



IEEE Standard for
Local and metropolitan area networks—
Frame Replication and Elimination for Reliability
Amendment 1: Information Model, YANG Data
Model, and Management Information Base Module

IEEE Computer Society

Developed by the
LAN/MAN Standards Committee

IEEE Std 802.1CBcv™-2021
(Amendment to IEEE Std 802.1CB™-2017)

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Local and metropolitan area networks—

Frame Replication and Elimination for Reliability

**Amendment 1: Information Model, YANG Data
Model, and Management Information Base Module**

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IEEE Computer Society

Approved 8 December 2021
IEEE SA Standards Board

Abstract: This amendment specifies YANG data models and MIB modules that allow configuration and status reporting for bridges and end systems with the capabilities for Frame Replication and Elimination for Reliability (FRER) and Stream identification.

Keywords: Bridged Local Area Networks, Bridges, Bridging, Frame Elimination, Frame Replication, IEEE 802[®], IEEE 802.1CB[™], IEEE 802.1Q[™], local area networks (LANs), MAC Bridges, Redundancy, Time-Sensitive Networking, TSN, Virtual Bridged Local Area Networks (virtual LANs)

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Introduction

This introduction is not part of IEEE Std 802.1CBcv-2021, IEEE Standard for Local and metropolitan area networks—Frame Replication and Elimination for Reliability—Amendment 1: Information Model, YANG Data Model, and Management Information Base Module.

This Standard defines an Information Model, a YANG Data Model, and a Management Information Base Module.

This standard contains state-of-the-art material. The area covered by this standard is undergoing evolution. Revisions are anticipated within the next few years to clarify existing material, to correct possible errors, and to incorporate new related material. Information on the current revision state of this and other IEEE 802 standards can be obtained from

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IEEE Standard for
Local and metropolitan area networks—

Frame Replication and Elimination for Reliability

Amendment 1: Information Model, YANG Data Model, and Management Information Base Module

(This amendment is based on IEEE Std 802.1CB™-2017.)

NOTE—The editing instructions contained in this amendment define how to merge the material contained therein into the existing base standard and its amendments to form the comprehensive standard.

The editing instructions are shown in ***bold italic***. Four editing instructions are used: change, delete, insert, and replace. ***Change*** is used to make corrections in existing text or tables. The editing instruction specifies the location of the change and describes what is being changed by using ~~strike~~ (to remove old material) and under (to add new material). ***Delete*** removes existing material. ***Insert*** adds new material without disturbing the existing material. Deletions and insertions may require renumbering. If so, renumbering instructions are given in the editing instruction. ***Replace*** is used to make changes in figures or equations by removing the existing figure or equation and replacing it with a new one. Editing instructions, change markings, and this NOTE will not be carried over into future editions because the changes will be incorporated into the base standard.⁶

⁶ Notes in text, tables, and figures are given for information only and do not contain requirements needed to implement the standard.

1. Overview

1.6 Introduction

Insert new text at the end of 1.6 as follows:

This standard also specifies a Unified Modeling Language (UML) based information model for the capabilities currently specified in Clause 9 and Clause 10 of this standard. A YANG data model and a Management Information Base (MIB) module, both based on that UML model, are provided in order to support configuration and status reporting.

2. Normative references

Insert the following references in alphanumeric order in Clause 2:

IETF RFC 2578 (STD 58), Structure of Management Information Version 2 (SMIv2), McCloghrie, K., D. Perkins, and J. Schoenwaelder, Apr. 1999.⁷

IETF RFC 2579 (STD 58), Textual Conventions for SMIv2, McCloghrie, K., D. Perkins, and J. Schoenwaelder, Apr. 1999.

IETF RFC 2580 (STD 58), Conformance Statements for SMIv2, McCloghrie, K., D. Perkins, and J. Schoenwaelder, Apr. 1999.

IETF RFC 3410, Introduction and Applicability Statements for Internet-Standard Management Framework, Case, J., R. Mundy, D. Partain, and B. Stewart, Dec. 2002.

IETF RFC 8343 (proposed standard), A YANG Data Model for Interface Management, Bjorklund, M., Mar. 2018.

⁷ IETF RFCs are available from the Internet Engineering Task Force (<https://www.rfc-archive.org/>).

4. Acronyms and abbreviations

Insert the following abbreviations in alphanumeric order in Clause 4:

MIB	Management Information Base
NETCONF	Network Configuration Protocol
SMI	Structure of Management Information
SNMP	Simple Network Management Protocol
YANG	Yet Another Next Generation ⁸
UML	Unified Modeling Language

⁸ YANG is best viewed as a name, not an acronym

5. Conformance

5.8 Talker end system optional behaviors

Change list items f) and g) in 5.8 as follows:

- f) The PRP sequence trailer (7.10); ~~and/or~~
- g) Additional types of Sequence encode/decode functions; ~~;~~
- h) Support SMIPv2 MIB modules for the management of talker end system functions (Clause 11) as required by item e in 5.6; and/or
- i) Support YANG modules for the management of talker end system functions (Clause 12) as required by item e in 5.6.

5.11 Listener end system optional behaviors

Change list items g) and h) in 5.11 as follows:

- g) Additional types of Sequence encode/decode functions; ~~and/or~~
- h) At least two instances of Individual recovery functions (7.5), each using the VectorRecoveryAlgorithm (7.4.3.4); ~~;~~
- i) Support SMIPv2 MIB modules for the management of listener end system functions (Clause 11) as required by item f in 5.9; and/or
- j) Support YANG modules for the management of listener end system functions (Clause 12) as required by item f in 5.9.

5.14 Relay system optional behaviors

Change list items g) to j) in 5.14 as follows:

- g) Additional types of Sequence encode/decode functions; ~~and/or~~
- h) Some or all of the functions in 5.12 or 5.13 as both in- and out-facing functions; ~~;~~
- i) At least two instances of Individual recovery functions (7.5), each using the VectorRecoveryAlgorithm (7.4.3.4); ~~;~~
- j) Autoconfiguration (7.11) and the associated managed objects (10.7); ~~;~~
- k) Support SMIPv2 MIB modules for the management of relay systems functions (Clause 11) as required by item g in 5.12; and/or
- l) Support YANG modules for the management of relay systems functions (Clause 12) as required by item g in 5.12.

7. Frame Replication and Elimination for Reliability

7.4 Sequencing function

7.4.1 Sequence generation function

7.4.1.3 SequenceGenerationReset

Change 7.4.1.3 as follows:

The SequenceGenerationReset function is called whenever the BEGIN event occurs (item a in 7.4.1.1) or the value True is written to the ~~frerSeqRevyReset~~[frerSeqGenReset](#) managed object (~~10.4.1.4~~[10.3.1.3](#)). It resets GenSeqNum (7.4.1.2.2) and increments frerCpsSeqGenResets (10.8.2).

```
void SequenceGenerationReset () {  
    GenSeqNum = 0;  
    frerCpsSeqGenResets = frerCpsSeqGenResets + 1;  
}
```

10. Frame Replication and Elimination for Reliability management

10.3 Sequence generation table

10.3.1 frerSeqGenEntry

Insert subclause 10.3.1.3 after 10.3.1.2, as follows:

10.3.1.3 frerSeqGenReset

A Boolean object indicating that the Sequence generation function (7.4.1) is to be reset by calling its corresponding SequenceGenerationReset function (7.4.1.3). Writing the value True to frerSeqGenReset triggers a reset; writing the value False has no effect. When read, frerSeqGenReset always returns the value False.

