

American National Standard for Telecommunications

**Operations, Administration, Maintenance, and
Provisioning (OAM&P) – Performance Management
Functional Area Services and Information Model for
Interfaces between Operations Systems and Networks**

Alliance for Telecommunications Industry Solutions

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Abstract

This American National Standard is part of a series of standards needed to specify the interfaces between Operations Systems (OSs) and Network Elements (NEs). It specifies a Performance Management Information Model needed to facilitate the exchange of performance management information between OSs and NEs when providing Operations, Administration, Maintenance, and Provisioning functions.

Foreword

The information contained in this Foreword is not part of this American National Standard (ANS) and has not been processed in accordance with ANSI's requirements for an ANS. As such, this Foreword may contain material that has not been subjected to public review or a consensus process. In addition, it does not contain requirements necessary for conformance to the Standard.

The Alliance for Telecommunications Industry Solutions (ATIS) serves the public through improved understanding between carriers, customers, and manufacturers. The Alliance for Telecommunication Industry Solutions (ATIS) serves the public through improved understanding between providers, customers, and manufacturers. The Telecom Management and Operations Committee (TMOC) develops operations, administration, maintenance and provisioning standards, and other documentation related to Operations Support System (OSS) and Network Element (NE) functions and interfaces for communications networks – with an emphasis on standards development related to U.S.A. communication networks in coordination with the development of international standards.

ANSI guidelines specify two categories of requirements: mandatory and recommendation. The mandatory requirements are designated by the word *shall* and recommendations by the word *should*. Where both a mandatory requirement and a recommendation are specified for the same criterion, the recommendation represents a goal currently identifiable as having distinct compatibility or performance advantages.

Suggestions for improvement of this document are welcome. They should be sent to the Alliance for Telecommunications Industry Solutions, TMOC, 1200 G Street NW, Suite 500, Washington, DC 20005.

At the time of consensus on this document, TMOC, which was responsible for its development, had the following leadership:

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Operations, Administration, Maintenance, and Provisioning (OAM&P) – Performance Management Functional Area Services and Information Model for Interfaces between Operations Systems and Network Elements

1 Scope, Purpose, & Field of Application

1.1 Scope

This standard is part of a series of standards that specifies interface requirements between Operations Systems (OSs) and Network Elements (NEs). It describes a set of Performance Management functional area services and associated information model for Operations, Administration, Maintenance, and Provisioning (OAM&P) applications for DS1 and DS3 signals.

It is the intention of this standard to use and align with relevant OSI and ITU-T system management standards when they are available.

The alignment effort consists of adopting the relevant definitions in ITU-T Recommendation Q.822.

1.2 Purpose

Current telecommunications networks are populated by a large and increasing number of OSs and NEs supplied by different vendors. Both the number and variety of networks and services have grown, creating a diversity of management needs. This growth has resulted in the proliferation of unique communication interfaces between OSs and NEs. The telecommunication industry stands to benefit from standardization of these interfaces, designed to achieve interoperability between a broad range of OSs and NEs. The purpose of this document is to provide a set of application messages for the support of OAM&P Performance Management functions.

1.3 Application

This standard supports the Transaction-Oriented class of OAM&P applications specified in ATIS-0300208 by describing how the communication functions in ATIS-0300208 are used to support the Performance Management functions in ATIS-0300210. These messages require the managed objects defined in ANSI ATIS-0300240 and ITU-T Recommendation Q.822.

The minimum service and protocol requirements at the Session and Presentation Layers, and the supporting Application Service Elements (ASEs) for two classes of OAM&P applications at the Application Layer, are defined in ATIS-0300208.

2 References

The following standards contain provisions which, through reference in this text, constitute provisions of this American National Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

2.1 Normative References

ATIS-0300208, *Operations, Administration, Maintenance, and Provisioning (OAM&P) – Upper-Layer Protocols for Telecommunications Management Network (TMN) Interfaces, Q and X Interfaces*.¹

ATIS-0300210, *OAM&P – Principles of Functions, Architectures, and Protocol for Telecommunications Management Network (TMN) Interfaces and enhanced Telecom Operations Map (eTOM)*.²

ATIS-0300231, *Layer 1 In-Service Digital Transmission Performance Monitoring*.³

ATIS-0300240, *Operations, Administration, Maintenance and Provisioning (OAM&P) – Generic Network Information Model for Interfaces between Operations Systems and Network Elements*.⁴

ITU-T Recommendation M.3100, *Generic network information model*.⁵

ITU-T Recommendation X.200, *Information Technology – Open Systems Interconnection – Basic Reference Model: The basic model*.⁵

ITU-T Recommendation X.720 | ISO/IEC 10165-1, *Information technology – Open Systems Interconnection– Structure of management information: Management information model*.⁵

ITU-T Recommendation X.721 | ISO/IEC 10165-2, *Information technology – Open Systems Interconnection – Structure of management information: Definition of management information*.⁵

ITU-T Recommendation X.738 | ISO/IEC 10164-13, *Information technology – Open Systems Interconnection – Systems management: Summarization function*.⁵

ITU-T Recommendation X.739, *Information technology – Open Systems Interconnection – Systems management: Metric objects and attributes*.⁵

ITU-T Recommendation Q.822, *Stage 1, Stage 2 and Stage 3 Description for the Q3 Interface Performance Management*.⁵

¹ This document is available from the Alliance for Telecommunications Industry Solutions (ATIS) at < <https://www.atis.org/docstore/product.aspx?id=24609> >.

² This document is available from the Alliance for Telecommunications Industry Solutions (ATIS) at < <https://www.atis.org/docstore/product.aspx?id=25550> >.

³ This document is available from the Alliance for Telecommunications Industry Solutions (ATIS) at < <https://www.atis.org/docstore/product.aspx?id=27912> >.

⁴ This document is available from the Alliance for Telecommunications Industry Solutions (ATIS) at < <https://www.atis.org/docstore/product.aspx?id=24712> >.

⁵ This document is available from the International Telecommunications Union. < <http://www.itu.int/ITU-T/> >.

2.2 Informative References

ANSI T1.214a, *Telecommunications – Operations, administration, maintenance, and provisioning (OAM&P) – Generic network model for interfaces between operations systems and network elements (managed object class definitions for performance monitoring)*.⁶ [withdrawn]

ANSI T1.229, *Telecommunications – Operations, administration, maintenance, and provisioning (OAM&P) – Performance management functional area services for interfaces between operations systems and network elements*.⁶ [withdrawn]

ITU-T Recommendation X.680 | ISO/IEC 8824-1, *Information technology – Abstract Syntax Notation One (ASN.1): Specification of basic notation*.⁵

ITU-T Recommendation X.710 | ISO/IEC 9595, *Information technology – Open Systems Interconnection – Common Management Information service*.⁵

ITU-T Recommendation X.711 | ISO/IEC 9596-1, *Information technology – Open Systems Interconnection – Common Management Information Protocol: Specification*.⁵

ITU-T Recommendation X.720 | ISO/IEC 10165-1, *Information technology – Open Systems Interconnection – Structure of management information: Management information model*.⁵

ITU-T Recommendation X.738 | ISO/IEC 10164-13, *Information technology – Open Systems Interconnection – Systems management: Summarization function*.⁵

T1.TR.13, *Technical report: A methodology for specifying telecommunication network interfaces*.⁷

3 Definitions

This document makes use of the following term defined in ATIS-0300210:

- Performance management.

This document makes use of the following terms defined in ITU-T Recommendation X.720 | ISO/IEC 10165-1:

- Attribute.
- Managed object class.

This document makes use of the following term defined in ITU-T Recommendation X.200:

- Application entity.

⁶ A form for requesting historical ATIS documents can be found at <https://www.atis.org/docstore/Request%20for%20Historical%20Documents.pdf> >, which should be emailed to <doccenter@atis.org>.

⁷ This document is available from the Alliance for Telecommunications Industry Solutions (ATIS) at <https://www.atis.org/docstore/product.aspx?id=9002> >.

The following definitions are used in this document:

- **Managed system:** One or more application processes that act as agents for managed objects.
- **Managing (management) system:** An application process within a management domain that affects monitoring and control functions on managed objects, management subdomains, or both. A management system may also communicate with its peers (that may be resident in other management domains).
- **Management domain:** A collection of one or more management systems, and zero or more managed systems and management subdomains, that is administered by a single organization.
- **Management subdomain:** A management domain that is wholly located within a management domain.

4 Abbreviations

| | |
|-------|--|
| AIS | Alarm Indication Signal |
| ASE | Application Service Elements |
| ASN.1 | Abstract Syntax Notation One |
| CCITT | The International Telegraph and Telephone Consultative Committee |
| CMIS | Common Management Information Service |
| CMISE | Common Management Information Service Element |
| DN | Distinguished Name |
| DS1 | Digital Signal Hierarchy, Level 1 |
| DS3 | Digital Signal Hierarchy, Level 3 |
| FU | Functional Unit |
| ISO | International Organization for Standardization |
| ITU-T | International Telecommunication Union – Telecommunication Standardization Sector |
| NE | Network Element |
| OAM&P | Operations, Administration, Maintenance & Provisioning |
| OS | Operations System |
| OSI | Open Systems Interconnection |
| PM | Performance Management |
| PMN | Performance Monitoring |
| RDN | Relative Distinguished Name |
| SAS | SEF/AIS Severely Errored Frame Alarm Indication Signal Second |
| SEF | Severely Errored Frame |
| TMN | Telecommunications Management Network |
| TTP | Trail Termination Point |

5 Overview of the Performance Management Model

See 4.2 and Annex B of ITU-T Recommendation Q.822 for the performance management model overview.

6 Performance Management Functions

Performance management consists of a set of functions to evaluate and report upon the behavior of telecommunication equipment and the effectiveness of the network or network elements. These functions fall into three functional categories.

6.1 Performance Monitoring Functions

See 4.1 of ITU-T Recommendation Q.822 for details of performance monitoring functions.

6.2 Traffic Management & Network Management Functions

Definition of the traffic management and network management functions is for further study.

6.3 Quality of Service Observation Functions

Definition of the quality of service observations functions is for further study.

7 Object Classes & Attributes Type Definitions

Table 7.1 lists the labels of the managed object classes from other standards that are relevant to the generic performance monitoring network model described in this standard.

Table 7.1 – Managed object classes from ITU-T Q.822/ ITU-T X.738/ ITU-T X.721

| Reference | Object classes |
|-------------|--------------------|
| ITU-T Q.822 | Current Data |
| ITU-T Q.822 | History Data |
| ITU-T Q.822 | Threshold Data |
| ITU-T X.738 | Scan Report Record |
| ITU-T X.721 | Alarm Record |

NOTE – Other object classes (e.g., Simple Scanner) required for packaging the collected performance data are referenced in ITU-T Q.822.

Additional managed object classes applicable to the PM in this document are described in 7.1.

7.1 Additional Object Classes

7.1.1 DS1 Line TTP Sink Near End Current Data

dS1LineTTPSinkNECurrentData MANAGED OBJECT CLASS

DERIVED FROM "Recommendation Q.822":currentData;

CHARACTERIZED BY

cVPkg,

eSPkg,

sESPkg,

dS1LineTTPSinkNECurrentDataPkg PACKAGE

BEHAVIOUR dS1LineTTPSinkNECurrentDataBehaviour BEHAVIOUR

DEFINED AS

"The dS1LineTTPSinkNECurrentData object class is a class of managed support object that is used to monitor performance parameter aspects of DS1 Line TTPs. This object monitors only Near-end line performance parameters.

Instances of this object class may be created either by a managing system or automatically by a managed system. These are contained in the observed trail termination point object at the DS1 rate.

Criteria for the inclusion of the conditional packages as represented in the 'PRESENT IF' clause for each package is derived from the functional requirements for the corresponding performance measurement parameters in ATIS-0300231."

