour BEHAVIOUR
DEFINED AS
"This package is used to store the errored seconds of type B at the near end.";

7.8 Failure Counts Far-End Package

failureCountsFarEndPackage PACKAGE
BEHAVIOUR
failureCountsFarEndPackageBehaviour;
ATTRIBUTES
fCFarEnd REPLACE-WITH-DEFAULT GET;
REGISTERED AS {g774-6Package 8};

failureCountsFarEndPackageBehaviour BEHAVIOUR
DEFINED AS
"This package is used to store the corresponding failure counts at the far end.";

7.9 Errored Seconds Type A Far-End Package

eSAFarEndPackage PACKAGE
BEHAVIOUR
eSAFarEndPackageBehaviour;
ATTRIBUTES
eSAFarEnd REPLACE-WITH-DEFAULT GET;
REGISTERED AS {g774-6Package 9};

eSAFarEndPackageBehaviour BEHAVIOUR
DEFINED AS
"This package is used to store the errored seconds of type A at the far end.";

7.10 Errored Seconds Type B Far-End Package

eSBFarEndPackage PACKAGE
BEHAVIOUR
eSBFarEndPackageBehaviour;
ATTRIBUTES
eSBFarEnd REPLACE-WITH-DEFAULT GET;
REGISTERED AS {g774-6Package 10};

eSBFarEndPackageBehaviour BEHAVIOUR
DEFINED AS
"This package is used to store the errored seconds of type B at the far end.";

7.11 Failure Counts Near-End History Data Package

failureCountsNearEndHistoryDataPackage PACKAGE
BEHAVIOUR
failureCountsNearEndHistoryDataPackageBehaviour;
ATTRIBUTES
fCNearEnd GET;
REGISTERED AS {g774-6Package 11};

failureCountsNearEndHistoryDataPackageBehaviour BEHAVIOUR
DEFINED AS
"This package is used to store the corresponding failure counts at the near end at the end of the granularity period.";

7.12 Errored Seconds Type A Near-End History Data Package

```
eSANearEndHistoryDataPackage PACKAGE
        BEHAVIOUR
                eSANearEndHistoryDataPackageBehaviour;
        ATTRIBUTES
                eSANearEnd GET;
REGISTERED AS {g774-6Package 12};

eSANearEndHistoryDataPackageBehaviour BEHAVIOUR
DEFINED AS
"This package is used to store the corresponding errored seconds of type A at the near end at the end of the
granularity period.";
```

7.13 Errored Seconds Type B Near-End History Data Package

```
eSBNearEndHistoryDataPackage PACKAGE
        BEHAVIOUR
                eSBNearEndHistoryDataPackageBehaviour;
        ATTRIBUTES
                eSBNearEnd GET;
REGISTERED AS {g774-6Package 13};

eSBNearEndHistoryDataPackageBehaviour BEHAVIOUR
DEFINED AS
"This package is used to store the corresponding errored seconds of type B at the near end at the end of the
granularity period.";
```

7.14 Failure Counts Far-End History Data Package

```
failureCountsFarEndHistoryDataPackage PACKAGE
        BEHAVIOUR
                failureCountsFarEndHistoryDataPackageBehaviour;
        ATTRIBUTES
                fCFarEnd GET;
REGISTERED AS {g774-6Package 14};

failureCountsFarEndHistoryDataPackageBehaviour BEHAVIOUR
DEFINED AS
"This package is used to store the corresponding failure counts at the far end at the end of the granularity
period.";
```

7.15 Errored Seconds Type A Far-End History Data Package

```
eSAFarEndHistoryDataPackage PACKAGE
        BEHAVIOUR
                eSAFarEndHistoryDataPackageBehaviour;
        ATTRIBUTES
                eSAFarEnd GET;
REGISTERED AS {g774-6Package 15};

cSAFarEndHistoryDataPackageBehaviour BEHAVIOUR
DEFINED AS
"This package is used to store the corresponding errored seconds of type A at the far end at the end of the
granularity period.";
```

7.16 Errored Seconds Type B Far-End History Data Package

eSBFarEndHistoryDataPackage PACKAGE
BEHAVIOUR
eSBFarEndHistoryDataPackageBehaviour;
ATTRIBUTES
eSBFarEnd GET;
REGISTERED AS {g774-6Package 16};

eSBFarEndHistoryDataPackageBehaviour BEHAVIOUR
DEFINED AS
"This package is used to store the corresponding errored seconds of type B at the far end at the end of the granularity period.";

8 Attributes definitions

8.1 Near-End Unavailable Seconds

nEUAS ATTRIBUTE
DERIVED FROM "Recommendation X.721 | ISO/IEC 10165-2:1992": counter;
BEHAVIOUR nEUASBeh BEHAVIOUR
DEFINED AS
"The value of the nEUAS attribute represents the count of one-second intervals pertaining to an UnavailableTime at the near end. A period of unavailable time begins at the onset of 10 consecutive SES events. These ten seconds are considered to be part of unavailable time. A new period of available time begins at the onset of ten consecutive non-SES events. These ten seconds are considered to be part of available time.";;
REGISTERED AS {g774-6Attribute 1};

8.2 Far-End Unavailable Seconds

fEUAS ATTRIBUTE
DERIVED FROM "Recommendation X.721 | ISO/IEC 10165-2:1992": counter;
BEHAVIOUR fEUASBeh BEHAVIOUR
DEFINED AS
"The value of the fEUAS attribute represents the count of one-second intervals pertaining to an UnavailableTime at the far end. A period of unavailable time begins at the onset of 10 consecutive SES events. These ten seconds are considered to be part of unavailable time. A new period of available time begins at the onset of ten consecutive non-SES events. These ten seconds are considered to be part of available time.";;
REGISTERED AS {g774-6Attribute 2};