Insert Clause 11 and Clause 12 after Clause 10 as follows:

11. Management Information Base (MIB)

This clause contains a complete SMIV2 MIB set for all features of this standard.

11.1 Internet Standard Management Framework

The MIBs in this standard are designed to operate in a manner consistent with the principles of the Internet Standard Management Framework, which describes the separation of a data modeling language (for example, SMIV2) from content-specific data models (for example, the LLDP remote systems MIB), and from messages and protocol operations used to manipulate the data (for example, SNMPv3).

For a detailed overview of the documents that describe the current Internet Standard Management Framework, please refer to section 7 of IETF RFC 3410 (2002).

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. MIB objects are generally accessed through the Simple Network Management Protocol (SNMP). Objects in the MIB are defined using the mechanisms defined in the Structure of Management Information (SMI). This clause specifies a MIB module that is compliant to the SMIV2, which is described in IETF RFC 2578 (STD 58), IETF RFC 2579 (STD 58), and IETF RFC 2580 (STD 58).

11.2 Structure of the MIB

The IEEE Std 802.1CB MIB is divided into a number of MIB modules. A summary of the modules contained in this clause is represented in Table 11-1. The general MIB table structures for the MIB modules contained in this clause are illustrated in Figure 11-1.

Table 11-1—Structure of the MIB modules

Module	Subclause	References	Notes
IEEE8021-STREAM-IDENTIFICATION-MIB	11.5.1	Clause 9	MIB model for Stream identification.
IEEE8021-FRER-MIB	11.5.2	Clause 10	MIB model for FRER.

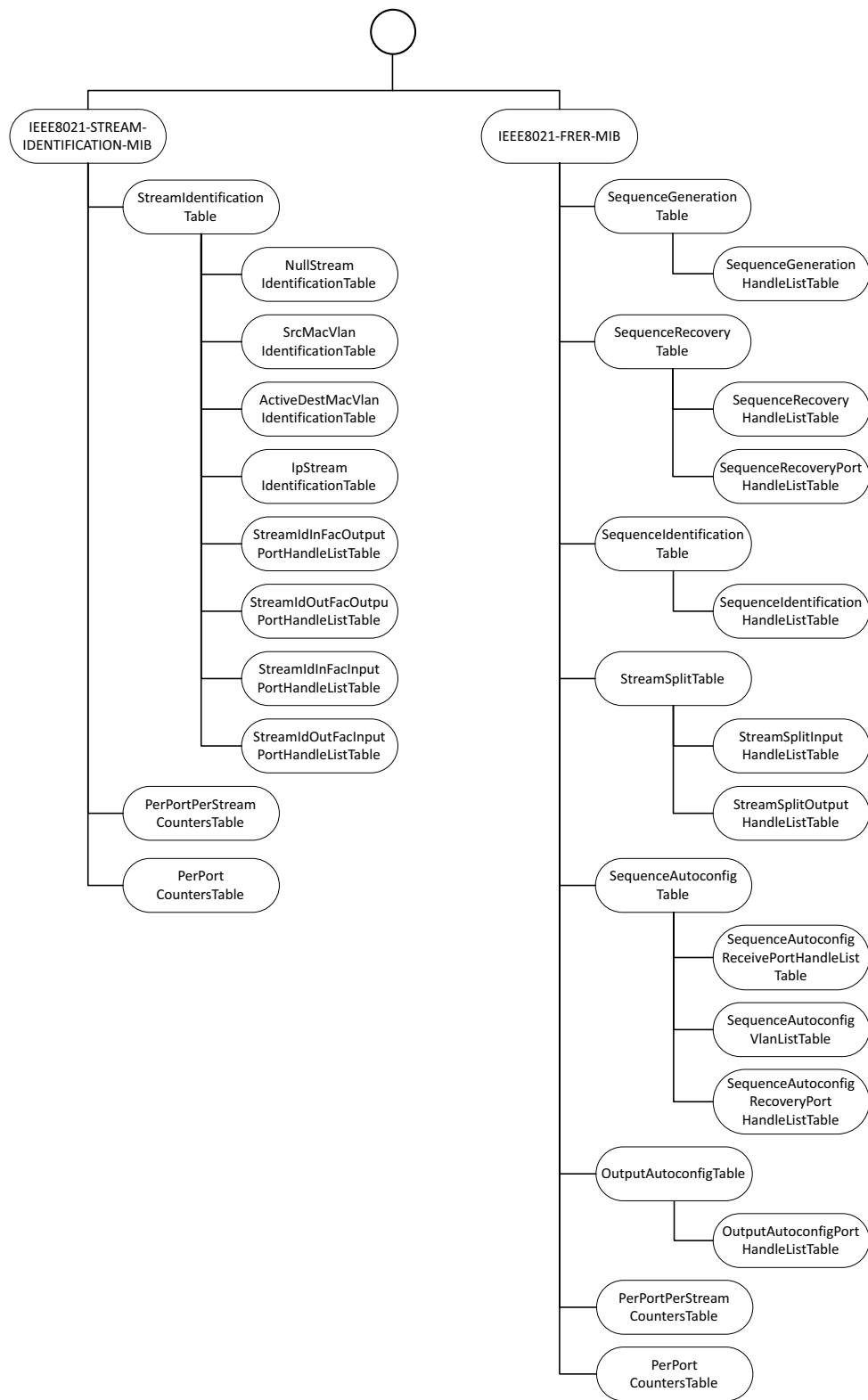


Figure 11-1—MIB modules structure

11.2.1 Structure of the IEEE8021-STREAM-IDENTIFICATION-MIB

The IEEE8021-STREAM-IDENTIFICATION-MIB module is divided into a number of branches (e.g., subtrees). Each subtree is organized as a set of related objects. Where appropriate, the corresponding Clause 9 management reference is also included.

Table 11-2 indicates the structure of the IEEE8021-STREAM-IDENTIFICATION-MIB module.