;;;

CONDITIONAL PACKAGES

IOSSPkg

PRESENT IF "an instance supports it.";

REGISTERED AS {pMObjectClass 9};

7.1.2 DS1 Line TTP Sink Far End Current Data

dS1LineTTPSinkFECurrentData MANAGED OBJECT CLASS

DERIVED FROM "Recommendation Q.822":currentData;

CHARACTERIZED BY

eSFEPkg,

dS1LineTTPSinkFECurrentDataPkg PACKAGE

BEHAVIOUR dS1LineTTPSinkFECurrentDataBehaviour BEHAVIOUR

DEFINED AS

“The dS1LineTTPSinkFECURRENTData object class is a class of managed support object that is used to monitor performance parameter aspects of DS1 Line TTPs. This object is only instantiated if the framing format is DS1 ESF. This object monitors only Far-end line performance parameters, based on anomalies and defects observed at the far end of the DS1 ESF path and reported back through the ESF data link.

Instances of this object class may be created either by a managing system or automatically by a managed system. These are contained in the observed trail termination point object at the DS1 rate.

Criteria for the creation of this object is derived from the functional requirements for the corresponding performance measurement parameters in ATIS-0300231.”

;;;

REGISTERED AS {pMObjectClass 10};

7.1.3 DS1 Line TTP Sink Near End History Data

dS1LineTTPSinkNEHistoryData MANAGED OBJECT CLASS

DERIVED FROM “Recommendation Q.822”:historyData;

CHARACTERIZED BY

cVHistoryPkg,

eSHistoryPkg,

sESHHistoryPkg,

dS1LineTTPSinkNEHistoryDataPkg PACKAGE

BEHAVIOUR dS1LineTTPSinkNEHistoryDataBehaviour BEHAVIOUR

DEFINED AS

“Instances of this object class are used to store the observed measurements of the observed dS1LineTTPSinkCURRENTData object at the end of an observation interval.

Criteria for the inclusion of the conditional packages as represented in the ‘PRESENT IF’ clause for each package is derived from the functional requirements for the corresponding performance measurement parameters in ATIS-0300231.”

;;;

CONDITIONAL PACKAGES

IOSSHHistoryPkg

PRESENT IF “an instance supports it.”;

REGISTERED AS {pMObjectClass 11};

7.1.4 DS1 Line TTP Sink Far End History Data

dS1LineTTPSinkFEHistoryData MANAGED OBJECT CLASS

DERIVED FROM “Recommendation Q.822”:historyData;

CHARACTERIZED BY

eSFEHistoryPkg,

dS1LineTTPSinkFEHistoryDataPkg PACKAGE

BEHAVIOUR dS1LineTTPSinkFEHistoryDataBehaviour BEHAVIOUR

DEFINED AS

“Instances of this object class are used to store the observed measurements of the observed dS1LineTTPSinkCurrentData object at the end of an observation interval.

Criteria for the creation of this object is derived from the functional requirements for the corresponding performance measurement parameters in ATIS-0300231.”

;;;

REGISTERED AS {pMObjectClass 12};

7.1.5 DS1 Path TTP Sink Near End Current Data

dS1PathTTPSinkNECurrentData MANAGED OBJECT CLASS

DERIVED FROM “Recommendation Q.822”:currentData;

CHARACTERIZED BY

cVPkg,

eSPkg,

sASPkg,

sESPkg,

uASPkg,

dS1PathTTPSinkNECurrentDataPkg PACKAGE

BEHAVIOUR dS1PathTTPSinkNECurrentDataBehaviour BEHAVIOUR

DEFINED AS

“The dS1PathTTPSinkNECurrentData object class is a class of managed support object that is used to monitor performance aspects of DS1 path TTPs. This object monitors only Near-end path performance parameters.

Instances of this object class may be created either by a managing system or automatically by a managed system. These are contained in the observed trail termination point object at the DS1 rate.

Criteria for the inclusion of the conditional packages as represented in the ‘PRESENT IF’ clause for each package is derived from the functional requirements for the corresponding performance measurement parameters in ATIS-0300231.

To support customer/network sectionalization, the TTPSink must be capable of detecting the AIS-CI signal and/or either the SPRM or NPRM messages from a Network Interface Unit that mediates a DS1 originating/terminating at a customer installation as specified in ATIS-0300231”

....
;...;

CONDITIONAL PACKAGES

aISSPkg

PRESENT IF "an instance supports it.",

aISSCIPkg

PRESENT IF "an instance supports it.",

cSSPkg

PRESENT IF "and only if controlled slip monitoring is supported.",

eSAPkg

PRESENT IF "the framing format is DS1 ESF and an instance supports it.",

eSBPkg

PRESENT IF "the framing format is DS1 ESF and an instance supports it.",

eSNPPkg

PRESENT IF "customer/network sectionalization is supported.",

sESNPPkg

PRESENT IF "customer/network sectionalization is supported.",

uASNPPkg

PRESENT IF "customer/network sectionalization is supported.";

REGISTERED AS {pMObjectClass 13};

7.1.6 DS1 Path TTP Sink Far End Current Data

dS1PathTTPSinkFECurrentData MANAGED OBJECT CLASS

DERIVED FROM "Recommendation Q.822":currentData;

CHARACTERIZED BY

cVFEPkg,
eSFEPkg,
sEFSFEPkg,
sESFEPkg,
uASFEPkg,

dS1PathTTPSinkFECurrentDataPkg PACKAGE

BEHAVIOUR dS1PathTTPSinkFECurrentDataBehaviour BEHAVIOUR

DEFINED AS

"The dS1PathTTPSinkFECurrentData object class is a class of managed support object that is used to monitor performance aspects of DS1 path TTPs. This object is only instantiated if the

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framing format is DS1 ESF. This object monitors only Far-end path performance parameters, based on anomalies and defects observed at the far end of the DS1 ESF path and reported back through the ESF data link.

Instances of this object class may be created either by a managing system or automatically by a managed system. These are contained in the observed trail termination point object at the DS1 rate.

Criteria for the inclusion of the conditional packages as represented in the 'PRESENT IF' clause for each package is derived from the functional requirements for the corresponding performance measurement parameters in ATIS-0300231.

To support customer/network sectionalization, the TTPSink must be capable of detecting the RAI-CI signal and/or either the SPRM or NPRM messages from a Network Interface Unit that mediates a DS1 originating/terminating at a customer installation as specified in ATIS-0300231"

;;;

CONDITIONAL PACKAGES

cSSFEPkg

PRESENT IF "and only if controlled slip monitoring are supported.",

eSAFEPkg

PRESENT IF "an instance supports it.",

eSBFEPkg

PRESENT IF "an instance supports it.",

eSNPFEPkg

PRESENT IF "customer/network sectionalization is supported",

sESNPFEPkg

PRESENT IF "customer/network sectionalization is supported.",

uASNPFEPkg

PRESENT IF "customer/network sectionalization is supported.";

REGISTERED AS {pMObjectClass 14};

7.1.7 DS1 Path TTP Sink Near End History Data

dS1PathTTPSinkNEHistoryData MANAGED OBJECT CLASS

DERIVED FROM "Recommendation Q.822":historyData;

CHARACTERIZED BY

cVHistoryPkg,

eSHistoryPkg,

sASHistoryPkg,

sESHistoryPkg,

uASHistoryPkg,

dS1PathTTPSinkNEHistoryDataPkg PACKAGE

BEHAVIOUR dS1PathTTPSinkNEHistoryDataBehaviour BEHAVIOUR

DEFINED AS

“Instances of this object class are used to store the observed measurements of the observed dS1PathTTPSinkNECurrentData object at the end of an observation interval.

Criteria for the inclusion of the conditional packages as represented in the ‘PRESENT IF’ clause for each package is derived from the functional requirements for the corresponding performance measurement parameters in ATIS-0300231.

To support customer/network sectionalization, the TTPSink must be capable of detecting the AIS-CI signal and/or either the SPRM or NPRM messages from a Network Interface Unit that mediates a DS1 originating/terminating at a customer installation as specified in ATIS-0300231.”

;;;

CONDITIONAL PACKAGES

aISSHistoryPkg

PRESENT IF “an instance supports it.”,

aISSCIHistoryPkg

PRESENT IF “an instance supports it.”,

cSSHHistoryPkg

PRESENT IF “and only if controlled slip monitoring is supported.”,

eSAHistoryPkg

PRESENT IF “the framing format is DS1 ESF and an instance supports it.”,

eSBHistoryPkg

PRESENT IF “the framing format is DS1 ESF and an instance supports it.”,

eSNPHistoryPkg

PRESENT IF “customer/network sectionalization is supported.”,

sESNPHistoryPkg

PRESENT IF “customer/network sectionalization is supported.”,

uASNPHistoryPkg

PRESENT IF “customer/network sectionalization is supported.”;

REGISTERED AS {pMObjectClass 15};

7.1.8 DS1 Path TTP Sink Far End History Data

dS1PathTTPSinkFEHistoryData MANAGED OBJECT CLASS

DERIVED FROM "Recommendation Q.822":historyData;

CHARACTERIZED BY

cVFEHistoryPkg,
eSFEHistoryPkg,
sEFSFEHistoryPkg,
sESFEHistoryPkg,
uASFEHistoryPkg,
dS1PathTTPSinkFEHistoryDataPkg PACKAGE

BEHAVIOUR dS1PathTTPSinkFEHistoryDataBehaviour BEHAVIOUR

DEFINED AS

"Instances of this object class are used to store the observed measurements of the observed dS1PathTTPSinkFECurrentData object at the end of an observation interval.

Criteria for the inclusion of the conditional packages as represented in the 'PRESENT IF' clause for each package is derived from the functional requirements for the corresponding performance measurement parameters in ATIS-0300231.

To support customer/network sectionalization the TTPSink must be capable of detecting the RAI-CI signal and/or either the SPRM or NPRM messages from a Network Interface Unit that mediates a DS1 originating/terminating at a customer installation as specified in ATIS-0300231."

;;;

CONDITIONAL PACKAGES

cSSFHistoryPkg

PRESENT IF "and only if controlled slip monitoring are supported.",

eSAFEHistoryPkg

PRESENT IF "an instance supports it.",

eSBFEHistoryPkg

PRESENT IF "an instance supports it.",

eSNPFEHistoryPkg

PRESENT IF "customer/network sectionalization is supported.",

sESNPFEHistoryPkg

PRESENT IF "customer/network sectionalization is supported.",

uASNPFEHistoryPkg

PRESENT IF "customer/network sectionalization is supported.";

REGISTERED AS {pMObjectClass 16};

7.1.9 DS3 Line TTP Sink Near End Current Data

dS3LineTTPSinkNECurrentData MANAGED OBJECT CLASS

DERIVED FROM "Recommendation Q.822":currentData;

CHARACTERIZED BY

eSPkg,

sESPkg,

dS3LineTTPSinkNECurrentDataPkg PACKAGE

BEHAVIOUR dS3LineTTPSinkNECurrentDataBehaviour BEHAVIOUR

DEFINED AS

"The dS3LineTTPSinkNECurrentData object class is a class of managed support object that is used to monitor performance parameter aspects of DS3 Line TTPs. This object monitors only Near-end line performance parameters.

Instances of this object class may be created either by a managing system or automatically by a managed system and are contained in the observed trail termination point object at the DS3 rate.

Criteria for the inclusion of the conditional packages as represented in the 'PRESENT IF' clause for each package is derived from the functional requirements for the corresponding performance measurement parameters in ATIS-0300231."

;;;

CONDITIONAL PACKAGES

cVPkg

PRESENT IF "an instance supports it.",

eSAPkg

PRESENT IF "an instance supports it.",

eSBPkg

PRESENT IF "an instance supports it.",

LOSSPkg

PRESENT IF "an instance supports it.";

REGISTERED AS {pMObjectClass 17};

7.1.10 DS3 Line TTP Sink Near End History Data

dS3LineTTPSinkNEHistoryData MANAGED OBJECT CLASS

DERIVED FROM "Recommendation Q.822":historyData;

CHARACTERIZED BY

eSHistoryPkg,

sESHistoryPkg,

dS3LineTTPSinkNEHistoryDataPkg PACKAGE

BEHAVIOUR dS3LineTTPSinkNEHistoryDataBehaviour BEHAVIOUR

DEFINED AS

"Instances of this object class are used to store the observed measurements of the observed dS3LineTTPSinkNECurrentData object at the end of an observation interval.