8.3 Failure Counts Near End

fCNearEnd ATTRIBUTE
DERIVED FROM "Recommendation X.721 | ISO/IEC 10165-2:1992": counter;
BEHAVIOUR fCNearEndBeh BEHAVIOUR
DEFINED AS
"This parameter is a count of the number of occurrences of near-end failure events, and is incremented by one each time a near-end failure event begins.";;
REGISTERED AS {g774-6Attribute 3};

8.4 Errored Seconds Type A Near End

eSANearEnd ATTRIBUTE
DERIVED FROM "Recommendation X.721 | ISO/IEC 10165-2:1992": counter;
BEHAVIOUR eSANearEndBeh BEHAVIOUR

DEFINED AS

"This parameter is a count of the one-second intervals containing a single errored block, and none of the specific defects listed below:

- **OOF, LOS for regenerator sections**
- **AIS for multiplex section near end**
- **AIS, LOP for higher order and lower order virtual containers**

";;

REGISTERED AS {g774-6Attribute 4};

8.5 Errored Seconds Type B Near End

eSBNearEnd ATTRIBUTE

DERIVED FROM "Recommendation X.721 | ISO/IEC 10165-2:1992": counter;

BEHAVIOUR eSBNearEndBeh BEHAVIOUR

DEFINED AS

"This parameter is a count of the one-second intervals containing more than a single errored block, less than the number of errored blocks that is required to declare an SES, and none of the specific defects listed below:

- **OOF, LOS for regenerator sections**
- **AIS for multiplex section near end**
- **AIS, LOP for higher order and lower order virtual containers**

";;

REGISTERED AS {g774-6Attribute 5};

8.6 Failure Counts Far End

fCFarEnd ATTRIBUTE

DERIVED FROM "Recommendation X.721 | ISO/IEC 10165-2:1992": counter;

BEHAVIOUR fCFarEndBeh BEHAVIOUR

DEFINED AS

"This parameter is a count of the number of occurences of far-end failure events, and is incremented by one each time a RDI event begins.

";

REGISTERED AS {g774-6Attribute 6};

8.7 Errored Seconds Type A Far End

eSAFarEnd ATTRIBUTE

DERIVED FROM "Recommendation X.721 | ISO/IEC 10165-2:1992": counter;

BEHAVIOUR eSAFarEndBeh BEHAVIOUR

DEFINED AS

"This parameter is a count of the one-second intervals containing a single errored block, and none of the specific defects listed below:

- **RDI for multiplex section far end**
- **RDI for higher order and lower order virtual containers**

";;

REGISTERED AS {g774-6Attribute 7};

8.8 Errored Seconds Type B Far End

eSBFarEnd ATTRIBUTE

DERIVED FROM "Recommendation X.721 | ISO/IEC 10165-2:1992": counter;

BEHAVIOUR eSBFarEndBeh BEHAVIOUR

DEFINED AS

"This parameter is a count of the one-second intervals containing more than a single errored block, less than the number of errored blocks that is required to declare an SES, and none of the specific defects listed below:

- **RDI for multiplex section far end**

- **RDI for higher order and lower order virtual containers**

";;
REGISTERED AS {g774-6Attribute 8};

9 Actions

None.

10 Notifications

None.

11 Parameters

None.

12 Name binding definitions

12.1 MS Current Data Near End – MS TTP Sink

msCurrentDataNearEnd-msTTPSink NAME BINDING
SUBORDINATE OBJECT CLASS msCurrentDataNearEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774:1992":msTTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993":scannerId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 1};

12.2 MS Current Data Near-End Threshold Reset – MS TTP Sink

msCurrentDataNearEndTR-msTTPSink NAME BINDING
SUBORDINATE OBJECT CLASS msCurrentDataNearEndTR AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774:1992":msTTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993":scannerId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 2};

12.3 Path Termination Current Data Near End – VC4 TTP Sink

pathTerminationCurrentDataNearEnd-vc4TTPSink NAME BINDING
SUBORDINATE OBJECT CLASS pathTerminationCurrentDataNearEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774:1992":vc4TTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;

DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 3};

12.4 Path Termination Current Data Near End – VC3 TTP Sink

pathTerminationCurrentDataNearEnd-vc3TTPSink NAME BINDING
SUBORDINATE OBJECT CLASS pathTerminationCurrentDataNearEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774:1992":vc3TTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 4};

12.5 Path Termination Current Data Near End – VC2 TTP Sink

pathTerminationCurrentDataNearEnd-vc2TTPSink NAME BINDING
SUBORDINATE OBJECT CLASS pathTerminationCurrentDataNearEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774:1992":vc2TTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 5};

12.6 Path Termination Current Data Near End – VC12 TTP Sink

pathTerminationCurrentDataNearEnd-vc12TTPSink NAME BINDING
SUBORDINATE OBJECT CLASS pathTerminationCurrentDataNearEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774:1992":vc12TTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 6};

12.7 Path Termination Current Data Near End – VC11 TTP Sink

pathTerminationCurrentDataNearEnd-vc11TTPSink NAME BINDING
SUBORDINATE OBJECT CLASS pathTerminationCurrentDataNearEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774:1992":vc11TTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 7};

12.8 Path Termination Current Data Near-End Threshold Reset – VC4 TTP Sink

```
pathTerminationCurrentDataNearEndTR-vc4TTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS pathTerminationCurrentDataNearEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774:1992":vc4TTPSink AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 8};
```

12.9 Path Termination Current Data Near-End Threshold Reset – VC3 TTP Sink

```
pathTerminationCurrentDataNearEndTR-vc3TTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS pathTerminationCurrentDataNearEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774:1992":vc3TTPSink AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 9};
```

12.10 Path Termination Current Data Near-End Threshold Reset – VC2 TTP Sink

```
pathTerminationCurrentDataNearEndTR-vc2TTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS pathTerminationCurrentDataNearEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774:1992":vc2TTPSink AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 10};
```