Table 11-2—IEEE8021-STREAM-IDENTIFICATION-MIB structure and relationship to this standard

Clause 11 MIB table/object	Reference
ieee8021StreamIdStreamIdentificationTable	9.1, 9.1.1
ieee8021StreamIdStreamIdentificationIndex	—
ieee8021StreamIdStreamIdIdentificationType	—
ieee8021StreamIdStreamIdIdentificationTypeOUI	—
ieee8021StreamIdStreamIdIdentificationCustomType	—
ieee8021StreamIdStreamIdIdentificationCustomTypeOUI	—
ieee8021StreamIdStreamIdIdentificationTypeSelect	—
ieee8021StreamIdStreamIdIdentificationTypeSelect	—
ieee8021StreamIdStreamIdInFacOutputPortList	—
ieee8021StreamIdStreamIdOutFacOutputPortList	—
ieee8021StreamIdStreamIdInFacInputPortList	—
ieee8021StreamIdStreamIdOutFacInputPortList	—
ieee8021StreamIdAutoConfigured	—
ieee8021StreamIdLanPathId	—
ieee8021StreamIdStatus	—
ieee8021StreamIdNullStreamIdentificationTable	9.1.2
ieee8021StreamIdCpeNullDownDestMac	—
ieee8021StreamIdCPENullDownTagged	—
ieee8021StreamIdCpeNullDownVlan	—
ieee8021StreamIdSrcMacVlanIdentificationTable	9.1.3
ieee8021StreamIdCpeSmacVlanDownSrcMac	—
ieee8021StreamIdCpeSmacVlanDownTagged	—
ieee8021StreamIdCpeSmacVlanDownVlan	—
ieee8021StreamIdActiveDestMacVlanIdentificationTable	9.1.4
ieee8021StreamIdCpeDmacVlanDownDestMac	—
ieee8021StreamIdCpeDmacVlanDownTagged	—

Table 11-2—IEEE8021-STREAM-IDENTIFICATION-MIB structure and relationship to this standard (*continued*)

Clause 11 MIB table/object	Reference
ieee8021StreamIdCpeDmacVlanDownVlan	—
ieee8021StreamIdCpeDmacVlanDownPriority	—
ieee8021StreamIdCpeDmacVlanUpDestMac	—
ieee8021StreamIdCpeDmacVlanUpTagged	—
ieee8021StreamIdCpeDmacVlanUpVlan	—
ieee8021StreamIdCpeDmacVlanUpPriority	—
ieee8021StreamIdIpStreamIdentificationTable	9.1.5
ieee8021StreamIdCpeIpIdDestMac	—
ieee8021StreamIdCpeIpIdTagged	—
ieee8021StreamIdCpeIpIdVlan	—
ieee8021StreamIdCpeIpIdIpSourceType	—
ieee8021StreamIdCpeIpIdIpSource	—
ieee8021StreamIdCpeIpIdIpDestinationType	—
ieee8021StreamIdCpeIpIdIpDestination	—
ieee8021StreamIdCpeIpIdDscp	—
ieee8021StreamIdCpeIpIdNextProtocol	—
ieee8021StreamIdCpeIpIdSourcePort	—
ieee8021StreamIdCpeIpIdDestinationPort	—
ieee8021StreamIdStreamIdInFacOutputPortHandleListTable	9.1.1.2
ieee8021StreamIdStreamIdInFacOutputPortHandleListIndex	—
ieee8021StreamIdStreamIdInFacOutputPortHandle	—
ieee8021StreamIdStreamIdInFacOutputPortHandleListStatus	—
ieee8021StreamIdStreamIdOutFacOutputPortHandleListTable	9.1.1.3
ieee8021StreamIdStreamIdOutFacOutputPortHandleListIndex	—
ieee8021StreamIdStreamIdOutFacOutputPortHandle	—
ieee8021StreamIdStreamIdOutFacOutputPortHandleListStatus	—
ieee8021StreamIdStreamIdInFacInputPortHandleListTable	9.1.1.2
ieee8021StreamIdStreamIdInFacInputPortHandleListIndex	—
ieee8021StreamIdStreamIdInFacInputPortHandle	—
ieee8021StreamIdStreamIdInFacInputPortHandleListStatus	—
ieee8021StreamIdStreamIdOutFacInputPortHandleListTable	9.1.1.5

Table 11-2—IEEE8021-STREAM-IDENTIFICATION-MIB structure and relationship to this standard (*continued*)

Clause 11 MIB table/object	Reference
ieee8021StreamIdStreamIdOutFacInputPortHandleListIndex	—
ieee8021StreamIdStreamIdOutFacInputPortHandle	—
ieee8021StreamIdStreamIdOutFacInputPortHandleListStatus	—
ieee8021StreamIdPerPortPerStreamCountersTable	9.2
ieee8021StreamIdPerPortPerStreamDirection	—
ieee8021StreamIdPerPortPerStreamInputPackets	—
ieee8021StreamIdPerPortPerStreamOutputPackets	—
ieee8021StreamIdPerPortCountersTable	9.3
ieee8021StreamIdPerPortInputPackets	—
ieee8021StreamIdPerPortOutputPackets	—

11.2.2 Structure of the IEEE8021-FRER-MIB

The IEEE8021-FRER-MIB module is divided into a number of branches (e.g., subtrees). Each subtree is organized as a set of related objects. Where appropriate, the corresponding Clause 9 management reference is also included.

Table 11-3 indicates the structure of the IEEE8021-FRER-MIB module.

Table 11-3—IEEE8021-FRER-MIB structure and relationship to this standard

Clause 11 MIB table/object	Reference
ieee8021FrerSequenceGenerationTable	10.3
ieee8021FrerSequenceGenerationIndex	—
ieee8021FrerSequenceGenerationStreamList	—
ieee8021FrerSequenceGenerationDirection	—
ieee8021FrerSequenceGenerationReset	—
ieee8021FrerSequenceGenerationHandleListTable	10.3.1.1
ieee8021FrerSequenceGenerationHandleListIndex	—
ieee8021FrerSequenceGenerationStreamHandle	—
ieee8021FrerSequenceGenerationHandleListStatus	—
ieee8021FrerSequenceRecoveryTable	10.4
ieee8021FrerSequenceRecoveryIndex	—
ieee8021FrerSequenceRecoveryStreamList	—
ieee8021FrerSequenceRecoveryPortList	—

Table 11-3—IEEE8021-FRER-MIB structure and relationship to this standard (continued)

Clause 11 MIB table/object	Reference
ieee8021FrerSequenceRecoveryDirection	—
ieee8021FrerSequenceRecoveryReset	—
ieee8021FrerSequenceRecoveryAlgorithm	—
ieee8021FrerSequenceRecoveryAlgorithmOUI	—
ieee8021FrerSequenceCustomRecoveryAlgorithm	—
ieee8021FrerSequenceCustomRecoveryAlgorithmOUI	—
ieee8021FrerSequenceRecoveryHistoryLength	—
ieee8021FrerSequenceRecoveryResetMSec	—
ieee8021FrerSequenceRecoveryInvalidSequenceValue	—
ieee8021FrerSequenceRecoveryTakeNoSequence	—
ieee8021FrerSequenceRecoveryIndividualRecovery	—
ieee8021FrerSequenceRecoveryLatentErrorDetection	—
ieee8021FrerSequenceRecoveryLatentErrorDifference	—
ieee8021FrerSequenceRecoveryLatentErrorPeriod	—
ieee8021FrerSequenceRecoveryLatentErrorPaths	—
ieee8021FrerSequenceRecoveryLatentResetPeriod	—
ieee8021FrerSequenceRecoveryStatus	—
ieee8021FrerSequenceRecoveryHandleListTable	10.4.1.1
ieee8021FrerSequenceRecoveryHandleListIndex	—
ieee8021FrerSequenceRecoveryStreamHandle	—
ieee8021FrerSequenceRecoveryHandleListStatus	—
ieee8021FrerSequenceRecoveryPortHandleListTable	10.4.1.2
ieee8021FrerSequenceRecoveryPortHandleListIndex	—
ieee8021FrerSequenceRecoveryPortHandle	—
ieee8021FrerSequenceRecoveryPortHandleListStatus	—
ieee8021FrerSequenceIdentificationTable	10.5
ieee8021FrerSequenceIdentificationEncodePort	—
ieee8021FrerSequenceIdentificationEncodeDirection	—
ieee8021FrerSequenceIdentificationStreamList	—
ieee8021FrerSequenceIdentificationEncodeActive	—
ieee8021FrerSequenceIdentificationEncodeEncapsulationType	—
ieee8021FrerSequenceIdentificationEncodeEncapsulationOUI	—
ieee8021FrerSequenceIdentificationCustomEncodeEncapsulationType	—