Criteria for the inclusion of the conditional packages as represented in the 'PRESENT IF' clause for each package is derived from the functional requirements for the corresponding performance measurement parameters in ATIS-0300231."

;;;

CONDITIONAL PACKAGES

cVHistoryPkg

PRESENT IF "an instance supports it.",

eSAHistoryPkg

PRESENT IF "an instance supports it.",

eSBHistoryPkg

PRESENT IF "an instance supports it.",

IOSSHHistoryPkg

PRESENT IF "an instance supports it.";

REGISTERED AS {pMObjectClass 18};

7.1.11 DS3 Path TTP Sink Near End Current Data

dS3PathTTPSinkNECurrentData MANAGED OBJECT CLASS

DERIVED FROM "Recommendation Q.822":currentData;

CHARACTERIZED BY

dS3PathTTPSinkNECurrentDataPkg PACKAGE

BEHAVIOUR dS3PathTTPSinkNECurrentDataBehaviour BEHAVIOUR

DEFINED AS

ATIS-0300247.2018

“The dS3PathTTPSinkNECurrentData object class is a class of managed support object that is used to monitor performance aspects of DS3 path TTPs. This object monitors only Near-end path performance parameters.

Instances of this object class may be created either by a managing system or automatically by a managed system and are contained in the observed trail termination point object at the DS3 rate.

Criteria for the inclusion of the conditional packages as represented in the ‘PRESENT IF’ clause for each package is derived from the functional requirements for the corresponding performance measurement parameters in ATIS-0300231.”

;;;

CONDITIONAL PACKAGES

aISSPkg

PRESENT IF “an instance supports it.”,

cVCPPkg

PRESENT IF “and only if the C-bit Parity Application is supported.”,

cVPPkg

PRESENT IF “the M23 Application is supported, and may also be optionally present if the C-bit Parity Application is supported.”,

eSACPPkg

PRESENT IF “the C-bit Parity Application is supported and an instance supports it.”,

eSAPPkg

PRESENT IF “an instance supports it.”,

eSBCPPkg

PRESENT IF “the C-bit Parity Application is supported and an instance supports it.”,

eSBPPkg

PRESENT IF “an instance supports it.”,

eSCPPkg

PRESENT IF “and only if the C-bit Parity Application is supported.”,

eSPPkg

PRESENT IF “the M23 Application is supported, and may also be optionally present if the C-bit Parity Application is supported.”,

sASPPkg

PRESENT IF “an instance supports it.”,

sESCPPkg

PRESENT IF “and only if the C-bit Parity Application is supported.”,

sESPPkg

PRESENT IF “the M23 Application is supported, and may also be optionally present if the C-bit Parity Application is supported.”,

uASCPPkg

PRESENT IF “and only if the C-bit Parity Application is supported.”,

uASPPkg

PRESENT IF “the M23 Application is supported, and may also be optionally present if the C-bit Parity Application is supported.”;

REGISTERED AS {pMObjectClass 19};

7.1.12 DS3 Path TTP Sink Far End Current Data

dS3PathTTPSinkFECurrentData MANAGED OBJECT CLASS

DERIVED FROM “Recommendation Q.822”:currentData;

CHARACTERIZED BY

cVCPFEPkg,
eSCPFEPkg,
sESCPFEPkg,
uASCPFEPkg,

dS3PathTTPSinkFECurrentDataPkg PACKAGE

BEHAVIOUR dS3PathTTPSinkFECurrentDataBehaviour BEHAVIOUR

DEFINED AS

“The dS3PathTTPSinkFECurrentData object class is a class of managed support object that is used to monitor performance aspects of DS3 path TTPs. This object is only instantiated if the C-bit Parity Application is supported. This object monitors only Far-end path performance parameters based on anomalies and defects observed at the far end of the DS3 C-bit parity path and reported back through the DS3 C-bit parity frame format.

Instances of this object class may be created either by a managing system or automatically by a managed system and are contained in the observed trail termination point object at the DS3 rate.

Criteria for the inclusion of the conditional packages as represented in the ‘PRESENT IF’ clause for each package is derived from the functional requirements for the corresponding performance measurement parameters in ATIS-0300231.”

;;;

CONDITIONAL PACKAGES

eSACPFEPkg

PRESENT IF “an instance supports it.”,

eSBCPFEPkg

PRESENT IF “an instance supports it.”,

sASCPFEPkg

PRESENT IF “an instance supports it.”;

REGISTERED AS {pMObjectClass 20};

7.1.13 DS3 Path TTP Sink Near End History Data

dS3PathTTPSinkNEHistoryData MANAGED OBJECT CLASS

DERIVED FROM “Recommendation Q.822”:historyData;

CHARACTERIZED BY

dS3PathTTPSinkNEHistoryDataPkg PACKAGE

BEHAVIOUR dS3PathTTPSinkNEHistoryDataBehaviour BEHAVIOUR

DEFINED AS

“Instances of this object class are used to store the observed measurements of the observed dS3PathTTPSinkNECurrentData object at the end of an observation interval.

Criteria for the inclusion of the conditional packages as represented in the ‘PRESENT IF’ clause for each package is derived from the functional requirements for the corresponding performance measurement parameters in ATIS-0300231.”

;;;

CONDITIONAL PACKAGES

aISSHistoryPkg

PRESENT IF “an instance supports it.”,

cVCPHistoryPkg

PRESENT IF “and only if the C-bit Parity Application is supported.”,

cVPHistoryPkg

PRESENT IF “the M23 Application is supported, and may also be optionally present if the C-bit Parity Application is supported.”,

eSACPHistoryPkg

PRESENT IF “the C-bit Parity Application is supported and an instance supports it.”,

eSAPHistoryPkg

PRESENT IF “an instance supports it.”,

eSBCPHistoryPkg

PRESENT IF “the C-bit Parity Application is supported and an instance supports it.”,
eSBPHistoryPkg

PRESENT IF “an instance supports it.”,
eSCPHistoryPkg

PRESENT IF “and only if the C-bit Parity Application is supported.”,
eSPHistoryPkg

PRESENT IF “the M23 Application is supported, and may also be optionally present
if the C-bit Parity Application is supported.”,

sASHistoryPkg
PRESENT IF “an instance supports it.”,

sESCPHistoryPkg
PRESENT IF “and only if the C-bit Parity Application is supported.”,

sESPHistoryPkg
PRESENT IF “the M23 Application is supported, and may also be optionally present
if the C-bit Parity Application is supported.”,

uASCPHistoryPkg
PRESENT IF “and only if the C-bit Parity Application is supported.”,

uASPHistoryPkg
PRESENT IF “the M23 Application is supported, and may also be optionally present
if the C-bit Parity Application is supported.”;

REGISTERED AS {pMObjectClass 21};

7.1.14 DS3 Path TTP Sink Far End History Data

dS3PathTTPSinkFEHistoryData MANAGED OBJECT CLASS

DERIVED FROM “Recommendation Q.822”:historyData;

CHARACTERIZED BY

cVCPFEHistoryPkg,
eSCPFEHistoryPkg,
sESCPFEHistoryPkg,
uASCPFEHistoryPkg,

dS3PathTTPSinkFEHistoryDataPkg PACKAGE

BEHAVIOUR dS3PathTTPSinkFEHistoryDataBehaviour BEHAVIOUR

DEFINED AS

“Instances of this object class are used to store the observed measurements of the observed dS3PathTTPSinkFECcurrentData object at the end of an observation interval.

Criteria for the inclusion of the conditional packages as represented in the ‘PRESENT IF’ clause for each package is derived from the functional requirements for the corresponding performance measurement parameters in ATIS-0300231.”

;;;

CONDITIONAL PACKAGES

eSACPFHistoryPkg

PRESENT IF “an instance supports it.”,

eSBCPFHistoryPkg

PRESENT IF “an instance supports it.”,

sASCPFHistoryPkg

PRESENT IF “an instance supports it.”;

REGISTERED AS {pMObjectClass 22};

7.2 Additional Package Definitions

7.2.1 Performance Monitoring Measurement Current Data Packages

7.2.1.1 Alarm Indication Signal Second

aISSPkg PACKAGE

ATTRIBUTES

aISS

REPLACE-WITH-DEFAULT

DEFAULT VALUE PM.defaultMeasurementValue

GET;

REGISTERED AS {pMPackage 1};

7.2.1.2 Controlled Slip Second

cSSPkg PACKAGE

ATTRIBUTES

cSS

REPLACE-WITH-DEFAULT

DEFAULT VALUE PM.defaultMeasurementValue

GET;
REGISTERED AS {pMPackage 2};

7.2.1.3 Controlled Slip Second Far End

cSSFEPkg PACKAGE
ATTRIBUTES
cSSFE
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 3};

7.2.1.4 Code Violation

cVPkg PACKAGE
ATTRIBUTES
cV
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 4};

7.2.1.5 Code Violation, CP-bit

cVCPkg PACKAGE
ATTRIBUTES
cVCP
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 5};

7.2.1.6 Code Violation, CP-bit Far End

cVCPFEPkg PACKAGE

ATTRIBUTES

cVCPFE

REPLACE-WITH-DEFAULT

DEFAULT VALUE PM.defaultMeasurementValue

GET;

REGISTERED AS {pMPackage 6};

7.2.1.7 Code Violation Far End

cVFEPkg PACKAGE

ATTRIBUTES

cVFE

REPLACE-WITH-DEFAULT

DEFAULT VALUE PM.defaultMeasurementValue

GET;

REGISTERED AS {pMPackage 7};

7.2.1.8 Code Violation, P-bit

cVPPkg PACKAGE

ATTRIBUTES

cVP

REPLACE-WITH-DEFAULT

DEFAULT VALUE PM.defaultMeasurementValue

GET;

REGISTERED AS {pMPackage 8};

7.2.1.9 Error Second

eSPkg PACKAGE

ATTRIBUTES

eS

REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 9};

7.2.1.10 Error Second, CP-bit

eSCPPkg PACKAGE
ATTRIBUTES
eSCP
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 10};

7.2.1.11 Error Second, CP-bit Far End

eSCPFEPkg PACKAGE
ATTRIBUTES
eSCPFE
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 11};

7.2.1.12 Error Second Far End

eSFEPkg PACKAGE
ATTRIBUTES
eSFE
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 12};

7.2.1.13 Error Second P-bit

eSPPkg PACKAGE

ATTRIBUTES

eSP

REPLACE-WITH-DEFAULT

DEFAULT VALUE PM.defaultMeasurementValue

GET;

REGISTERED AS {pMPackage 13};

7.2.1.14 Error Second, Type A

eSAPkg PACKAGE

ATTRIBUTES

eSA

REPLACE-WITH-DEFAULT

DEFAULT VALUE PM.defaultMeasurementValue

GET;

REGISTERED AS {pMPackage 14};

7.2.1.15 Error Second, Type A, CP-bit

eSACPPkg PACKAGE

ATTRIBUTES

eSACP

REPLACE-WITH-DEFAULT

DEFAULT VALUE PM.defaultMeasurementValue

GET;

REGISTERED AS {pMPackage 15};

7.2.1.16 Error Second, Type A, CP-bit Far End

eSACPFEPkg PACKAGE

ATTRIBUTES

eSACPFE
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 16};

7.2.1.17 Error Second, Type A, Far End

eSAFEpkg PACKAGE
ATTRIBUTES
eSAFE
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 17};

7.2.1.18 Error Second, Type A, P-bit

eSAPPkg PACKAGE
ATTRIBUTES
eSAP
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 18};

7.2.1.19 Error Second, Type B

eSBPkg PACKAGE
ATTRIBUTES
eSB
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 19};

7.2.1.20 Error Second, Type B, CP-bit

```
eSBCPPkg PACKAGE
ATTRIBUTES
    eSBCP
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE PM.defaultMeasurementValue
    GET;
REGISTERED AS {pMPackage 20};
```