12.11 Path Termination Current Data Near-End Threshold Reset – VC12 TTP Sink

```
pathTerminationCurrentDataNearEndTR-vc12TTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS pathTerminationCurrentDataNearEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774:1992":vc12TTPSink AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 11};
```

12.12 Path Termination Current Data Near-End Threshold Reset – VC11 TTP Sink

```
pathTerminationCurrentDataNearEndTR-vc11TTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS pathTerminationCurrentDataNearEndTR AND SUBCLASSES;
 NAMED BY
```

```
 SUPERIOR OBJECT CLASS "Recommendation G.774:1992":vc11TTPSink AND SUBCLASSES;
 WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
 WITH-REFERENCE-OBJECT ,
 WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
 DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 12};
```

12.13 MS Current Data Far End – MS TTP Sink

```
msCurrentDataFarEnd-msTTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS msCurrentDataFarEnd AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774:1992":msTTPSink AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 13};
```

12.14 MS Current Data Far-End Threshold Reset – MS TTP Sink

```
msCurrentDataFarEndTR-msTTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS msCurrentDataFarEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774:1992":msTTPSink AND SUBCLASSES;
  WITH ATTRIBUTE   "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 14};
```

12.15 Path Termination Current Data Far End – VC4 TTP Sink

```
pathTerminationCurrentDataFarEnd-vc4TTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS pathTerminationCurrentDataFarEnd AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774:1992":vc4TTPSink AND SUBCLASSES;
  WITH ATTRIBUTE  "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 15};
```

12.16 Path Termination Current Data Far End – VC3 TTP Sink

```
pathTerminationCurrentDataFarEnd-vc3TTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS pathTerminationCurrentDataFarEnd AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774:1992":vc3TTPSink AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
```

WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 16};

12.17 Path Termination Current Data Far End – VC2 TTP Sink

pathTerminationCurrentDataFarEnd-vc2TTPSink NAME BINDING
SUBORDINATE OBJECT CLASS pathTerminationCurrentDataFarEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774:1992":vc2TTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 17};

12.18 Path Termination Current Data Far End – VC12 TTP Sink

pathTerminationCurrentDataFarEnd-vc12TTPSink NAME BINDING
SUBORDINATE OBJECT CLASS pathTerminationCurrentDataFarEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774:1992":vc12TTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 18};

12.19 Path Termination Current Data Far End – VC11 TTP Sink

pathTerminationCurrentDataFarEnd-vc11TTPSink NAME BINDING
SUBORDINATE OBJECT CLASS pathTerminationCurrentDataFarEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774:1992":vc11TTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 19};

12.20 Path Termination Current Data Far-End Threshold Reset – VC4 TTP Sink

pathTerminationCurrentDataFarEndTR-vc4TTPSink NAME BINDING
SUBORDINATE OBJECT CLASS pathTerminationCurrentDataFarEndTR AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774:1992":vc4TTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 20};

12.21 Path Termination Current Data Far-End Threshold Reset – VC3 TTP Sink

```
pathTerminationCurrentDataFarEndTR-vc3TTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS pathTerminationCurrentDataFarEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774:1992":vc3TTPSink AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 21};
```

12.22 Path Termination Current Data Far-End Threshold Reset – VC2 TTP Sink

```
pathTerminationCurrentDataFarEndTR-vc2TTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS pathTerminationCurrentDataFarEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774:1992":vc2TTPSink AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 22};
```

12.23 Path Termination Current Data Far-End Threshold Reset – VC12 TTP Sink

```
pathTerminationCurrentDataFarEndTR-vc12TTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS pathTerminationCurrentDataFarEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774:1992":vc12TTPSink AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 23};
```

12.24 Path Termination Current Data Far-End Threshold Reset – VC11 TTP Sink

```
pathTerminationCurrentDataFarEndTR-vc11TTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS pathTerminationCurrentDataFarEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774:1992":vc11TTPSink AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 24};
```

12.25 Path Termination Current Data Near End – AU4 Supervised CTP Sink

```
pathTerminationCurrentDataNearEnd-au4SupervisedCTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS pathTerminationCurrentDataNearEnd AND SUBCLASSES;
```

NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":au4SupervisedCTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 25};

12.26 Path Termination Current Data Near End – AU3 Supervised CTP Sink

pathTerminationCurrentDataNearEnd-au3SupervisedCTPSink NAME BINDING
SUBORDINATE OBJECT CLASS pathTerminationCurrentDataNearEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":au3SupervisedCTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 26};

12.27 Path Termination Current Data Near End – TU3 Supervised CTP Sink

pathTerminationCurrentDataNearEnd-Tu3SupervisedCTPSink NAME BINDING
SUBORDINATE OBJECT CLASS pathTerminationCurrentDataNearEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":tu3SupervisedCTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 27};

12.28 Path Termination Current Data Near End – TU2 Supervised CTP Sink

pathTerminationCurrentDataNearEnd-Tu2SupervisedCTPSink NAME BINDING
SUBORDINATE OBJECT CLASS pathTerminationCurrentDataNearEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":tu2SupervisedCTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 28};

12.29 Path Termination Current Data Near End – TU12 Supervised CTP Sink

pathTerminationCurrentDataNearEnd-Tu12SupervisedCTPSink NAME BINDING
SUBORDINATE OBJECT CLASS pathTerminationCurrentDataNearEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":tu12SupervisedCTPSinkAND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;

CREATE
WITH-REFERENCE-OBJECT,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 29};

12.30 Path Termination Current Data Near End – TU11 Supervised CTP Sink

pathTerminationCurrentDataNearEnd-Tu11SupervisedCTPSink NAME BINDING
SUBORDINATE OBJECT CLASS pathTerminationCurrentDataNearEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":tu11SupervisedCTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 30};