Table 11-3—IEEE8021-FRER-MIB structure and relationship to this standard (continued)

Clause 11 MIB table/object	Reference
ieee8021FrerSequenceIdentificationCustomEncodeEncapsulationOUI	—
ieee8021FrerSequenceIdentificationEncodePathIdLanId	—
ieee8021FrerSequenceIdentificationStatus	—
ieee8021FrerSequenceIdentificationHandleListTable	10.5.1.1
ieee8021FrerSequenceIdentificationHandleListIndex	—
ieee8021FrerSequenceIdentificationStreamHandle	—
ieee8021FrerSequenceIdentificationHandleListStatus	—
ieee8021FrerStreamSplitTable	10.6
ieee8021FrerStreamSplitIndex	—
ieee8021FrerStreamSplitPort	—
ieee8021FrerStreamSplitDirection	—
ieee8021FrerStreamSplitInputIdList	—
ieee8021FrerStreamSplitOutputIdList	—
ieee8021FrerStreamSplitInputHandleListTable	10.6.1.3
ieee8021FrerStreamSplitInputHandleListIndex	—
ieee8021FrerStreamSplitInputIdHandle	—
ieee8021FrerStreamSplitInputHandleListStatus	—
ieee8021FrerStreamSplitOutputHandleListTable	10.6.1.4
ieee8021FrerStreamSplitOutputHandleListIndex	—
ieee8021FrerStreamSplitOutputIdHandle	—
ieee8021FrerStreamSplitOutputHandleListStatus	—
ieee8021FrerSequenceAutoconfigTable	10.7, 10.7.1
ieee8021FrerSequenceAutoconfigIndex	—
ieee8021FrerSequenceAutoconfigSequenceEncapsulation	—
ieee8021FrerSequenceAutoconfigSequenceEncapsulationOUI	—
ieee8021FrerSequenceAutoconfigCustomSequenceEncapsulation	—
ieee8021FrerSequenceAutoconfigCustomSequenceEncOUI	—
ieee8021FrerSequenceAutoconfigReceivePortList	—
ieee8021FrerSequenceAutoconfigTagged	—
ieee8021FrerSequenceAutoconfigVlanList	—
ieee8021FrerSequenceAutoconfigRecoveryPortList	—
ieee8021FrerSequenceAutoconfigDestructMSec	—

Table 11-3—IEEE8021-FRER-MIB structure and relationship to this standard (continued)

Clause 11 MIB table/object	Reference
ieee8021FrerSequenceAutoconfigResetMSec	—
ieee8021FrerSequenceAutoconfigAlgorithm	—
ieee8021FrerSequenceAutoconfigAlgorithmOUI	—
ieee8021FrerSequenceAutoconfigCustomAlgorithm	—
ieee8021FrerSequenceAutoconfigCustomAlgorithmOUI	—
ieee8021FrerSequenceAutoconfigHistoryLength	—
ieee8021FrerSequenceAutoconfigCreateIndividual	—
ieee8021FrerSequenceAutoconfigCreateRecovery	—
ieee8021FrerSequenceAutoconfigLatentErrorDetection	—
ieee8021FrerSequenceAutoconfigLatentErrorDifference	—
ieee8021FrerSequenceAutoconfigLatentErrorPeriod	—
ieee8021FrerSequenceAutoconfigLatentErrorResetPeriod	—
ieee8021FrerSequenceAutoconfigStatus	—
ieee8021FrerSequenceAutoconfigReceivePortHandleListTable	10.7.1.1.2
ieee8021FrerSequenceAutoconfigReceivePortHandleListIndex	—
ieee8021FrerSequenceAutoconfigReceivePortHandle	—
ieee8021FrerSequenceAutoconfigReceivePortHandleListStatus	—
ieee8021FrerSequenceAutoconfigVlanListTable	10.7.1.1.4
ieee8021FrerSequenceAutoconfigVlanListIndex	—
ieee8021FrerSequenceAutoconfigVlan	—
ieee8021FrerSequenceAutoconfigVlanListStatus	—
ieee8021FrerSequenceAutoconfigRecoveryPortHandleListTable	10.7.1.1.5
ieee8021FrerSequenceAutoconfigRecoveryPortHandleListIndex	—
ieee8021FrerSequenceAutoconfigRecoveryPortHandle	—
ieee8021FrerSequenceAutoconfigRecoveryPortHandleListStatus	—
ieee8021FrerOutputAutoconfigTable	10.7, 10.7.2
ieee8021FrerOutputAutoconfigIndex	—
ieee8021FrerOutputAutoconfigPortList	—
ieee8021FrerOutputAutoconfigEncapsulation	—
ieee8021FrerOutputAutoconfigEncapsulationOUI	—
ieee8021FrerOutputAutoconfigCustomEncapsulation	—
ieee8021FrerOutputAutoconfigCustomEncapsulationOUI	—

Table 11-3—IEEE8021-FRER-MIB structure and relationship to this standard (continued)

Clause 11 MIB table/object	Reference
ieee8021FrerOutputAutoconfigLanPathId	—
ieee8021FrerOutputAutoconfigStatus	—
ieee8021FrerOutputAutoconfigPortHandleListTable	10.7.2.1.1
ieee8021FrerOutputAutoconfigPortHandleListIndex	—
ieee8021FrerOutputAutoconfigPortHandle	—
ieee8021FrerOutputAutoconfigPortHandleListStatus	—
ieee8021FrerPerPortPerStreamCountersTable	10.8
ieee8021FrerPerPortPerStreamDirection	—
ieee8021FrerPerPortPerStreamSeqGenResets	—
ieee8021FrerPerPortPerStreamSeqRecoveryOutOfOrderPackets	—
ieee8021FrerPerPortPerStreamSeqRecoveryRoguePackets	—
ieee8021FrerPerPortPerStreamSeqRecoveryPassedPackets	—
ieee8021FrerPerPortPerStreamSeqRecoveryDiscardedPackets	—
ieee8021FrerPerPortPerStreamSeqRecoveryLostPackets	—
ieee8021FrerPerPortPerStreamSeqRecoveryTaglessPackets	—
ieee8021FrerPerPortPerStreamSeqRecoveryResets	—
ieee8021FrerPerPortPerStreamSeqRecoveryLatentErrorResets	—
ieee8021FrerPerPortPerStreamSeqEncErroredPackets	—
ieee8021FrerPerPortCountersTable	10.9
ieee8021FrerPerPortSeqRecoveryPassedPackets	—
ieee8021FrerPerPortfrerCpSeqRecoveryDiscardPackets	—
ieee8021FrerPerPortfrerCpSeqEncErroredPackets	—

11.3 Relationship to other MIBs

In order to facilitate interoperable management of the features defined in this standard by remote means, 11.5 contains a complete set of SMIv2 MIB modules. This subclause describes how the MIB modules defined in this standard are related to the MIB modules that are imported.