7.2.1.21 Error Second, Type B, CP-bit Far End

```
eSBCPFEPkg PACKAGE
ATTRIBUTES
    eSBCPFE
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE PM.defaultMeasurementValue
    GET;
REGISTERED AS {pMPackage 21};
```

7.2.1.22 Error Second, Type B, Far End

```
eSBFEPkg PACKAGE
ATTRIBUTES
    eSBFE
    REPLACE-WITH-DEFAULT
    DEFAULT VALUE PM.defaultMeasurementValue
    GET;
REGISTERED AS {pMPackage 22};
```

7.2.1.23 Error Second, Type B, P-bit

```
eSBPPkg PACKAGE
ATTRIBUTES
```

eSBP
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 23};

7.2.1.24 Loss of Signal Second

IOSSPkg PACKAGE
ATTRIBUTES
IOSS
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 24};

7.2.1.25 SEF/AIS Severely Errored Framing Alarm Indication Signal Second CP-bit Far End

sASCPFEPkg PACKAGE
ATTRIBUTES
sASCPFE
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 25};

7.2.1.26 SEF/AIS Severely Errored Framing Alarm Indication Signal Second

sASPKg PACKAGE
ATTRIBUTES
sAS
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;

REGISTERED AS {pMPackage 26};

7.2.1.27 Severely Errored Frame Second, Far End

sEFSFEPkg PACKAGE

ATTRIBUTES

sEFSFE

REPLACE-WITH-DEFAULT

DEFAULT VALUE PM.defaultMeasurementValue

GET;

REGISTERED AS {pMPackage 27};

7.2.1.28 Severely Errored Second

sESPkg PACKAGE

ATTRIBUTES

sES

REPLACE-WITH-DEFAULT

DEFAULT VALUE PM.defaultMeasurementValue

GET;

REGISTERED AS {pMPackage 28};

7.2.1.29 Severely Errored Second, CP-bit

sESCPPkg PACKAGE

ATTRIBUTES

sESCP

REPLACE-WITH-DEFAULT

DEFAULT VALUE PM.defaultMeasurementValue

GET;

REGISTERED AS {pMPackage 29};

7.2.1.30 Severely Errored Second, CP-bit Far End

sESCPFEPkg PACKAGE

ATTRIBUTES

sESCPFE

REPLACE-WITH-DEFAULT

DEFAULT VALUE PM.defaultMeasurementValue

GET;

REGISTERED AS {pMPackage 30};

7.2.1.31 Severely Errored Second, Far End

sESFEPkg PACKAGE

ATTRIBUTES

sESFE

REPLACE-WITH-DEFAULT

DEFAULT VALUE PM.defaultMeasurementValue

GET;

REGISTERED AS {pMPackage 31};

7.2.1.32 Severely Errored Second P-bit

sESPkg PACKAGE

ATTRIBUTES

sESP

REPLACE-WITH-DEFAULT

DEFAULT VALUE PM.defaultMeasurementValue

GET;

REGISTERED AS {pMPackage 32};

7.2.1.33 Unavailable Second

uASPkg PACKAGE

ATTRIBUTES

uAS

REPLACE-WITH-DEFAULT

DEFAULT VALUE PM.defaultMeasurementValue

GET;
REGISTERED AS {pMPackage 33};

7.2.1.34 Unavailable Second Far End

uASFEPkg PACKAGE
ATTRIBUTES
uASFE
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 34};

7.2.1.35 Unavailable Second CP-bit

uASCPPkg PACKAGE
ATTRIBUTES
uASCP
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 35};

7.2.1.36 Unavailable Second CP-bit Far End

uASCPFEPkg PACKAGE
ATTRIBUTES
uASCPFE
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 36};

7.2.1.37 Unavailable Second P-bit

uASPPkg PACKAGE
ATTRIBUTES
uASP
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 37};

7.2.1.38 Errored Seconds Network Performance

eSNPPkg PACKAGE
ATTRIBUTES
eSNP
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 75};

7.2.1.39 Errored Seconds Network Performance Far End

eSNPFEPkg PACKAGE
ATTRIBUTES
eSNPFE
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 76};

7.2.1.40 Severely Errored Seconds Network Performance

sESNPPkg PACKAGE
ATTRIBUTES
sESNP

REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 77};

7.2.1.41 Severely Errored Seconds Network Performance Far End

sESNPFEPkg PACKAGE
ATTRIBUTES
sESNPFE
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 78};

7.2.1.42 Unavailable Seconds Network Performance

uASNPPkg PACKAGE
ATTRIBUTES
uASNP
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 79};

7.2.1.43 Unavailable Seconds Network Performance Far End

uASNPFEPkg PACKAGE
ATTRIBUTES
uASNPFE
REPLACE-WITH-DEFAULT
DEFAULT VALUE PM.defaultMeasurementValue
GET;
REGISTERED AS {pMPackage 80};

7.2.1.44 Alarm Indication Signal Second – Customer Installation

aISSCIPkg PACKAGE

ATTRIBUTES

aISSCI

REPLACE-WITH-DEFAULT

DEFAULT VALUE PM.defaultMeasurementValue

GET;

REGISTERED AS {pMPackage 87};

7.2.2 Performance Monitoring Measurement History Data Packages

7.2.2.1 Alarm Indication Signal Second History

aSSHHistoryPkg PACKAGE

ATTRIBUTES

aISS GET;

REGISTERED AS {pMPackage 38};

7.2.2.2 Controlled Slip Second History

cSSHHistoryPkg PACKAGE

ATTRIBUTES

cSS GET;

REGISTERED AS {pMPackage 39};

7.2.2.3 Controlled Slip Second Far End History

cSSFEHistoryPkg PACKAGE

ATTRIBUTES

cSSFE GET;

REGISTERED AS {pMPackage 40};

7.2.2.4 Code Violation History

cVHistoryPkg PACKAGE

ATTRIBUTES

cV GET;
REGISTERED AS {pMPackage 41};

7.2.2.5 Code Violation, CP-bit History

cVCPHistoryPkg PACKAGE
ATTRIBUTES
cVCP GET;
REGISTERED AS {pMPackage 42};

7.2.2.6 Code Violation, CP-bit Far End History

cVCPFEHistoryPkg PACKAGE
ATTRIBUTES
cVCPFE GET;
REGISTERED AS {pMPackage 43};

7.2.2.7 Code Violation Far End History

cVFEHistoryPkg PACKAGE
ATTRIBUTES
cVFE GET;
REGISTERED AS {pMPackage 44};

7.2.2.8 Code Violation, P-bit History

cVPHistoryPkg PACKAGE
ATTRIBUTES
cVP GET;
REGISTERED AS {pMPackage 45};

7.2.2.9 Error Second History

eSHistoryPkg PACKAGE
ATTRIBUTES
eS GET;
REGISTERED AS {pMPackage 46};

7.2.2.10 Error Second, CP-bit History

eSCPHistoryPkg PACKAGE

ATTRIBUTES

eSCP GET;

REGISTERED AS {pMPackage 47};

7.2.2.11 Error Second, CP-bit Far End History

eSCPFEHistoryPkg PACKAGE

ATTRIBUTES

eSCPFE GET;

REGISTERED AS {pMPackage 48};

7.2.2.12 Error Second Far End History

eSFEHistoryPkg PACKAGE

ATTRIBUTES

eSFE GET;

REGISTERED AS {pMPackage 49};

7.2.2.13 Error Second P-bit History

eSPHistoryPkg PACKAGE

ATTRIBUTES

eSP GET;

REGISTERED AS {pMPackage 50};

7.2.2.14 Error Second, Type A History

eSAHistoryPkg PACKAGE

ATTRIBUTES

eSA GET;

REGISTERED AS {pMPackage 51};

7.2.2.15 Error Second, Type A, CP-bit History

eSACPHistoryPkg PACKAGE

ATTRIBUTES

eSACP GET;

REGISTERED AS {pMPackage 52};

7.2.2.16 Error Second, Type A, CP-bit Far End History

eSACPFHistoryPkg PACKAGE

ATTRIBUTES

eSACPFE GET;

REGISTERED AS {pMPackage 53};

7.2.2.17 Error Second, Type A, Far End History

eSAFEHistoryPkg PACKAGE

ATTRIBUTES

eSAFE GET;

REGISTERED AS {pMPackage 54};

7.2.2.18 Error Second, Type A, P-bit History

eSAPHistoryPkg PACKAGE

ATTRIBUTES

eSAP GET;

REGISTERED AS {pMPackage 55};

7.2.2.19 Error Second, Type B, History

eSBHistoryPkg PACKAGE

ATTRIBUTES

eSB GET;

REGISTERED AS {pMPackage 56};

7.2.2.20 Error Second, Type B, CP-bit History

eSBCPHistoryPkg PACKAGE

ATTRIBUTES

eSBCP GET;

REGISTERED AS {pMPackage 57};

7.2.2.21 Error Second, Type B, CP-bit Far End History

eSBCPFEHistoryPkg PACKAGE

ATTRIBUTES

eSBCPFE GET;

REGISTERED AS {pMPackage 58};

7.2.2.22 Error Second, Type B, Far End History

eSBFEHistoryPkg PACKAGE

ATTRIBUTES

eSBFE GET;

REGISTERED AS {pMPackage 59};

7.2.2.23 Error Second, Type B, P-bit History

eSBPHistoryPkg PACKAGE

ATTRIBUTES

eSBP GET;

REGISTERED AS {pMPackage 60};

7.2.2.24 Loss of Signal Second History

IOSSHistoryPkg PACKAGE

ATTRIBUTES

IOSS GET;

REGISTERED AS {pMPackage 61};

7.2.2.25 SEF/AIS Severely Errored Framing Alarm Indication Signal Second CP-bit Far End History

sASCPFEHistoryPkg PACKAGE

ATTRIBUTES

sASCPFE GET;
REGISTERED AS {pMPackage 62};

7.2.2.26 SEF/AIS Severely Errored Framing Alarm Indication Signal Second History

sASHistoryPkg PACKAGE
ATTRIBUTES
sAS GET;
REGISTERED AS {pMPackage 63};

7.2.2.27 Severely Errored Frame Second Far End History

sEFSFEHistoryPkg PACKAGE
ATTRIBUTES
sEFSFE GET;
REGISTERED AS {pMPackage 64};

7.2.2.28 Severely Errored Second History

sESHHistoryPkg PACKAGE
ATTRIBUTES
sES GET;
REGISTERED AS {pMPackage 65};

7.2.2.29 Severely Errored Second, CP-bit History

sESCPHistoryPkg PACKAGE
ATTRIBUTES
sESCP GET;
REGISTERED AS {pMPackage 66};

7.2.2.30 Severely Errored Second, CP-bit Far End History

sESCPFEHistoryPkg PACKAGE
ATTRIBUTES
sESCPFE GET;

REGISTERED AS {pMPackage 67};

7.2.2.31 Severely Errored Second, Far End History

sESFEHistoryPkg PACKAGE

ATTRIBUTES

sESFE GET;

REGISTERED AS {pMPackage 68};

7.2.2.32 Severely Errored Second P-bit History

sESPHistoryPkg PACKAGE

ATTRIBUTES

sESP GET;

REGISTERED AS {pMPackage 69};

7.2.2.33 Unavailable Second History

uASHistoryPkg PACKAGE

ATTRIBUTES

uAS GET;

REGISTERED AS {pMPackage 70};

7.2.2.34 Unavailable Second Far End History

uASFEHistoryPkg PACKAGE

ATTRIBUTES

uASFE GET;

REGISTERED AS {pMPackage 71};

7.2.2.35 Unavailable Second CP-bit History

uASCPHistoryPkg PACKAGE

ATTRIBUTES

uASCP GET;

REGISTERED AS {pMPackage 72};

7.2.2.36 Unavailable Second CP-bit Far End History

uASCPFEHistoryPkg PACKAGE

ATTRIBUTES

uASCPFE GET;

REGISTERED AS {pMPackage 73};

7.2.2.37 Unavailable Second P-bit History

uASPHistoryPkg PACKAGE

ATTRIBUTES

uASP GET;

REGISTERED AS {pMPackage 74};