12.31 Path Termination Current Data Far End – AU4 Supervised CTP Sink

pathTerminationCurrentDataFarEnd-au4SupervisedCTPSink NAME BINDING
SUBORDINATE OBJECT CLASS pathTerminationCurrentDataFarEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":au4SupervisedCTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 31};

12.32 Path Termination Current Data Far End – AU3 Supervised CTP Sink

pathTerminationCurrentDataFarEnd-au3SupervisedCTPSink NAME BINDING
SUBORDINATE OBJECT CLASS pathTerminationCurrentDataFarEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":au3SupervisedCTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 32};

12.33 Path Termination Current Data Far End – TU3 Supervised CTP Sink

pathTerminationCurrentDataFarEnd-Tu3SupervisedCTPSink NAME BINDING
SUBORDINATE OBJECT CLASS pathTerminationCurrentDataFarEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":tu3SupervisedCTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT,

WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 33};

12.34 Path Termination Current Data Far End – TU2 Supervised CTP Sink

pathTerminationCurrentDataFarEnd-Tu2SupervisedCTPSink NAME BINDING
SUBORDINATE OBJECT CLASS pathTerminationCurrentDataFarEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":tu2SupervisedCTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 34};

12.35 Path Termination Current Data Far End – TU12 Supervised CTP Sink

pathTerminationCurrentDataFarEnd-Tu12SupervisedCTPSink NAME BINDING
SUBORDINATE OBJECT CLASS pathTerminationCurrentDataFarEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":tu12SupervisedCTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 35};

12.36 Path Termination Current Data Far End – TU11 Supervised CTP Sink

pathTerminationCurrentDataFarEnd-Tu11SupervisedCTPSink NAME BINDING
SUBORDINATE OBJECT CLASS pathTerminationCurrentDataFarEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":tu11SupervisedCTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 36};

12.37 Path Termination Current Data Near-End TR – AU4 Supervised CTP Sink

pathTerminationCurrentDataNearEndTR-au4SupervisedCTPSink NAME BINDING
SUBORDINATE OBJECT CLASS pathTerminationCurrentDataNearEndTR AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":au4SupervisedCTPSink AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT,
WITH-AUTOMATIC-INSTANCE-NAMING;

```
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 37};
```

12.38 Path Termination Current Data Near-End TR – AU3 Supervised CTP Sink

```
pathTerminationCurrentDataNearEndTR-au3SupervisedCTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS  pathTerminationCurrentDataNearEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":au3SupervisedCTPSink AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 38};
```

12.39 Path Termination Current Data Near-End TR – TU3 Supervised CTP Sink

```
pathTerminationCurrentDataNearEndTR-Tu3SupervisedCTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS  pathTerminationCurrentDataNearEndTR AND SUBCLASSES;
 NAMED BY
 SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":tu3SupervisedCTPSink AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 39};
```

12.40 Path Termination Current Data Near-End TR – TU2 Supervised CTP Sink

```
pathTerminationCurrentDataNearEndTR-Tu2SupervisedCTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS  pathTerminationCurrentDataNearEndTR AND SUBCLASSES;
 NAMED BY
 SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":tu2SupervisedCTPSink AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 40};
```

12.41 Path Termination Current Data Near-End TR – TU12 Supervised CTP Sink

```
pathTerminationCurrentDataNearEndTR-Tu12SupervisedCTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS  pathTerminationCurrentDataNearEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":tu12SupervisedCTPSinkAND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 41};
```

12.42 Path Termination Current Data Near-End TR – TU11 Supervised CTP Sink

```
pathTerminationCurrentDataNearEndTR-Tu11SupervisedCTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS  pathTerminationCurrentDataNearEndTR AND SUBCLASSES;
 NAMED BY
 SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":tu11SupervisedCTPSinkAND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 42};
```

12.43 Path Termination Current Data Far-End TR – AU4 Supervised CTP Sink

```
pathTerminationCurrentDataFarEndTR-au4SupervisedCTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS  pathTerminationCurrentDataFarEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":au4SupervisedCTPSinkAND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 43};
```

12.44 Path Termination Current Data Far-End TR – AU3 Supervised CTP Sink

```
pathTerminationCurrentDataFarEndTR-au3SupervisedCTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS  pathTerminationCurrentDataFarEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":au3SupervisedCTPSinkAND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 44};
```

12.45 Path Termination Current Data Far-End TR – TU3 Supervised CTP Sink

```
pathTerminationCurrentDataFarEndTR-Tu3SupervisedCTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS  pathTerminationCurrentDataFarEndTR AND SUBCLASSES;
 NAMED BY
 SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":tu3SupervisedCTPSink AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 45};
```

12.46 Path Termination Current Data Far-End TR – TU2 Supervised CTP Sink

```
pathTerminationCurrentDataFarEndTR-Tu2SupervisedCTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS  pathTerminationCurrentDataFarEndTR AND SUBCLASSES;
 NAMED BY
 SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":tu2SupervisedCTPSink AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 46};
```

12.47 Path Termination Current Data Far-End TR – TU12 Supervised CTP Sink

```
pathTerminationCurrentDataFarEndTR-Tu12SupervisedCTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS  pathTerminationCurrentDataFarEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":tu12SupervisedCTPSinkAND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 47};
```

12.48 Path Termination Current Data Far-End TR – TU11 Supervised CTP Sink

```
pathTerminationCurrentDataFarEndTR-Tu11SupervisedCTPSink NAME BINDING
 SUBORDINATE OBJECT CLASS  pathTerminationCurrentDataFarEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774.05:1995":tu11SupervisedCTPSink AND
SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 48};
```

12.49 Path Termination Current Data Near End – VC4 TTP Sink R1

```
pathTerminationCurrentDataNearEnd-vc4TTPSinkR1 NAME BINDING
 SUBORDINATE OBJECT CLASS
 pathTerminationCurrentDataNearEnd AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774":vc4TTPSinkR1 AND SUBCLASSES;
  WITH ATTRIBUTE  "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 49};
```