11.3.1 Relationship of the IEEE8021-STREAM-IDENTIFICATION-MIB to other MIBs

The IEEE8021-STREAM-IDENTIFICATION-MIB identifies the interfaces for the counters provided by this standard by an ifIndex and therefore imports from the IF-MIB.

It also imports items from the SNMPv2-SMI, SNMPv2-TC, INET-ADDRESS-MIB, and IEEE8021-TC-MIB and requires SNMPv2-CONF for conformance.

11.3.2 Relationship of the IEEE8021-FRER-MIB to other MIBs

The IEEE8021-FRER-MIB identifies the interfaces for the counters provided by this standard by an ifIndex and therefore imports from the IF-MIB.

It also imports items from the IEEE8021-STREAM-IDENTIFICATION-MIB, SNMPv2-SMI, SNMPv2-TC, and IEEE8021-TC-MIB and requires SNMPv2-CONF for conformance.

11.4 Security considerations

SNMP versions prior to SNMPv3 did not include adequate security. Even if the network itself is secure (for example, by using IPsec), there is no control about who on the secure network is allowed to access and GET/SET (read/change/create/delete) the objects in these MIB modules.

It is recommended that implementers consider the security features as provided by the SNMPv3 framework (see IETF RFC 3410 (2002), section 8), including full support for the SNMPv3 cryptographic mechanisms (for authentication and privacy).

Further, deployment of SNMP versions prior to SNMPv3 is not recommended. Instead, it is recommended to deploy SNMPv3 and to enable cryptographic security. It is then a customer/operator responsibility to ensure that the SNMP entity giving access to an instance of these MIB modules is properly configured to give access to the objects only to those principals (users) that have legitimate rights to indeed GET or SET (change/create/delete) them.

11.4.1 Security considerations of the IEEE8021-STREAM-IDENTIFICATION-MIB

There are a number of management objects defined in the IEEE8021-STREAM-IDENTIFICATION-MIB module that have a MAX-ACCESS clause of read-write and/or read-create. Such objects may be considered sensitive or vulnerable in some network environments. The support for SET operations in a nonsecure environment without proper protection can have a negative effect on network operations.

Some of the readable objects in this MIB module (i.e., objects with a MAX-ACCESS other than not-accessible) may be considered sensitive or vulnerable in some network environments. It is thus important to control all types of access (including GET and/or NOTIFY) to these objects and possibly to even encrypt the values of these objects when sending them over the network via SNMP.

11.4.2 Security considerations of the IEEE8021-FRER-MIB

There are a number of management objects defined in the IEEE8021-STREAM-IDENTIFICATION-MIB module that have a MAX-ACCESS clause of read-write and/or read-create. Such objects may be considered sensitive or vulnerable in some network environments. The support for SET operations in a nonsecure environment without proper protection can have a negative effect on network operations.

Some of the readable objects in this MIB module (i.e., objects with a MAX-ACCESS other than not-accessible) may be considered sensitive or vulnerable in some network environments. It is thus important to control all types of access (including GET and/or NOTIFY) to these objects and possibly to even encrypt the values of these objects when sending them over the network via SNMP.

11.5 MIB modules^{9, 10}

In this subclause, certain terms (e.g., “SHOULD” and “MUST”) denote requirements terminology according to the usage specified in IETF RFC 2119, as is customary for IETF MIB module definitions. In the MIB modules definitions below, if any discrepancy between the DESCRIPTION text and the corresponding definition in any other part of this standard occur, the definitions outside this subclause take precedence.

11.5.1 Definitions for the IEEE8021-STREAM-IDENTIFICATION-MIB

```
IEEE8021-STREAM-IDENTIFICATION-MIB DEFINITIONS ::= BEGIN

-- =====
-- MIB for support of Stream identification of IEEE 802.1CB
-- Frame Replication and Elimination for Reliability
-- =====

IMPORTS
    OBJECT-GROUP,
    MODULE-COMPLIANCE
        FROM SNMPv2-CONF
    MODULE-IDENTITY,
    OBJECT-TYPE,
    OBJECT-IDENTITY,
    Counter64,
    Unsigned32,
    Integer32
        FROM SNMPv2-SMI
    TEXTUAL-CONVENTION,
    TruthValue,
    RowStatus,
    MacAddress,
    AutonomousType,
    VariablePointer
        FROM SNMPv2-TC
    ifIndex
        FROM IF-MIB
    InetAddressType,
    InetAddress,
    InetPortNumber
        FROM INET-ADDRESS-MIB
    IEEE8021PriorityValue,
    ieee802dot1mibs
        FROM IEEE8021-TC-MIB
    ;

ieee8021StreamIdMib MODULE-IDENTITY
    LAST-UPDATED "202112080000Z" -- December 8, 2021
    ORGANIZATION "IEEE 802.1 Working Group"
    CONTACT-INFO
        "WG-URL: http://ieee802.org/1/
        WG-EMail: stds-802-1-l@ieee.org

        Contact: IEEE 802.1 Working Group Chair
        Postal: C/O IEEE 802.1 Working Group
                IEEE Standards Association
                445 Hoes Lane
                Piscataway, NJ 08854
                USA

        E-mail: stds-802-1-chairs@ieee.org"

    DESCRIPTION
```

⁹ Copyright release for MIBs: Users of this standard may freely reproduce the MIBs contained in this subclause so that they can be used for their intended purpose.

¹⁰ An ASCII version of the MIB modules are attached to the PDF version of this standard, and can be obtained by Web browser from the IEEE 802.1 Website at <https://1.ieee802.org/mib-modules/>.

"The Management Information Base module for IEEE 802.1CB Stream identification. Unless otherwise indicated, the references in this MIB module are to IEEE Std 802.1CB-2017 as amended by IEEE Std 802.1CBcv-2021. Copyright (C) IEEE (2021). This version of this MIB module is part of IEEE Std 802.1CB-2021; see the standard itself for full legal notices."

REVISION "202112080000Z" -- December 8, 2021

DESCRIPTION

"Initial revision published as part of IEEE Std 802.1CBcv-2021."

::= { ieee802dot1mibs 34 }

-- =====
-- Textual Conventions
-- =====

Ieee8021CBStreamIdentificationType ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"An enumerated value indicating the method used to identify packets belonging to the Stream. The values 0-255 are reserved for use by IEEE 802."

REFERENCE "9.1.1.6 and Table 9-1"

SYNTAX INTEGER {
 reserved(0),
 nullStreamIdentification(1),
 srcMacVlanStreamIdentification(2),
 activeDstMacVlanStreamIdentification(3),
 ipStreamStreamIdentification(4),
 nonIEEESpecified(256)
}

Ieee8021CBTaggedType ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"An enumerated value indicating whether a packet in an EISS indication primitive to a Stream identification function is permitted to have a VLAN tag."