7.2.2.38 Errored Seconds Network Performance History

eSNPHistoryPkg PACKAGE

ATTRIBUTES

eSNP GET;

REGISTERED AS {pMPackage 81};

7.2.2.39 Errored Seconds Network Performance Far End History

eSNPFEHistoryPkg PACKAGE

ATTRIBUTES

eSNPFE GET;

REGISTERED AS {pMPackage 82};

7.2.2.40 Severely Errored Seconds Network Performance History

sESNPHistoryPkg PACKAGE

ATTRIBUTES

sESNP GET;

REGISTERED AS {pMPackage 83};

7.2.2.41 Severely Errored Seconds Network Performance Far End History

sESNPFEHistoryPkg PACKAGE

ATTRIBUTES

sESNPFE GET;

REGISTERED AS {pMPackage 84};

7.2.2.42 Unavailable Seconds Network Performance History

uASNPHistoryPkg PACKAGE

ATTRIBUTES

uASNP GET;

REGISTERED AS {pMPackage 85};

7.2.2.43 Unavailable Seconds Network Performance Far End History

uASNPFEHistoryPkg PACKAGE

ATTRIBUTES

uASNPFE GET;

REGISTERED AS {pMPackage 86};

7.2.2.44 Alarm Indication Signal Second – Customer Installation History

aISSCIHistoryPkg PACKAGE

ATTRIBUTES

aISSCI

REPLACE-WITH-DEFAULT

DEFAULT VALUE PM.defaultMeasurementValue

GET;

REGISTERED AS {pMPackage 88};

7.3 *Additional Performance Monitoring Attribute Definitions*

7.3.1 Alarm Indication Signal Second (AISS)

aISS ATTRIBUTE

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

MATCHES FOR EQUALITY, ORDERING;

BEHAVIOUR aISSBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the AISS parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAttribute 1};

7.3.2 Controlled Slip Second (CSS)

cSS ATTRIBUTE

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

BEHAVIOUR cSSBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the CSS parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAttribute 2};

7.3.3 Controlled Slip Second Far End (CSSFE)

cSSFE ATTRIBUTE

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

BEHAVIOUR cSSFEBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the CSSFE parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAttribute 3};

7.3.4 Code Violation (CV)

cV ATTRIBUTE

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

BEHAVIOUR cVBehaviour BEHAVIOUR

DEFINED AS

“This attribute corresponds to the CV parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.”;;

REGISTERED AS {pMAttribute 4};

7.3.5 Code Violation, CP-bit (CVCP)

cVCP ATTRIBUTE

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

BEHAVIOUR cVCPBehaviour BEHAVIOUR

DEFINED AS

“This attribute corresponds to the CVCP parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.”;;

REGISTERED AS {pMAttribute 5};

7.3.6 Code Violation, CP-bit Far End (CVCPFE)

cVCPFE ATTRIBUTE

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

BEHAVIOUR cVCPFEBehaviour BEHAVIOUR

DEFINED AS

“This attribute corresponds to the CVCPFE parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.”;;

REGISTERED AS {pMAttribute 6};

7.3.7 Code Violation Far End (CVFE)

cVFE ATTRIBUTE

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

BEHAVIOUR cVFEBehaviour BEHAVIOUR

DEFINED AS

“This attribute corresponds to the CVFE parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.”;;

REGISTERED AS {pMAttribute 7};

7.3.8 Code Violation, P-bit (CVP)

cVP ATTRIBUTE

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

BEHAVIOUR cVPBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the CVP parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAttribute 8};

7.3.9 Errored Second (ES)

eS ATTRIBUTE

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

BEHAVIOUR eSBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the ES parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAttribute 9};

7.3.10 Errored Second, CP-bit (ESCP)

eSCP ATTRIBUTE

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

BEHAVIOUR eSCPBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the ESCP parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAttribute 10};

7.3.11 Errored Second, CP-bit Far End (ESCPFE)

eSCPFE ATTRIBUTE

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

BEHAVIOUR eSCPFEBehaviour BEHAVIOUR

DEFINED AS

“This attribute corresponds to the ESCPFE parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.”;;

REGISTERED AS {pMAAttribute 11};

7.3.12 Errored Second Far End (ESFE)

eSFE ATTRIBUTE

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

BEHAVIOUR eSFEBehaviour BEHAVIOUR

DEFINED AS

“This attribute corresponds to the ESFE parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.”;;

REGISTERED AS {pMAAttribute 12};

7.3.13 Errored Second, P-bit (ESP)

eSP ATTRIBUTE

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

BEHAVIOUR eSPBehaviour BEHAVIOUR

DEFINED AS

“This attribute corresponds to the ESP parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.”;;

REGISTERED AS {pMAAttribute 13};

7.3.14 Errored Second, Type A (ESA)

eSA ATTRIBUTE

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

BEHAVIOUR eSABehaviour BEHAVIOUR

DEFINED AS

“This attribute corresponds to the ESA parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.”;;

REGISTERED AS {pMAAttribute 14};

7.3.15 Errored Second, Type A, CP-bit (ESACP)

eSACP ATTRIBUTE

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

BEHAVIOUR eSACPBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the ESACP parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAttribute 15};

7.3.16 Errored Second, Type A, CP-bit Far End (ESACPF)

eSACPF ATTRIBUTE

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

BEHAVIOUR eSACPFBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the ESACPF parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAttribute 16};

7.3.17 Errored Second, Type A, Far End (ESAFE)

eSAFE ATTRIBUTE

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

BEHAVIOUR eSAFEBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the ESAFE parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAttribute 17};

7.3.18 Errored Second, Type A, P-bit (ESAP)

eSAP ATTRIBUTE

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

BEHAVIOUR eSAPBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the ESAP parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAAttribute 18};

7.3.19 Errored Second, Type B (ESB)

eSB ATTRIBUTE

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

BEHAVIOUR eSBBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the ESB parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAAttribute 19};

7.3.20 Errored Second, Type B, CP-bit (ESBCP)

eSBCP ATTRIBUTE

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

BEHAVIOUR eSBCPBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the ESBCP parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAAttribute 20};

7.3.21 Errored Second, Type B, CP-bit Far End (ESBCPFE)

eSBCPFE ATTRIBUTE

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

BEHAVIOUR eSBCPFEBehaviour BEHAVIOUR

DEFINED AS

“This attribute corresponds to the ESBCPFE parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.”;;

REGISTERED AS {pMAttribute 21};

7.3.22 Errored Second, Type B, Far End (ESBFE)

eSBFE ATTRIBUTE

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

BEHAVIOUR eSBFEBehaviour BEHAVIOUR

DEFINED AS

“This attribute corresponds to the ESBFE parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.”;;

REGISTERED AS {pMAttribute 22};

7.3.23 Errored Second, Type B, P-bit (ESBP)

eSBP ATTRIBUTE

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

BEHAVIOUR eSBPBehaviour BEHAVIOUR

DEFINED AS

“This attribute corresponds to the ESBP parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.”;;

REGISTERED AS {pMAttribute 23};

7.3.24 Loss of Signal Second (LOSS)

LOSS ATTRIBUTE

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

BEHAVIOUR LOSSBehaviour BEHAVIOUR

DEFINED AS

“This attribute corresponds to the LOSS parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.”;;

REGISTERED AS {pMAttribute 24};

7.3.25 SEF/AIS Severely Errored Framing Alarm Indication Signal Second (SAS)

sAS ATTRIBUTE

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

BEHAVIOUR sASBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the SAS parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAAttribute 25};

7.3.26 SEF/AIS Severely Errored Framing Alarm Indication Signal Second, CP-bit Far End (SASCPFE)

sASCPFE ATTRIBUTE

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

BEHAVIOUR sASCPFEBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the SASCPFE parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAAttribute 26};

7.3.27 Severely Errored Frame Second Far End (SEFSFE)

sEFSFE ATTRIBUTE

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

BEHAVIOUR sEFSFEBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the SEFSFE parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAAttribute 27};

7.3.28 Severely Errored Second (SES)

sES ATTRIBUTE

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

BEHAVIOUR sESBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the SES parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAttribute 28};

7.3.29 Severely Errored Second, CP-bit (SESCP)

sESCP ATTRIBUTE

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

BEHAVIOUR sESCPBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the SESCO parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAttribute 29};

7.3.30 Severely Errored Second, CP-bit Far End (SESCPFE)

sESCPFE ATTRIBUTE

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

BEHAVIOUR sESCPFEBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the SESCOFE parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAttribute 30};

7.3.31 Severely Errored Second Far End (SESFE)

sESFE ATTRIBUTE

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

BEHAVIOUR sESFEBehaviour BEHAVIOUR

DEFINED AS

“This attribute corresponds to the SESFE parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.”;;

REGISTERED AS {pMAttribute 31};

7.3.32 Severely Errored Second P-bit (SESP)

sESP ATTRIBUTE

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

BEHAVIOUR sESPBehaviour BEHAVIOUR

DEFINED AS

“This attribute corresponds to the SESP parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.”;;

REGISTERED AS {pMAttribute 32};

7.3.33 Unavailable Second (UAS)

uAS ATTRIBUTE

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

BEHAVIOUR uASBehaviour BEHAVIOUR

DEFINED AS

“This attribute corresponds to the UAS parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.”;;

REGISTERED AS {pMAttribute 33};

7.3.34 Unavailable Second Far End (UASFE)

uASFE ATTRIBUTE

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

BEHAVIOUR uASFEBehaviour BEHAVIOUR

DEFINED AS

“This attribute corresponds to the UASFE parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.”;;

REGISTERED AS {pMAttribute 34};

7.3.35 Unavailable Second CP-bit (UASCP)

uASCP ATTRIBUTE

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

BEHAVIOUR uASCPBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the UASCP parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAAttribute 35};

7.3.36 Unavailable Second CP-bit Far End (UASCPFE)

uASCPFE ATTRIBUTE

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

BEHAVIOUR uASCPFEBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the UASCPFE parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAAttribute 36};

7.3.37 Unavailable Second P-bit (UASP)

uASP ATTRIBUTE

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

BEHAVIOUR uASPBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the UASP parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAAttribute 37};

7.3.38 Errored Seconds Network Performance (ESNP)

eSNP ATTRIBUTE

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

BEHAVIOUR eSNPBehaviour BEHAVIOUR

DEFINED AS

“This attribute corresponds to the ES-NP parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.”;;

REGISTERED AS {pMAttribute 38};

7.3.39 Errored Seconds Network Performance Far End (ESNPFE)

eSNPFE ATTRIBUTE

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

BEHAVIOUR eSNPFEBehaviour BEHAVIOUR

DEFINED AS

“This attribute corresponds to the ES-NPFE parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.”;;

REGISTERED AS {pMAttribute 39};

7.3.40 Severely Errored Seconds Network Performance (SESNP)

sESNP ATTRIBUTE

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

BEHAVIOUR sESNPBehaviour BEHAVIOUR

DEFINED AS

“This attribute corresponds to the SES-NP parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.”;;

REGISTERED AS {pMAttribute 40};

7.3.41 Severely Errored Seconds Network Performance Far End (SESNPFE)

sESNPFE ATTRIBUTE

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

BEHAVIOUR sESNPFEBehaviour BEHAVIOUR

DEFINED AS

“This attribute corresponds to the SES-NPFE parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.”;;

REGISTERED AS {pMAttribute 41};

7.3.42 Unavailable Seconds Network Performance (UASNP)

uASNP ATTRIBUTE

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

BEHAVIOUR uASNPBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the UAS-NP parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAAttribute 42};

7.3.43 Unavailable Seconds Network Performance Far End (UASNPFE)

uASNPFE ATTRIBUTE

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

BEHAVIOUR uASNPFEBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the UAS-NPFE parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAAttribute 43};

7.3.44 Alarm Indication Signal – Customer Installation

aISSCI ATTRIBUTE

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

BEHAVIOUR aISSCIBehaviour BEHAVIOUR

DEFINED AS

"This attribute corresponds to the AISSCI parameter defined in ATIS-0300231 for the different entities of the transmission hierarchy.";;

REGISTERED AS {pMAAttribute 44};

7.4 Name Bindings

See 4.3.4 of ITU-T Recommendation Q.822 for details of name binding definitions.