12.50 Path Termination Current Data Near End – VC3 TTP Sink R1

```
pathTerminationCurrentDataNearEnd-vc3TTPSinkR1 NAME BINDING
 SUBORDINATE OBJECT CLASS
 pathTerminationCurrentDataNearEnd AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS  "Recommendation G.774":vc3TTPSinkR1 AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 50};
```

12.51 Path Termination Current Data Near End – VC2 TTP Sink R1

```
pathTerminationCurrentDataNearEnd-vc2TTPSinkR1 NAME BINDING
 SUBORDINATE OBJECT CLASS
 pathTerminationCurrentDataNearEnd AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS  "Recommendation G.774":vc2TTPSinkR1 AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 51};
```

12.52 Path Termination Current Data Near End – VC12 TTP Sink R1

```
pathTerminationCurrentDataNearEnd-vc12TTPSinkR1 NAME BINDING
 SUBORDINATE OBJECT CLASS
 pathTerminationCurrentDataNearEnd AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774":vc12TTPSinkR1 AND SUBCLASSES;
  WITH ATTRIBUTE  "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 52};
```

12.53 Path Termination Current Data Near End – VC11 TTP Sink R1

```
pathTerminationCurrentDataNearEnd-vc11TTPSinkR1 NAME BINDING
 SUBORDINATE OBJECT CLASS
 pathTerminationCurrentDataNearEnd AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774":vc11TTPSinkR1 AND SUBCLASSES;
 WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 53};
```

12.54 Path Termination Current Data Near-End Threshold Reset – VC4 TTP Sink R1

```
pathTerminationCurrentDataNearEndTR-vc4TTPSinkR1 NAME BINDING
 SUBORDINATE OBJECT CLASS
 pathTerminationCurrentDataNearEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774":vc4TTPSinkR1 AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 54};
```

12.55 Path Termination Current Data Near-End Threshold Reset – VC3 TTP Sink R1

```
pathTerminationCurrentDataNearEndTR-vc3TTPSinkR1 NAME BINDING
 SUBORDINATE OBJECT CLASS
 pathTerminationCurrentDataNearEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774":vc3TTPSinkR1 AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 55};
```

12.56 Path Termination Current Data Near-End Threshold Reset – VC2 TTP Sink R1

```
pathTerminationCurrentDataNearEndTR-vc2TTPSinkR1 NAME BINDING
 SUBORDINATE OBJECT CLASS
 pathTerminationCurrentDataNearEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774":vc2TTPSinkR1 AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 56};
```

12.57 Path Termination Current Data Near-End Threshold Reset – VC12 TTP Sink R1

```
pathTerminationCurrentDataNearEndTR-vc12TTPSinkR1 NAME BINDING
 SUBORDINATE OBJECT CLASS
 pathTerminationCurrentDataNearEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774":vc12TTPSinkR1 AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 57};
```

12.58 Path Termination Current Data Near-End Threshold Reset – VC11 TTP Sink R1

pathTerminationCurrentDataNearEndTR-vc11TTPSinkR1 NAME BINDING
SUBORDINATE OBJECT CLASS
pathTerminationCurrentDataNearEndTR AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774":vc11TTPSinkR1 AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 58};

12.59 Path Termination Current Data Far End – VC4 TTP Sink R1

pathTerminationCurrentDataFarEnd-vc4TTPSinkR1 NAME BINDING
SUBORDINATE OBJECT CLASS
pathTerminationCurrentDataFarEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774":vc4TTPSinkR1 AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 59};

12.60 Path Termination Current Data Far End – VC3 TTP Sink R1

pathTerminationCurrentDataFarEnd-vc3TTPSinkR1 NAME BINDING
SUBORDINATE OBJECT CLASS
pathTerminationCurrentDataFarEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774":vc3TTPSinkR1 AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 60};

12.61 Path Termination Current Data Far End – VC2 TTP Sink R1

pathTerminationCurrentDataFarEnd-vc2TTPSinkR1 NAME BINDING
SUBORDINATE OBJECT CLASS
pathTerminationCurrentDataFarEnd AND SUBCLASSES;
NAMED BY
SUPERIOR OBJECT CLASS "Recommendation G.774":vc2TTPSinkR1 AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
CREATE
WITH-REFERENCE-OBJECT ,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 61};

12.62 Path Termination Current Data Far End – VC12 TTP Sink R1

```
pathTerminationCurrentDataFarEnd-vc12TTPSinkR1 NAME BINDING
 SUBORDINATE OBJECT CLASS
 pathTerminationCurrentDataFarEnd AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774":vc12TTPSinkR1 AND SUBCLASSES;
  WITH ATTRIBUTE  "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 62};
```

12.63 Path Termination Current Data Far End – VC11 TTP Sink R1

```
pathTerminationCurrentDataFarEnd-vc11TTPSinkR1 NAME BINDING
 SUBORDINATE OBJECT CLASS
 pathTerminationCurrentDataFarEnd AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774":vc11TTPSinkR1 AND SUBCLASSES;
 WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 63};
```

12.64 Path Termination Current Data Far-End Threshold Reset – VC4 TTP Sink R1

```
pathTerminationCurrentDataFarEndTR-vc4TTPSinkR1 NAME BINDING
 SUBORDINATE OBJECT CLASS
 pathTerminationCurrentDataFarEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774":vc4TTPSinkR1 AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 64};
```

12.65 Path Termination Current Data Far-End Threshold Reset – VC3 TTP Sink R1

```
pathTerminationCurrentDataFarEndTR-vc3TTPSinkR1 NAME BINDING
 SUBORDINATE OBJECT CLASS
 pathTerminationCurrentDataFarEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774":vc3TTPSinkR1 AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 65};
```