REFERENCE "9.1.2.2, 9.1.3.2, 9.1.4.2, 9.1.4.6, 9.1.5.2, and 10.7.1.1.3"

SYNTAX INTEGER {
 tagged(1),
 priority(2),
 all(3)
}

Ieee8021CBVlanIdentifier ::= TEXTUAL-CONVENTION

DISPLAY-HINT "d"

STATUS current

DESCRIPTION

"Specifies the vlan_identifier. A value of 0 indicates a special treatment, depending on the use of Ieee8021CBVlanIdentifier."

SYNTAX Integer32 (0|1..4094)

Ieee8021CBIpDscpType ::= TEXTUAL-CONVENTION

DISPLAY-HINT "d"

STATUS current

DESCRIPTION

"The code point used for discriminating a traffic Stream."

SYNTAX Integer32 (-1 | 0..63)

Ieee8021CBIdNextProtocolType ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"An enumerated value indicating an IP next protocol."

SYNTAX INTEGER {
 none(1),
 udp(2),
 tcp(3),
 sctp(4)
}

```

    }

Ieee8021CBLanPathIdType ::= TEXTUAL-CONVENTION
    DISPLAY-HINT "d"
    STATUS current
    DESCRIPTION
        "An integer specifying a path or LAN. If and only if a packet
        matches an entry in the Sequence identification table that
        specifies HSR or PRP in its frerSeqEncEncapsType object,
        tsnStreamIdLanPathId specifies the LanId or PathId value that
        must be matched for this tsnStreamIdEntry to apply. A value
        of -1 indicates that the LanId or PathId are to be ignored."
    REFERENCE "10.22"
    SYNTAX Integer32 (-1 | 0..15)

-- =====
-- subtrees in the Stream identification MIB
-- =====

ieee8021StreamIdNotifications
    OBJECT IDENTIFIER ::= { ieee8021StreamIdMib 0 }

ieee8021StreamIdObjects
    OBJECT IDENTIFIER ::= { ieee8021StreamIdMib 1 }

ieee8021StreamIdConformance
    OBJECT IDENTIFIER ::= { ieee8021StreamIdMib 2 }

ieee8021StreamIdStreamIdentification
    OBJECT IDENTIFIER ::= { ieee8021StreamIdObjects 1 }

ieee8021StreamIdStreamIdInFacOutputPortHandleList
    OBJECT IDENTIFIER ::= { ieee8021StreamIdObjects 2 }

ieee8021StreamIdStreamIdOutFacOutputPortHandleList
    OBJECT IDENTIFIER ::= { ieee8021StreamIdObjects 3 }

ieee8021StreamIdStreamIdInFacInputPortHandleList
    OBJECT IDENTIFIER ::= { ieee8021StreamIdObjects 4 }

ieee8021StreamIdStreamIdOutFacInputPortHandleList
    OBJECT IDENTIFIER ::= { ieee8021StreamIdObjects 5 }

ieee8021StreamIdPerPortPerStreamCounters
    OBJECT IDENTIFIER ::= { ieee8021StreamIdObjects 6 }

ieee8021StreamIdPerPortCounters
    OBJECT IDENTIFIER ::= { ieee8021StreamIdObjects 7 }

-- =====
-- the ieee8021StreamIdStreamIdentification table
-- =====

-- =====
-- the ieee8021StreamIdStreamIdentificationTypes
-- =====
ieee8021StreamIdStreamIdentificationTypes
    OBJECT IDENTIFIER ::= { ieee8021StreamIdStreamIdentification 1 }

ieee8021StreamIdNullStream OBJECT-IDENTITY
    STATUS current
    DESCRIPTION
        "The Stream identification type for the Null Stream
        identification."
    ::= { ieee8021StreamIdStreamIdentificationTypes 1 }

ieee8021StreamIdSrcMacVlan OBJECT-IDENTITY
    STATUS current
    DESCRIPTION
        "The Stream identification type for the Source MAC and VLAN
        Stream identification."
    ::= { ieee8021StreamIdStreamIdentificationTypes 2 }

```

```
ieee8021StreamIdActiveDestMacVlan OBJECT-IDENTITY
  STATUS current
  DESCRIPTION
    "The Stream identification type for the Active Destination
    and VLAN Stream identification."
  ::= { ieee8021StreamIdStreamIdentificationTypes 3 }

ieee8021StreamIdIpStream OBJECT-IDENTITY
  STATUS current
  DESCRIPTION
    "The Stream identification type for the IP Stream
    identification."
  ::= { ieee8021StreamIdStreamIdentificationTypes 4 }

-- =====
-- the ieee8021StreamIdStreamIdentification
-- =====

ieee8021StreamIdStreamIdentificationTable OBJECT-TYPE
  SYNTAX      SEQUENCE OF Ieee8021StreamIdStreamIdentificationEntry
  MAX-ACCESS  not-accessible
  STATUS      current
  DESCRIPTION
    "A table containing a set of tsnStreamIdEntry objects each
    relating to a single Stream, specifying the points in the
    system where Stream identification functions are to be
    instantiated."
  REFERENCE   "9.1"
  ::= { ieee8021StreamIdStreamIdentification 2 }

ieee8021StreamIdStreamIdentificationEntry OBJECT-TYPE
  SYNTAX      Ieee8021StreamIdStreamIdentificationEntry
  MAX-ACCESS  not-accessible
  STATUS      current
  DESCRIPTION
    "A set of managed objects, all applying to the Stream specified
    by tsnStreamIdHandle, and all using the same Stream
    identification types and parameters."
  REFERENCE   "9.1.1"
  INDEX       { ieee8021StreamIdStreamIdentificationIndex }
  ::= { ieee8021StreamIdStreamIdentificationTable 1 }

Ieee8021StreamIdStreamIdentificationEntry ::=
  SEQUENCE {
    ieee8021StreamIdStreamIdentificationIndex
      Unsigned32,
    ieee8021StreamIdStreamIdIdentificationType
      Ieee8021CBStreamIdentificationType,
    ieee8021StreamIdStreamIdIdentificationTypeOUI
      OCTET STRING,
    ieee8021StreamIdStreamIdIdentificationCustomType
      Integer32,
    ieee8021StreamIdStreamIdIdentificationCustomTypeOUI
      OCTET STRING,
    ieee8021StreamIdStreamIdIdentificationTypeSelect
      AutonomousType,
    ieee8021StreamIdStreamIdHandle
      Unsigned32,
    ieee8021StreamIdStreamIdInFacOutputPortList
      AutonomousType,
    ieee8021StreamIdStreamIdOutFacOutputPortList
      AutonomousType,
    ieee8021StreamIdStreamIdInFacInputPortList
      AutonomousType,
    ieee8021StreamIdStreamIdOutFacInputPortList
      AutonomousType,
    ieee8021StreamIdAutoConfigured
      TruthValue,
    ieee8021StreamIdLanPathId
      Ieee8021CBLanPathIdType,
    ieee8021StreamIdStatus
```

```

        RowStatus
    }

ieee8021StreamIdStreamIdentificationIndex OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Index for the Stream Identity table."
    ::= { ieee8021StreamIdStreamIdentificationEntry 1 }

ieee8021StreamIdStreamIdIdentificationType OBJECT-TYPE
    SYNTAX      Ieee8021CBStreamIdentificationType
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "This managed object is an enumerated value indicating the
        method used to identify packets belonging to the Stream.
        If the value used is nonIEEESpecified(256), the managed objects
        ieee8021StreamIdStreamIdIdentificationCustomType and
        ieee8021StreamIdStreamIdIdentificationCustomTypeOUI are used to
        specify OUI/CID and the Stream identification method defined by
        the entity owning the OUI/CID."
    REFERENCE   "9.1.1.6"
    DEFVAL      { nullStreamIdentification }
    ::= { ieee8021StreamIdStreamIdentificationEntry 2 }

ieee8021StreamIdStreamIdIdentificationTypeOUI OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE (3))
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This managed object specifies the OUI/CID used together with
        the Stream identification method specified in
        ieee8021StreamIdStreamIdIdentificationType.
        It is used if and only if the value for
        ieee8021StreamIdStreamIdIdentificationType is in the range of
        0-255. In this case it always takes the value 00-80-C2."
    REFERENCE   "9.1.1.6"
    ::= { ieee8021StreamIdStreamIdentificationEntry 3 }

ieee8021StreamIdStreamIdIdentificationCustomType OBJECT-TYPE
    SYNTAX      Integer32 (256..2147483647)
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "This managed object is an enumerated value indicating the
        method used to identify packets belonging to the Stream. It is
        used if and only if the value for
        ieee8021StreamIdStreamIdIdentificationType is 256."
    REFERENCE   "9.1.1.6"
    ::= { ieee8021StreamIdStreamIdentificationEntry 4 }

ieee8021StreamIdStreamIdIdentificationCustomTypeOUI OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE (3))
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "This managed object specifies the OUI/CID used together with
        the Stream identification method specified in
        ieee8021StreamIdStreamIdIdentificationType. It is used if and
        only if the value for
        ieee8021StreamIdStreamIdIdentificationType is 256."
    REFERENCE   "9.1.1.6"
    ::= { ieee8021StreamIdStreamIdentificationEntry 5 }

ieee8021StreamIdStreamIdIdentificationTypeSelect OBJECT-TYPE
    SYNTAX      AutonomousType
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "An indication of the type of Stream identification method that