7.4.1 Additional Name Binding Definitions

dS1LineTTPSinkNECurrentData-terminationPoint NAME BINDING

SUBORDINATE OBJECT CLASS dS1LineTTPSinkNECurrentData AND SUBCLASSES;

NAMED BY SUPERIOR OBJECT CLASS

“Recommendation M.3100”:terminationPoint AND SUBCLASSES;

WITH ATTRIBUTE “Recommendation X.739”:scannerId;

CREATE

WITH-REFERENCE-OBJECT,

WITH-AUTOMATIC-INSTANCE-NAMING;

DELETE

DELETES-CONTAINED-OBJECTS;

REGISTERED AS {pMNameBinding 9};

dS1LineTTPSinkFECurrentData-terminationPoint NAME BINDING

SUBORDINATE OBJECT CLASS dS1LineTTPSinkFECurrentData AND SUBCLASSES;

NAMED BY SUPERIOR OBJECT CLASS

“Recommendation M.3100”:terminationPoint AND SUBCLASSES;

WITH ATTRIBUTE “Recommendation X.739”:scannerId;

CREATE

WITH-REFERENCE-OBJECT,

WITH-AUTOMATIC-INSTANCE-NAMING;

DELETE

DELETES-CONTAINED-OBJECTS;

REGISTERED AS {pMNameBinding 10};

dS1PathTTPSinkNECurrentData-terminationPoint NAME BINDING

SUBORDINATE OBJECT CLASS dS1PathTTPSinkNECurrentData AND SUBCLASSES;

NAMED BY SUPERIOR OBJECT CLASS

“Recommendation M.3100”:terminationPoint AND SUBCLASSES;

WITH ATTRIBUTE “Recommendation X.739”:scannerId;

CREATE

WITH-REFERENCE-OBJECT,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {pMNameBinding 11};

dS1PathTTPSinkFECURRENTData-terminationPoint NAME BINDING
SUBORDINATE OBJECT CLASS dS1PathTTPSinkFECURRENTData AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS
"Recommendation M.3100":terminationPoint AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739":scannerId;
CREATE
WITH-REFERENCE-OBJECT,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {pMNameBinding 12};

dS3LineTTPSinkNECURRENTData-terminationPoint NAME BINDING
SUBORDINATE OBJECT CLASS dS3LineTTPSinkNECURRENTData AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS
"Recommendation M.3100":terminationPoint AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation X.739":scannerId;
CREATE
WITH-REFERENCE-OBJECT,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {pMNameBinding 13};

dS3PathTTPSinkNECURRENTData-terminationPoint NAME BINDING
SUBORDINATE OBJECT CLASS dS3PathTTPSinkNECURRENTData AND SUBCLASSES;

NAMED BY SUPERIOR OBJECT CLASS

“Recommendation M.3100”:terminationPoint AND SUBCLASSES;

WITH ATTRIBUTE “Recommendation X.739”:scannerId;

CREATE

WITH-REFERENCE-OBJECT,

WITH-AUTOMATIC-INSTANCE-NAMING;

DELETE

DELETES-CONTAINED-OBJECTS;

REGISTERED AS {pMNameBinding 14};

dS3PathTTPSinkFECURRENTData-terminationPoint NAME BINDING

SUBORDINATE OBJECT CLASS dS3PathTTPSinkFECURRENTData AND SUBCLASSES;

NAMED BY SUPERIOR OBJECT CLASS

“Recommendation M.3100”:terminationPoint AND SUBCLASSES;

WITH ATTRIBUTE “Recommendation X.739”:scannerId;

CREATE

WITH-REFERENCE-OBJECT,

WITH-AUTOMATIC-INSTANCE-NAMING;

DELETE

DELETES-CONTAINED-OBJECTS;

REGISTERED AS {pMNameBinding 15};

dS1LineTTPSinkNEHistoryData-dS1LineTTPSinkNECURRENTData NAME BINDING

SUBORDINATE OBJECT CLASS dS1LineTTPSinkNEHistoryData AND SUBCLASSES;

NAMED BY SUPERIOR OBJECT CLASS

dS1LineTTPSinkNECURRENTData AND SUBCLASSES;

WITH ATTRIBUTE “Recommendation Q.822”:historyDataId;

DELETE

DELETES-CONTAINED-OBJECTS;

REGISTERED AS {pMNameBinding 16};

dS1LineTTPSinkFEHistoryData-dS1LineTTPSinkFECURRENTData NAME BINDING

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SUBORDINATE OBJECT CLASS dS1LineTTPSinkFEHistoryData AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS

dS1LineTTPSinkFECurrentData AND SUBCLASSES;

WITH ATTRIBUTE "Recommendation Q.822":historyDataId;

DELETE

DELETES-CONTAINED-OBJECTS;

REGISTERED AS {pMNameBinding 17};

dS1PathTTPSinkNEHistoryData-dS1PathTTPSinkNECurrentData NAME BINDING

SUBORDINATE OBJECT CLASS dS1PathTTPSinkNEHistoryData AND SUBCLASSES;

NAMED BY SUPERIOR OBJECT CLASS

dS1PathTTPSinkNECurrentData AND SUBCLASSES;

WITH ATTRIBUTE "Recommendation Q.822":historyDataId;

DELETE

DELETES-CONTAINED-OBJECTS;

REGISTERED AS {pMNameBinding 18};

dS1PathTTPSinkFEHistoryData-dS1PathTTPSinkFECurrentData NAME BINDING

SUBORDINATE OBJECT CLASS dS1PathTTPSinkFEHistoryData AND SUBCLASSES;

NAMED BY SUPERIOR OBJECT CLASS

dS1PathTTPSinkFECurrentData AND SUBCLASSES;

WITH ATTRIBUTE "Recommendation Q.822":historyDataId;

DELETE

DELETES-CONTAINED-OBJECTS;

REGISTERED AS {pMNameBinding 19};

dS3LineTTPSinkNEHistoryData-dS3LineTTPSinkNECurrentData NAME BINDING

SUBORDINATE OBJECT CLASS dS3LineTTPSinkNEHistoryData AND SUBCLASSES;

NAMED BY SUPERIOR OBJECT CLASS

dS3LineTTPSinkNECurrentData AND SUBCLASSES;

WITH ATTRIBUTE "Recommendation Q.822":historyDataId;

DELETE

DELETES-CONTAINED-OBJECTS;
REGISTERED AS {pMNameBinding 20};

dS3PathTTPSinkNEHistoryData-dS3PathTTPSinkNECurrentData NAME BINDING
SUBORDINATE OBJECT CLASS dS3PathTTPSinkNEHistoryData AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS
dS3PathTTPSinkNECurrentData AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation Q.822":historyDataId;
DELETE

DELETES-CONTAINED-OBJECTS;
REGISTERED AS {pMNameBinding 21};

dS3PathTTPSinkFEHistoryData-dS3PathTTPSinkFECurrentData NAME BINDING
SUBORDINATE OBJECT CLASS dS3PathTTPSinkFEHistoryData AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS
dS3PathTTPSinkFECurrentData AND SUBCLASSES;
WITH ATTRIBUTE "Recommendation Q.822":historyDataId;
DELETE

DELETES-CONTAINED-OBJECTS;
REGISTERED AS {pMNameBinding 22};

7.5 Supporting Production

PM {iso member-body usa(840) ansi-t1-247-1995(10031) pM(0) }

DEFINITIONS IMPLICIT TAGS ::= BEGIN

— EXPORTS everything

IMPORTS

Attribute FROM CMIP-1

{joint-iso-ccitt ms(9) cmip(1) modules(0) protocol(3) }

Count FROM Attribute-ASN1Module

{joint-iso-ccitt ms(9) smi(3) part2(2) asn1Module(2) 1 }

PerceivedSeverity FROM Attribute-ASN1Module

```
{joint-iso-ccitt ms(9) smi(3) part2(2) asn1Module(2) 1 };
pMObjectClass OBJECT IDENTIFIER ::=
{iso member-body usa(840) ansi-t1-247-1995(10031) pMObjectClass(3)}
pMPackage OBJECT IDENTIFIER ::=
{iso member-body usa(840) ansi-t1-247-1995(10031) pMPackage(4)}
pMAttribute OBJECT IDENTIFIER ::=
{iso member-body usa(840) ansi-t1-247-1995(10031) pMAttribute(7)}
pMNameBinding OBJECT IDENTIFIER ::=
{iso member-body usa(840) ansi-t1-247-1995(10031) pMNameBinding(6)}
defaultMeasurementValue Count ::= 0
END — PMModule
```

8 Performance Management Functional Units

The services defined to support the performance management functions specified in clause 6 have been grouped into several “functional units” to allow negotiation of their use on an association (during association establishment), and to allow referencing by other standards. Functional unit negotiation shall be performed as described in ATIS-0300208. Functional units for each functional category are defined in the following subclauses.

8.1 *Performance Monitoring Functional Units*

See 4.5 of ITU-T Recommendation Q.822 for performance management functional units definitions.

8.2 *Traffic Management & Network Management Functional Units*

A list of the traffic management and network management functional units, their corresponding services, functions, and object classes is for further study.

8.3 *Quality of Service Observations Functional Units*

A list of the quality of service observations functional units, their corresponding services, functions, and object classes is for further study.

9 Performance Management Service Definitions

See 4.4 of ITU-T Recommendation Q.822 for performance management service definition.

10 Conformance

See section 7 of ITU-T Recommendation Q.822 for details of conformance.