12.66 Path Termination Current Data Far-End Threshold Reset – VC2 TTP Sink R1

```
pathTerminationCurrentDataFarEndTR-vc2TTPSinkR1 NAME BINDING
 SUBORDINATE OBJECT CLASS
 pathTerminationCurrentDataFarEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774":vc2TTPSinkR1 AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 66};
```

12.67 Path Termination Current Data Far-End Threshold Reset – VC12 TTP Sink R1

```
pathTerminationCurrentDataFarEndTR-vc12TTPSinkR1 NAME BINDING
 SUBORDINATE OBJECT CLASS
 pathTerminationCurrentDataFarEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774":vc12TTPSinkR1 AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 67};
```

12.68 Path Termination Current Data Far-End Threshold Reset – VC11 TTP Sink R1

```
pathTerminationCurrentDataFarEndTR-vc11TTPSinkR1 NAME BINDING
 SUBORDINATE OBJECT CLASS
 pathTerminationCurrentDataFarEndTR AND SUBCLASSES;
 NAMED BY
  SUPERIOR OBJECT CLASS "Recommendation G.774":vc11TTPSinkR1 AND SUBCLASSES;
  WITH ATTRIBUTE "Recommendation X.739:1993": scannerId;
 CREATE
  WITH-REFERENCE-OBJECT ,
  WITH-AUTOMATIC-INSTANCE-NAMING;
 DELETE
  DELETES-CONTAINED-OBJECTS;
REGISTERED AS {g774-6NameBinding 68};
```

13 Subordination rules

None.

14 Pointer constraints

None.

15 Supporting ASN.1 productions

```
SDHPMUNIASN1 {itu-t(0) recommendation(0) g(7) g774(774) hyphen(127) pmUni(06) informationModel(0)
asn1Module(2) sdhpmUni (0)}
```

DEFINITIONS IMPLICIT TAGS ::=

BEGIN

-- EXPORTS everything

IMPORTS

TimePeriod FROM MetricModule {joint-iso-itu ms(9) function(2) part11(11) asn1Module(2) 0};

sdhPMUni OBJECT IDENTIFIER ::= {itu-t(0) recommendation(0) g(7) g774(774) hyphen(127) pmUni(06) informationModel(0)}

g774-6MObjectClass OBJECT IDENTIFIER ::= {sdhPMUni managedObjectClass(3)}

g774-6Attribute OBJECT IDENTIFIER ::= {sdhPMUni attribute(7)}

g774-6NameBinding OBJECT IDENTIFIER ::= {sdhPMUni nameBinding(6)}

g774-6Package OBJECT IDENTIFIER ::= {sdhPMUni package(4)}

SDHGranularityPeriod ::= TimePeriod (WITH COMPONENTS {minutes (15), days(1)})

SDHPVGranularityPeriod ::= TimePeriod (WITH COMPONENTS {minutes (15)})

END *-- end of SDHPMUNIASN1*

APPENDIX I

Naming and inheritance diagrams

The naming and inheritance trees are covering only the managed object classes of this Recommendation (see Figures I.1, I.2, I.3 and I.4).