```

```
is used.

If this value is
'ieee8021StreamIdNullStream ieee8021StreamIdObjects 1' then
an entry exists in the
ieee8021StreamIdStreamIdentificationTable
which corresponds to the Null Stream identification.

If this value is
'ieee8021StreamIdSrcMacVlan ieee8021StreamIdObjects 2' then
an entry exists in the
ieee8021StreamIdStreamIdentificationTable
which corresponds to the Source MAC and VLAN Stream
identification.

If this value is
'ieee8021StreamIdActiveDestMacVlan ieee8021StreamIdObjects 3'
then an entry exists in the
ieee8021StreamIdStreamIdentificationTable
which corresponds to the Active Destination MAC and VLAN Stream
identification.

If this value is
'ieee8021StreamIdIpStream ieee8021StreamIdObjects 4' then
an entry exists in the
ieee8021StreamIdStreamIdentificationTable
which corresponds to the IP Stream identification."
::= { ieee8021StreamIdStreamIdentificationEntry 6 }

ieee8021StreamIdStreamIdHandle OBJECT-TYPE
SYNTAX      Unsigned32
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "The objects in a given entry of the Stream identity table are
    used to control packets whose stream handle subparameter is
    equal to the entry's tsnStreamIdHandle object."
REFERENCE   "9.1.1.1"
::= { ieee8021StreamIdStreamIdentificationEntry 7 }

ieee8021StreamIdStreamIdInFacOutputPortList OBJECT-TYPE
SYNTAX      AutonomousType
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The list of ports on which an in-facing Stream identification
    function using this identification method is to be placed for
    this Stream in the output (towards the system forwarding
    function) direction.
    For each port in this list, there exists an entry in the
    ieee8021StreamIdStreamIdInFacOutputPortHandleListTable."
REFERENCE   "9.1.1.2"
::= { ieee8021StreamIdStreamIdentificationEntry 8 }

ieee8021StreamIdStreamIdOutFacOutputPortList OBJECT-TYPE
SYNTAX      AutonomousType
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The list of ports on which an out-facing Stream identification
    function using this identification method is to be placed for
    this Stream in the output (towards the physical interface)
    direction.
    For each port in this list, there exists an entry in the
    ieee8021StreamIdStreamIdOutFacOutputPortHandleListTable."
REFERENCE   "9.1.1.3"
::= { ieee8021StreamIdStreamIdentificationEntry 9 }

ieee8021StreamIdStreamIdInFacInputPortList OBJECT-TYPE
SYNTAX      AutonomousType
MAX-ACCESS  read-only
STATUS      current
```

```

DESCRIPTION
    "The list of ports on which an in-facing Stream identification
    function using this identification method is to be placed for
    this Stream in the input (coming from the system forwarding
    function) direction.
    For each port in this list, there exists an entry in the
    ieee8021StreamIdStreamIdInFacInputPortHandleListTable."
REFERENCE    "9.1.1.4"
::= { ieee8021StreamIdStreamIdentificationEntry 10 }

ieee8021StreamIdStreamIdOutFacInputPortList OBJECT-TYPE
SYNTAX      AutonomousType
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The list of ports on which an out-facing Stream identification
    function using this identification method is to be placed for
    this Stream in the input (coming from the physical interface)
    direction.
    For each port in this list, there exists an entry in the
    ieee8021StreamIdStreamIdOutFacInputPortHandleListTable."
REFERENCE    "9.1.1.5"
::= { ieee8021StreamIdStreamIdentificationEntry 11 }

ieee8021StreamIdAutoConfigured OBJECT-TYPE
SYNTAX      TruthValue
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "A read-only Boolean value, supplied by the system, specifying
    whether this entry was created explicitly (False) or via the
    Sequence autoconfiguration table (True)."
REFERENCE    "10.2.1"
::= { ieee8021StreamIdStreamIdentificationEntry 12 }

ieee8021StreamIdLanPathId OBJECT-TYPE
SYNTAX      Ieee8021CBLanPathIdType
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "An integer specifying a path or LAN. If and only if a packet
    matches an entry in the Sequence identification table that
    specifies HSR or PRP in its frerSeqEncEncapsType object,
    tsnStreamIdLanPathId specifies the LanId or PathId value that
    must be matched for this tsnStreamIdEntry to apply. A value
    of -1 indicates that the LanId or PathId are to be ignored."
REFERENCE    "10.2.2"
::= { ieee8021StreamIdStreamIdentificationEntry 13 }

ieee8021StreamIdStatus OBJECT-TYPE
SYNTAX      RowStatus
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "Row-Status for the Stream Identity table."
::= { ieee8021StreamIdStreamIdentificationEntry 14 }

-- =====
-- the ieee8021StreamIdNullStreamIdentificationTable
-- =====

ieee8021StreamIdNullStreamIdentificationTable OBJECT-TYPE
SYNTAX      SEQUENCE OF Ieee8021StreamIdNullStreamIdentificationEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "A table containing a set of controlling parameters for the
    Null Stream identification method."
REFERENCE    "9.1.2"
::= { ieee8021StreamIdStreamIdentification 3 }

ieee8021StreamIdNullStreamIdentificationEntry OBJECT-TYPE