11 Inheritance and Containment Diagrams

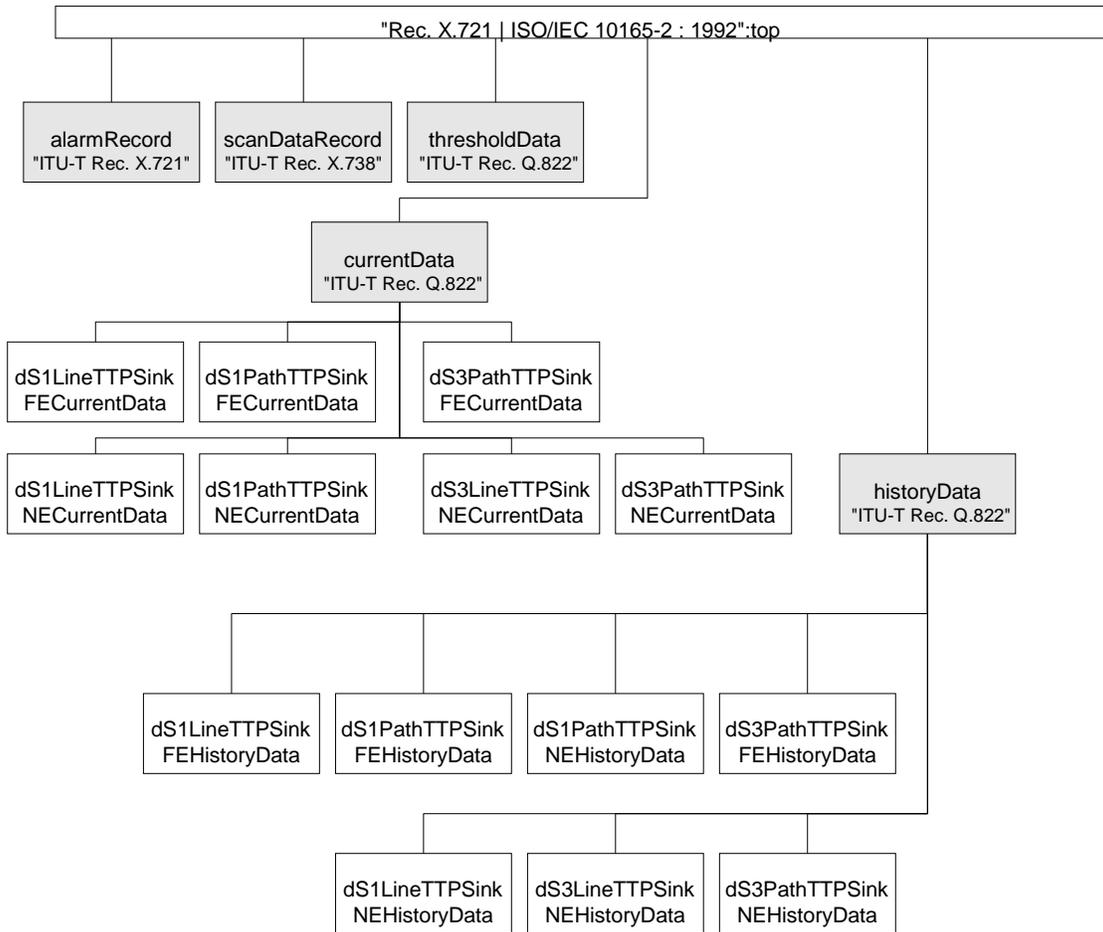


Figure 11.1 - Inheritance Diagram

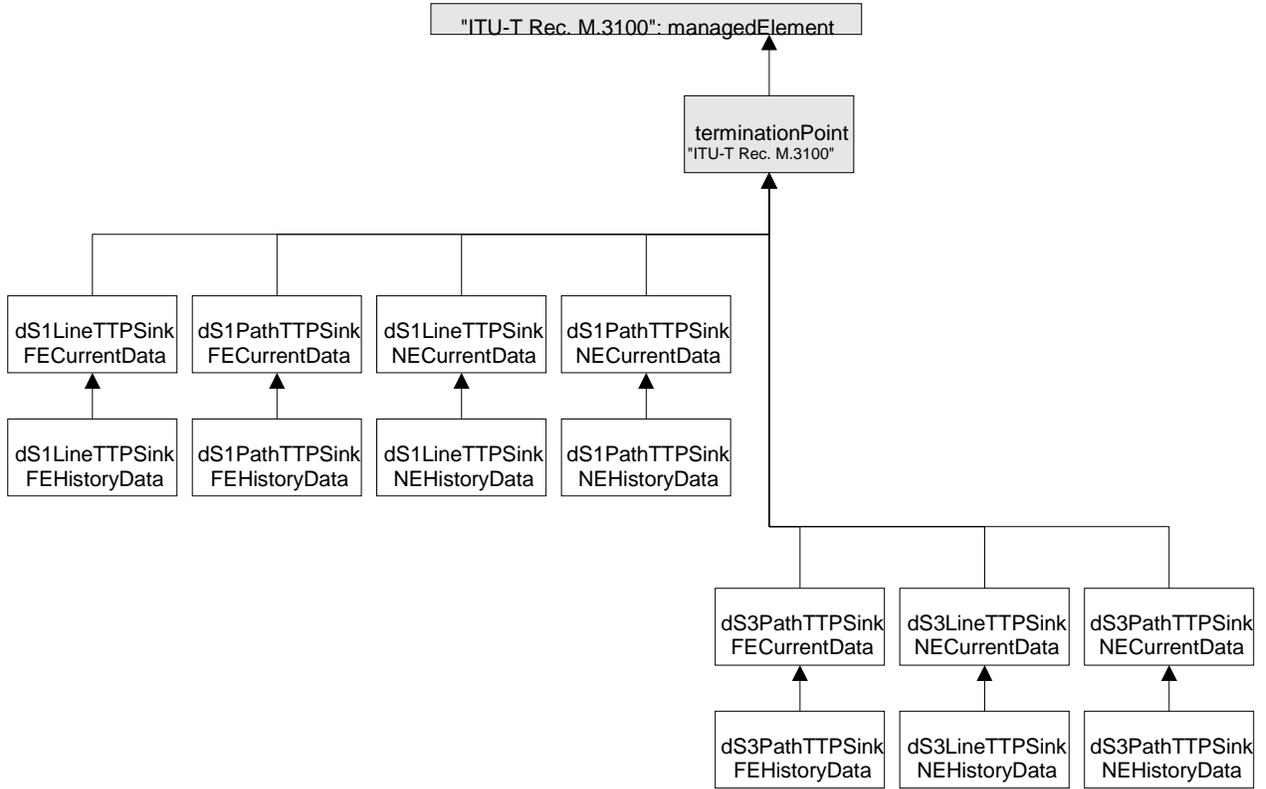


Figure 11.2 - ITU-T Binding Diagram

Annex A
(informative)

A Deprecated/Obsolete Management Information from ATIS-0300247

A.1 Object Classes

A.1.1 DS1 Line TTP Sink Current Data

dS1LineTTPSinkCurrentData MANAGED OBJECT CLASS

DERIVED FROM "Recommendation Q.822":currentData;

CHARACTERIZED BY

eSPkg,

dS1LineTTPSinkCurrentDataPkg PACKAGE

BEHAVIOUR dS1LineTTPSinkCurrentDataBehaviour BEHAVIOUR

DEFINED AS

"The DS1 Line TTP Sink Current Data object class is a class of managed support objects that is used to monitor performance parameter aspects of DS1 Line TTPs.

Instances of this object class may be created either by a managing system or automatically by a managed system. These are contained in the observed trail termination point object at the DS1 rate.

Criteria for the inclusion of the conditional packages as represented in the 'PRESENT IF' clause for each package is derived from the functional requirements for the corresponding performance measurement parameters in ATIS-0300231."

....

CONDITIONAL PACKAGES

cVPkg

PRESENT IF "an instance supports it.",

sESPkg

PRESENT IF "an instance supports it.",

eSFEPkg

PRESENT IF "and only if the framing format is DS1 ESF and far end monitoring is supported.",

IOSSPkg

PRESENT IF "an instance supports it.";

REGISTERED AS {pMObjectClass 1};

A.1.2 DS1 Line TTP Sink History Data

dS1LineTTPSinkHistoryData MANAGED OBJECT CLASS

DERIVED FROM "Recommendation Q.822":historyData;

CHARACTERIZED BY

eSHistoryPkg,

dS1LineTTPSinkHistoryDataPkg PACKAGE

BEHAVIOUR dS1LineTTPSinkHistoryDataBehaviour BEHAVIOUR

DEFINED AS

"Instances of this object class are used to store the observed measurements of the superior dS1LineTTPSinkCurrentData object at the end of an observation interval.

Criteria for the inclusion of the conditional packages as represented in the 'PRESENT IF' clause for each package is derived from the functional requirements for the corresponding performance measurement parameters in ATIS-0300231."

;;;

CONDITIONAL PACKAGES

cVHistoryPkg

PRESENT IF "an instance supports it.",

eSFEHistoryPkg

PRESENT IF "and only if the framing format is DS1 ESF and far end monitoring is supported.",

IOSSHistoryPkg

PRESENT IF "an instance supports it.",

sESHistoryPkg

PRESENT IF "an instance supports it.";

REGISTERED AS {pMObjectClass 2};

A.1.3 DS1 Path TTP Sink Current Data

dS1PathTTPSinkCurrentData MANAGED OBJECT CLASS

DERIVED FROM "Recommendation Q.822":currentData;

CHARACTERIZED BY

cVPkg,

eSPkg,

sASPkg,

sESPkg,

uASPkg,

dS1PathTTPSinkCurrentDataPkg PACKAGE

BEHAVIOUR dS1PathTTPSinkCurrentDataBehaviour BEHAVIOUR

DEFINED AS

“The DS1 Path TTP Sink Current Data object class is a class of managed support object that is used to monitor performance aspects of DS1 path TTPs.

Instances of this object class may be created either by a managing system or automatically by a managed system. These are contained in the observed trail termination point object at the DS1 rate.

Criteria for the inclusion of the conditional packages as represented in the ‘PRESENT IF’ clause for each package is derived from the functional requirements for the corresponding performance measurement parameters in ATIS-0300231.”

....

CONDITIONAL PACKAGES

aISSPkg

PRESENT IF “an instance supports it.”,

cSSPkg

PRESENT IF “and only if controlled slip monitoring is supported.”,

cSSFEPkg

PRESENT IF “and only if the framing format is DS1 ESF and both far end monitoring and controlled slip monitoring are supported.”,

cVFEPkg

PRESENT IF “and only if the framing format is DS1 ESF and far end monitoring is supported.”,

eSAFEPkg

PRESENT IF “the framing format is DS1 ESF and an instance supports it.”,

eSAPkg

PRESENT IF “the framing format is DS1 ESF and an instance supports it.”,

eSBFEPkg

PRESENT IF “the framing format is DS1 ESF and an instance supports it.”,
eSBPkg

PRESENT IF “the framing format is DS1 ESF and an instance supports it.”,
eSFEPkg

PRESENT IF “and only if the framing format is DS1 ESF and far end monitoring is supported”,
sEFSFEPkg

PRESENT IF “and only if the framing format is DS1 ESF and far end monitoring is supported”,
sESFEPkg

PRESENT IF “and only if the framing format is DS1 ESF and far end monitoring is supported.”,
uASFEPkg

PRESENT IF “and only if the framing format is DS1 ESF and far end monitoring is supported.”;
REGISTERED AS {pMObjectClass 3};

A.1.4 DS1 Path TTP Sink History Data

dS1PathTTPSinkHistoryData MANAGED OBJECT CLASS

DERIVED FROM “Recommendation Q.822”:historyData;

CHARACTERIZED BY

cVHistoryPkg,

eSHistoryPkg,

sASHistoryPkg,

sESHHistoryPkg,

uASHHistoryPkg,

dS1PathTTPSinkHistoryDataPkg PACKAGE

BEHAVIOUR dS1PathTTPSinkHistoryDataBehaviour BEHAVIOUR

DEFINED AS

“Instances of this object class are used to store the observed measurements of the observed dS1PathTTPSinkCurrentData object at the end of an observation interval.

Criteria for the inclusion of the conditional packages as represented in the 'PRESENT IF' clause for each package is derived from the functional requirements for the corresponding performance measurement parameters in ATIS-0300231."

;;;

CONDITIONAL PACKAGES

aISSHistoryPkg

PRESENT IF "an instance supports it.",

cSSFEHistoryPkg

PRESENT IF "and only if the framing format is DS1 ESF and both far end monitoring and controlled slip monitoring are supported.",

cSSHHistoryPkg

PRESENT IF "and only if controlled slip monitoring is supported.",

cVFEHistoryPkg

PRESENT IF "and only if the framing format is DS1 ESF and far end monitoring is supported.",

eSAFEHistoryPkg

PRESENT IF "the framing format is DS1 ESF and an instance supports it.",

eSAHistoryPkg

PRESENT IF "the framing format is DS1 ESF and an instance supports it.",

eSBFEHistoryPkg

PRESENT IF "the framing format is DS1 ESF and an instance supports it.",

eSBHistoryPkg

PRESENT IF "the framing format is DS1 ESF and an instance supports it.",

eSFEHistoryPkg

PRESENT IF "and only if the framing format is DS1 ESF and far end monitoring is supported.",

sEFSFEHistoryPkg

PRESENT IF "and only if the framing format is DS1 ESF and far end monitoring is supported.",

sESFEHistoryPkg

PRESENT IF "and only if the framing format is DS1 ESF and far end monitoring is supported.",

uASFEHistoryPkg

PRESENT IF “and only if the framing format is DS1 ESF and far end monitoring is supported.”;

REGISTERED AS {pMObjectClass 4};

A.1.5 DS3 Line TTP Sink Current Data

dS3LineTTPSinkCurrentData MANAGED OBJECT CLASS

DERIVED FROM “Recommendation Q.822”:currentData;

CHARACTERIZED BY

eSPkg,

dS3LineTTPSinkCurrentDataPkg PACKAGE

BEHAVIOUR dS3LineTTPSinkCurrentDataBehaviour BEHAVIOUR

DEFINED AS

“The DS3 Line TTP Sink Current Data object class is a class of managed support object that is used to monitor performance parameter aspects of DS3 Line TTPs.

Instances of this object class may be created either by a managing system or automatically by managed system and are contained in the observed trail termination point object at the DS3 rate.