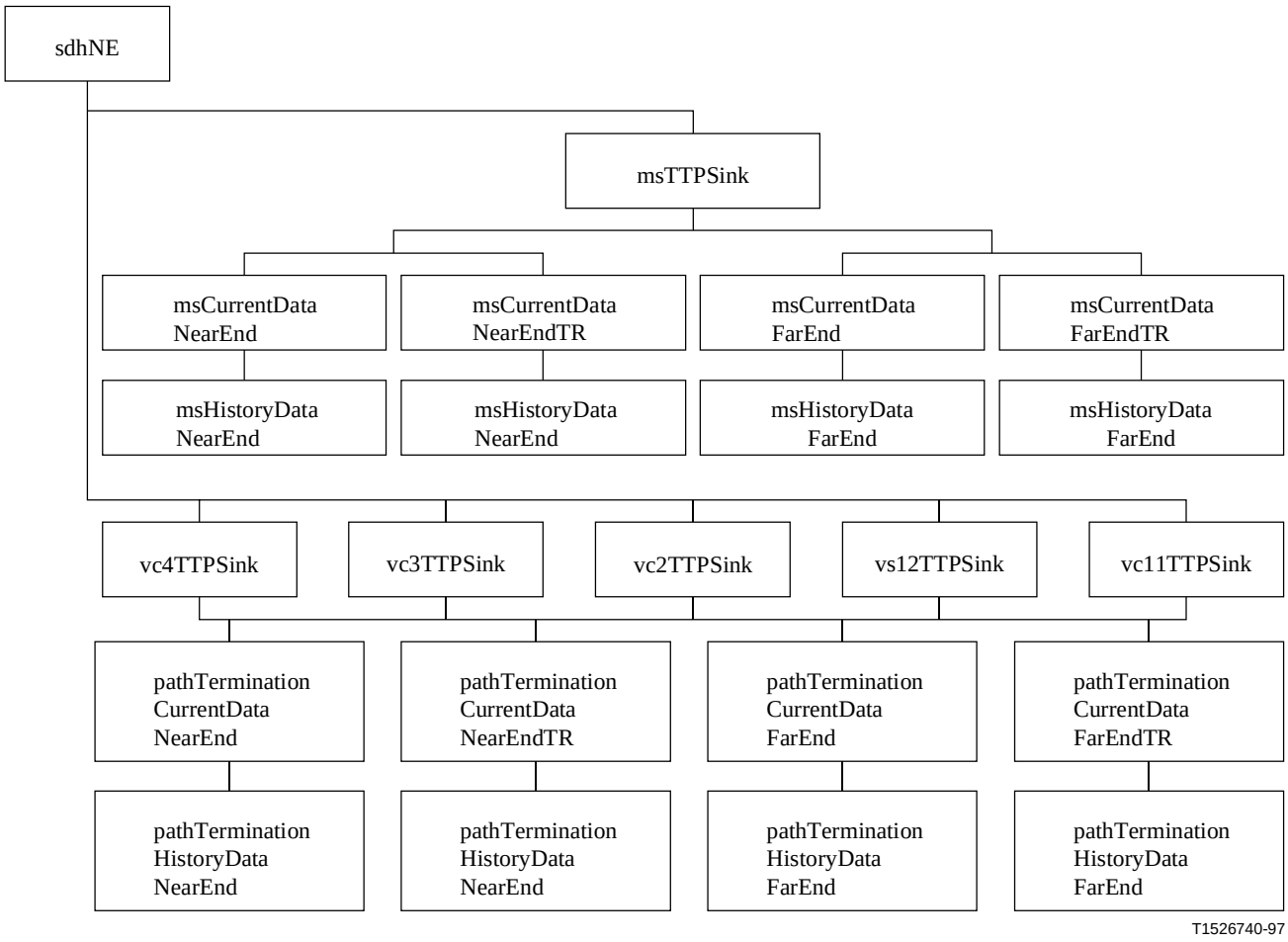


Figure I.1/G.774.6 – Object naming for the unidirectional performance monitoring

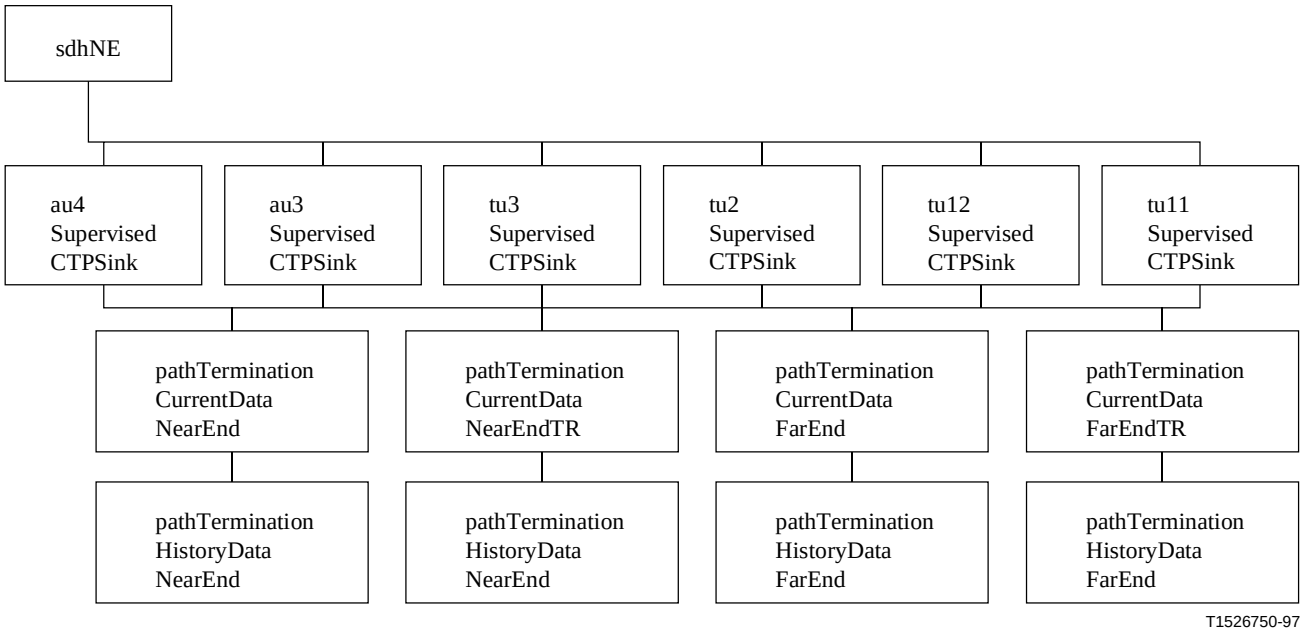


Figure I.2/G.774.6 – Object naming for the unidirectional performance monitoring

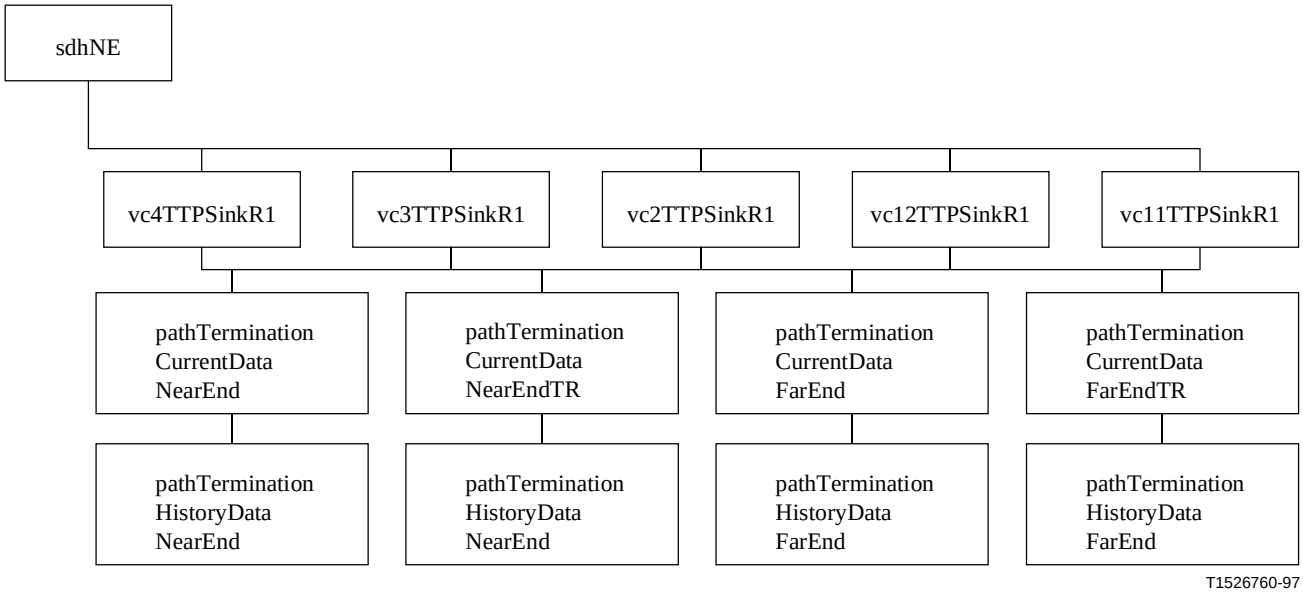
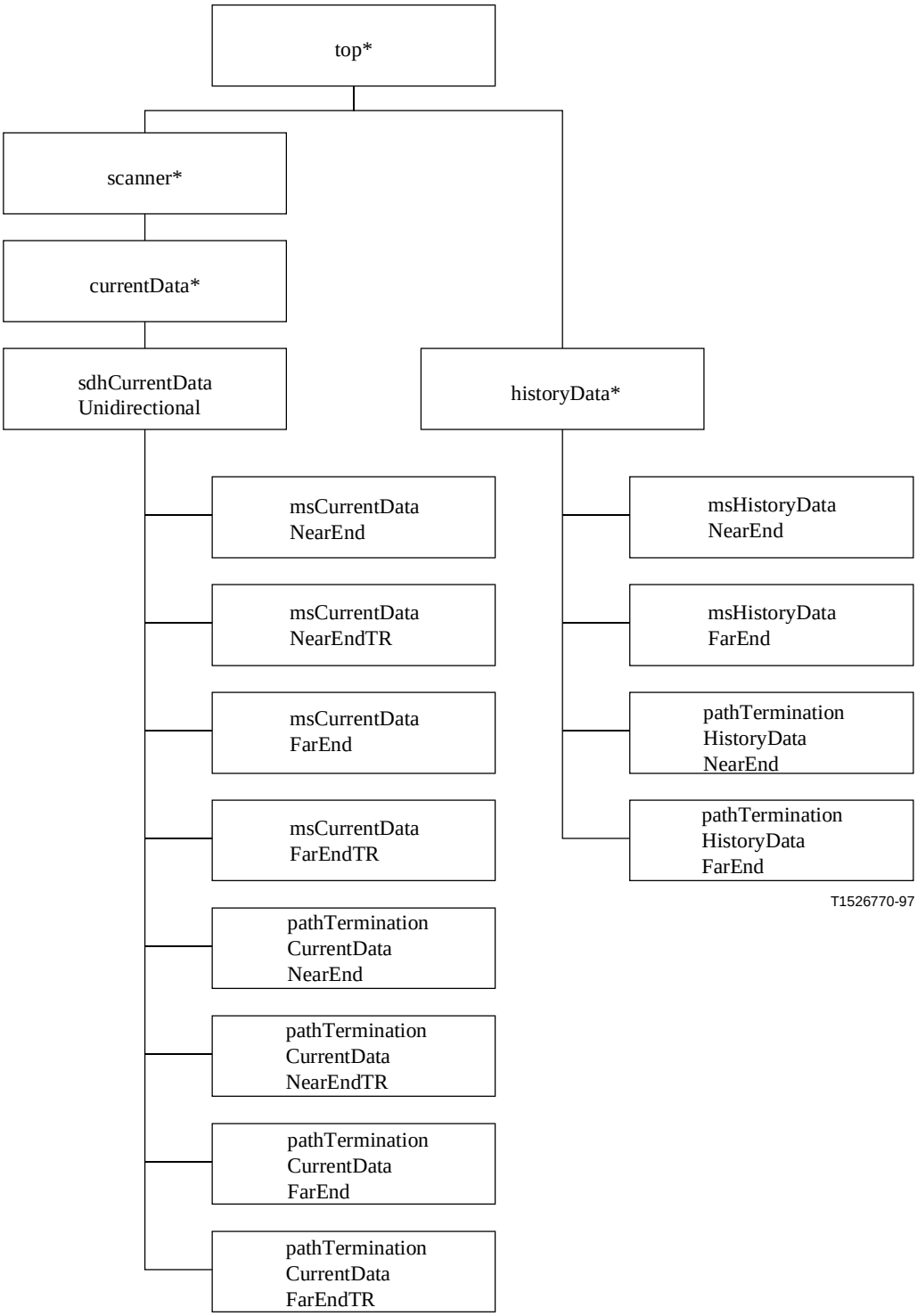


Figure I.3/G.774.6 – Object naming for the unidirectional performance monitoring



* Not defined in this Recommendation

Figure I.4/G.774.6 – Inheritance tree for the unidirectional performance monitoring

ITU-T RECOMMENDATIONS SERIES

Series A	Organization of the work of the ITU-T
Series B	Means of expression: definitions, symbols, classification
Series C	General telecommunication statistics
Series D	General tariff principles
Series E	Overall network operation, telephone service, service operation and human factors
Series F	Non-telephone telecommunication services
Series G	**Transmission systems and media, digital systems and networks**
Series H	Audiovisual and multimedia systems
Series I	Integrated services digital network
Series J	Transmission of television, sound programme and other multimedia signals
Series K	Protection against interference
Series L	Construction, installation and protection of cables and other elements of outside plant
Series M	TMN and network maintenance: international transmission systems, telephone circuits, telegraphy, facsimile and leased circuits
Series N	Maintenance: international sound programme and television transmission circuits
Series O	Specifications of measuring equipment
Series P	Telephone transmission quality, telephone installations, local line networks
Series Q	Switching and signalling
Series R	Telegraph transmission
Series S	Telegraph services terminal equipment
Series T	Terminals for telematic services
Series U	Telegraph switching
Series V	Data communication over the telephone network
Series X	Data networks and open system communication
Series Z	Programming languages