Criteria for the inclusion of the conditional packages as represented in the ‘PRESENT IF’ clause for each package is derived from the functional requirements for the corresponding performance measurement parameters in ATIS-0300231.”

;;;

CONDITIONAL PACKAGES

cVPkg

PRESENT IF “an instance supports it.”,

eSAPkg

PRESENT IF “an instance supports it.”,

eSBPkg

PRESENT IF “an instance supports it.”,

IOSSPkg

PRESENT IF “an instance supports it.”,

sESPkg

PRESENT IF “an instance supports it.”;

REGISTERED AS {pMObjectClass 5};

A.1.6 DS3 Line TTP Sink History Data

dS3LineTTPSinkHistoryData MANAGED OBJECT CLASS

DERIVED FROM "Recommendation Q.822":historyData;

CHARACTERIZED BY

eSHistoryPkg,

dS3LineTTPSinkHistoryDataPkg PACKAGE

BEHAVIOUR dS3LineTTPSinkHistoryDataBehaviour BEHAVIOUR

DEFINED AS

"Instances of this object class are used to store the observed measurements of the observed dS3LineTTPSinkCurrentData object at the end of an observation interval.

Criteria for the inclusion of the conditional packages as represented in the 'PRESENT IF' clause for each package is derived from the functional requirements for the corresponding performance measurement parameters in ATIS-0300231."

;;;

CONDITIONAL PACKAGES

cVHistoryPkg

PRESENT IF "an instance supports it.",

eSAHistoryPkg

PRESENT IF "an instance supports it.",

eSBHistoryPkg

PRESENT IF "an instance supports it.",

IOSSHHistoryPkg

PRESENT IF "an instance supports it.",

sESHHistoryPkg

PRESENT IF "an instance supports it.";

REGISTERED AS {pMObjectClass 6};

A.1.7 DS3 Path TTP Sink Current Data

dS3PathTTPSinkCurrentData MANAGED OBJECT CLASS

DERIVED FROM "Recommendation Q.822":currentData;

CHARACTERIZED BY

sASPPkg,

dS3PathTTPSinkCurrentDataPkg PACKAGE

BEHAVIOUR dS3PathTTPSinkCurrentDataBehaviour BEHAVIOUR

DEFINED AS

“The DS3 Path TTP Sink Current Data object class is a class of managed support object that is used to monitor performance aspects of DS3 path TTPs.

Instances of this object class may be created either by a managing system or automatically by a managed system and are contained in the observed trail termination point object at the DS3 rate.

Criteria for the inclusion of the conditional packages as represented in the ‘PRESENT IF’ clause for each package is derived from the functional requirements for the corresponding performance measurement parameters in ATIS-0300231.”

;;;

CONDITIONAL PACKAGES

aISSPkg

PRESENT IF “an instance supports it.”,

cVCPFEPkg

PRESENT IF “and only if the C-bit Parity Application with far end monitoring is supported.”,

cVCPPkg

PRESENT IF “and only if the C-bit Parity Application is supported.”,

cVPPkg

PRESENT IF “the M23 Application is supported, and may also be optionally present if the C-bit Parity Application is supported.”,

eSACPFEPkg

PRESENT IF “the C-bit Parity Application is supported and an instance supports it.”,

eSACPPkg

PRESENT IF “the C-bit Parity Application is supported and an instance supports it.”,

eSAPPkg

PRESENT IF “an instance supports it.”,

eSBCPFEPkg

PRESENT IF “the C-bit Parity Application is supported and an instance supports it.”,

eSBCPPkg

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PRESENT IF “the C-bit Parity Application is supported and an instance supports it.”,
eSBPPkg

PRESENT IF “an instance supports it.”,
eSCPFEPkg

PRESENT IF “and only if the C-bit Parity Application with far end monitoring is supported.”,
eSCPPkg

PRESENT IF “and only if the C-bit Parity Application is supported.”,
eSPPkg

PRESENT IF “the M23 Application is supported, and may also be optionally present if the C-bit Parity Application is supported.”,
sASCPFEPkg

PRESENT IF “and only if the C-bit Parity Application with far end monitoring is supported.”,
sESCPFEPkg

PRESENT IF “and only if the C-bit Parity Application with far end monitoring is supported.”,
sESCPPkg

PRESENT IF “and only if the C-bit Parity Application is supported.”,
sESPPkg

PRESENT IF “the M23 Application is supported, and may also be optionally present if the C-bit Parity Application is supported.”,
uASCPFEPkg

PRESENT IF “and only if the C-bit Parity Application with far end monitoring is supported.”,
uASCPPkg

PRESENT IF “and only if the C-bit Parity Application is supported.”,
uASPPkg

PRESENT IF “the M23 Application is supported, and may also be optionally present if the C-bit Parity Application is supported.”;

REGISTERED AS {pMObjectClass 7};

A.1.8 DS3 Path TTP Sink History Data

dS3PathTTPSinkHistoryData MANAGED OBJECT CLASS

DERIVED FROM "Recommendation Q.822":historyData;

CHARACTERIZED BY

sASHistoryPkg,

dS3PathTTPSinkHistoryDataPkg PACKAGE

BEHAVIOUR dS3PathTTPSinkHistoryDataBehaviour BEHAVIOUR

DEFINED AS

"Instances of this object class are used to store the observed measurements of the observed dS3PathTTPSinkCurrentData object at the end of an observation interval.

Criteria for the inclusion of the conditional packages as represented in the 'PRESENT IF' clause for each package is derived from the functional requirements for the corresponding performance measurement parameters in ATIS-0300231."

;;;

CONDITIONAL PACKAGES

aISSHistoryPkg

PRESENT IF "an instance supports it.",

cVCPFEHistoryPkg

PRESENT IF "and only if the C-bit Parity Application with far end monitoring is supported.",

cVCPHistoryPkg

PRESENT IF "and only if the C-bit Parity Application is supported.",

cVPHistoryPkg

PRESENT IF "the M23 Application is supported, and may also be optionally present if the C-bit Parity Application is supported.",

eSACPFEHistoryPkg

PRESENT IF "the C-bit Parity Application is supported and an instance supports it.",

eSACPHistoryPkg

PRESENT IF "the C-bit Parity Application is supported and an instance supports it.",

eSAPHistoryPkg

PRESENT IF "an instance supports it.",

eSBCPFHistoryPkg

PRESENT IF “the C-bit Parity Application is supported and an instance supports it.”,

eSBCPHistoryPkg

PRESENT IF “the C-bit Parity Application is supported and an instance supports it.”,

eSBPHistoryPkg

PRESENT IF “an instance supports it.”,

eSCPFEHistoryPkg

PRESENT IF “and only if the C-bit Parity Application with far end monitoring is supported.”,

eSCPHistoryPkg

PRESENT IF “and only if the C-bit Parity Application is supported.”,

eSPHistoryPkg

PRESENT IF “the M23 Application is supported, and may also be optionally present if the C-bit Parity Application is supported.”,

sASCPFEHistoryPkg

PRESENT IF “and only if the C-bit Parity Application with far end monitoring is supported.”,

sESCPFEHistoryPkg

PRESENT IF “and only if the C-bit Parity Application with far end monitoring is supported.”,

sESCPHistoryPkg

PRESENT IF “and only if the C-bit Parity Application is supported.”,

sESPHistoryPkg

PRESENT IF “the M23 Application is supported, and may also be optionally present if the C-bit Parity Application is supported.”,

uASCPFEHistoryPkg

PRESENT IF “and only if the C-bit Parity Application with far end monitoring is supported.”,

uASCPHistoryPkg

PRESENT IF “and only if the C-bit Parity Application is supported.”,

uASPHistoryPkg

PRESENT IF “the M23 Application is supported, and may also be optionally present if the C-bit Parity Application is supported.”;
REGISTERED AS {pMObjectClass 8};

A.2 Name Binding

dS1LineTTPSinkCurrentData-terminationPoint NAME BINDING
SUBORDINATE OBJECT CLASS dS1LineTTPSinkCurrentData AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS
“Recommendation M.3100”:terminationPoint AND SUBCLASSES;
WITH ATTRIBUTE “Recommendation X.739”:scannerId;
CREATE
WITH-REFERENCE-OBJECT,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {pMNameBinding 1};

dS1PathTTPSinkCurrentData-terminationPoint NAME BINDING
SUBORDINATE OBJECT CLASS dS1PathTTPSinkCurrentData AND SUBCLASSES;
NAMED BY SUPERIOR OBJECT CLASS
“Recommendation M.3100”:terminationPoint AND SUBCLASSES;
WITH ATTRIBUTE “Recommendation X.739”:scannerId;
CREATE
WITH-REFERENCE-OBJECT,
WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE
DELETES-CONTAINED-OBJECTS;
REGISTERED AS {pMNameBinding 2};

dS3LineTTPSinkCurrentData-terminationPoint NAME BINDING
SUBORDINATE OBJECT CLASS dS3LineTTPSinkCurrentData AND SUBCLASSES;

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NAMED BY SUPERIOR OBJECT CLASS

“Recommendation M.3100”:terminationPoint AND SUBCLASSES;

WITH ATTRIBUTE “Recommendation X.739”:scannerId;

CREATE

WITH-REFERENCE-OBJECT,

WITH-AUTOMATIC-INSTANCE-NAMING;

DELETE

DELETES-CONTAINED-OBJECTS;

REGISTERED AS {pMNameBinding 3};

dS3PathTTPSinkCurrentData-terminationPoint NAME BINDING

SUBORDINATE OBJECT CLASS dS3PathTTPSinkCurrentData AND SUBCLASSES;

NAMED BY SUPERIOR OBJECT CLASS

“Recommendation M.3100”:terminationPoint AND SUBCLASSES;

WITH ATTRIBUTE “Recommendation X.739”:scannerId;

CREATE

WITH-REFERENCE-OBJECT,

WITH-AUTOMATIC-INSTANCE-NAMING;

DELETE

DELETES-CONTAINED-OBJECTS;

REGISTERED AS {pMNameBinding 4};

dS1LineTTPSinkHistoryData-dS1LineTTPSinkCurrentData NAME BINDING

SUBORDINATE OBJECT CLASS dS1LineTTPSinkHistoryData AND SUBCLASSES;

NAMED BY SUPERIOR OBJECT CLASS

dS1LineTTPSinkCurrentData AND SUBCLASSES;

WITH ATTRIBUTE “Recommendation Q.822”:historyDataId;

DELETE

DELETES-CONTAINED-OBJECTS;

REGISTERED AS {pMNameBinding 5};

dS1PathTTPSinkHistoryData-dS1PathTTPSinkCurrentData NAME BINDING

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SUBORDINATE OBJECT CLASS dS1PathTTPSinkHistoryData AND SUBCLASSES;

NAMED BY SUPERIOR OBJECT CLASS

dS1PathTTPSinkCurrentData AND SUBCLASSES;

WITH ATTRIBUTE "Recommendation Q.822":historyDataId;

DELETE

DELETES-CONTAINED-OBJECTS;

REGISTERED AS {pMNameBinding 6};

dS3LineTTPSinkHistoryData-dS3LineTTPSinkCurrentData NAME BINDING

SUBORDINATE OBJECT CLASS dS3LineTTPSinkHistoryData AND SUBCLASSES;

NAMED BY SUPERIOR OBJECT CLASS

dS3LineTTPSinkCurrentData AND SUBCLASSES;

WITH ATTRIBUTE "Recommendation Q.822":historyDataId;

DELETE

DELETES-CONTAINED-OBJECTS;

REGISTERED AS {pMNameBinding 7};

dS3PathTTPSinkHistoryData-dS3PathTTPSinkCurrentData NAME BINDING

SUBORDINATE OBJECT CLASS dS3PathTTPSinkHistoryData AND SUBCLASSES;

NAMED BY SUPERIOR OBJECT CLASS

dS3PathTTPSinkCurrentData AND SUBCLASSES;

WITH ATTRIBUTE "Recommendation Q.822":historyDataId;

DELETE

DELETES-CONTAINED-OBJECTS;

REGISTERED AS {pMNameBinding 8};