```

```

SYNTAX      Ieee8021StreamIdNullStreamIdentificationEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "A set of managed objects that serve as the Stream
    identification parameters when using the Null Stream
    identification method."
REFERENCE    "9.1.2"
INDEX       { ieee8021StreamIdStreamIdentificationIndex }
::= { ieee8021StreamIdNullStreamIdentificationTable 1 }

Ieee8021StreamIdNullStreamIdentificationEntry ::=
SEQUENCE {
    ieee8021StreamIdCpeNullDownDestMac
        MacAddress,
    ieee8021StreamIdCPENullDownTagged
        Ieee8021CBTaggedType,
    ieee8021StreamIdCpeNullDownVlan
        Ieee8021CBVlanIdentifier
}

ieee8021StreamIdCpeNullDownDestMac OBJECT-TYPE
SYNTAX      MacAddress
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Specifies the destination address that identifies a packet in
    an EISS indication primitive, to the Null Stream identification
    function."
REFERENCE    "9.1.2.1"
::= { ieee8021StreamIdNullStreamIdentificationEntry 1 }

ieee8021StreamIdCPENullDownTagged OBJECT-TYPE
SYNTAX      Ieee8021CBTaggedType
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "An enumerated value indicating whether a packet in an EISS
    indication primitive to the Null Stream identification function
    is permitted to have a VLAN tag."
REFERENCE    "9.1.2.2"
::= { ieee8021StreamIdNullStreamIdentificationEntry 2 }

ieee8021StreamIdCpeNullDownVlan OBJECT-TYPE
SYNTAX      Ieee8021CBVlanIdentifier
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Specifies the vlan identifier parameter that identifies a
    packet in an EISS indication primitive to the Null Stream
    identification function. A value of 0 indicates that the
    vlan_identifier parameter is ignored on EISS indication
    primitives."
REFERENCE    "9.1.2.3"
::= { ieee8021StreamIdNullStreamIdentificationEntry 3 }

-- =====
-- the ieee8021StreamIdSrcMacVlanIdentificationTable
-- =====

ieee8021StreamIdSrcMacVlanIdentificationTable OBJECT-TYPE
SYNTAX      SEQUENCE OF Ieee8021StreamIdSrcMacVlanIdentificationEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "A table containing a set of controlling parameters for the
    Source MAC and VLAN Stream identification method."
REFERENCE    "9.1.3"
::= { ieee8021StreamIdStreamIdentification 4 }

ieee8021StreamIdSrcMacVlanIdentificationEntry OBJECT-TYPE
SYNTAX      Ieee8021StreamIdSrcMacVlanIdentificationEntry

```

```

MAX-ACCESS    not-accessible
STATUS        current
DESCRIPTION
    "A set of managed objects that serve as the Stream
    identification parameters when using the Source MAC and VLAN
    Stream identification method."
REFERENCE     "9.1.3"
INDEX { ieee8021StreamIdStreamIdentificationIndex }
::= { ieee8021StreamIdSrcMacVlanIdentificationTable 1 }

Ieee8021StreamIdSrcMacVlanIdentificationEntry ::=
    SEQUENCE {
        ieee8021StreamIdCpeSmacVlanDownSrcMac
            MacAddress,
        ieee8021StreamIdCpeSmacVlanDownTagged
            Ieee8021CBTaggedType,
        ieee8021StreamIdCpeSmacVlanDownVlan
            Ieee8021CBVlanIdentifier
    }

ieee8021StreamIdCpeSmacVlanDownSrcMac OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Specifies the source address that identifies a packet in an
        EISS indication primitive, to the Source MAC and VLAN Stream
        identification function."
    REFERENCE   "9.1.3.1"
    ::= { ieee8021StreamIdSrcMacVlanIdentificationEntry 1 }

ieee8021StreamIdCpeSmacVlanDownTagged OBJECT-TYPE
    SYNTAX      Ieee8021CBTaggedType
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "An enumerated value indicating whether a packet in an EISS
        indication primitive to the Source MAC and VLAN Stream
        identification function is permitted to have a VLAN tag."
    REFERENCE   "9.1.3.2"
    ::= { ieee8021StreamIdSrcMacVlanIdentificationEntry 2 }

ieee8021StreamIdCpeSmacVlanDownVlan OBJECT-TYPE
    SYNTAX      Ieee8021CBVlanIdentifier
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Specifies the vlan identifier parameter that identifies a
        packet in an EISS indication primitive to the Source MAC and
        VLAN Stream identification function. A value of 0 indicates
        that the vlan identifier parameter is ignored on EISS
        indications."
    REFERENCE   "9.1.3.3"
    ::= { ieee8021StreamIdSrcMacVlanIdentificationEntry 3 }

-- =====
-- the ieee8021StreamIdActiveDestMacVlanIdentificationTable
-- =====

ieee8021StreamIdActiveDestMacVlanIdentificationTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Ieee8021StreamIdActiveDestMacVlanIdentificationEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A table containing a set of controlling parameters for the
        Active Destination MAC and VLAN Stream identification method."
    REFERENCE   "9.1.4"
    ::= { ieee8021StreamIdStreamIdentification 5 }

ieee8021StreamIdActiveDestMacVlanIdentificationEntry OBJECT-TYPE
    SYNTAX      Ieee8021StreamIdActiveDestMacVlanIdentificationEntry
    MAX-ACCESS  not-accessible

```

```

STATUS      current
DESCRIPTION
    "A set of managed objects that serve as the Stream
    identification parameters when using the Active Destination
    MAC and VLAN Stream identification method."
REFERENCE   "9.1.4"
INDEX      { ieee8021StreamIdStreamIdentificationIndex }
::= { ieee8021StreamIdActiveDestMacVlanIdentificationTable 1 }

Ieee8021StreamIdActiveDestMacVlanIdentificationEntry ::=
SEQUENCE {
    ieee8021StreamIdCpeDmacVlanDownDestMac
        MacAddress,
    ieee8021StreamIdCpeDmacVlanDownTagged
        Ieee8021CBTaggedType,
    ieee8021StreamIdCpeDmacVlanDownVlan
        Ieee8021CBVlanIdentifier,
    ieee8021StreamIdCpeDmacVlanDownPriority
        IEEE8021PriorityValue,
    ieee8021StreamIdCpeDmacVlanUpDestMac
        MacAddress,
    ieee8021StreamIdCpeDmacVlanUpTagged
        Ieee8021CBTaggedType,
    ieee8021StreamIdCpeDmacVlanUpVlan
        Ieee8021CBVlanIdentifier,
    ieee8021StreamIdCpeDmacVlanUpPriority
        IEEE8021PriorityValue
}

ieee8021StreamIdCpeDmacVlanDownDestMac OBJECT-TYPE
SYNTAX      MacAddress
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Specifies the destination_address parameter to use in the
    EISS request primitive for output packets sent to lower layers
    by the Active Destination MAC and VLAN Stream identification
    function, and the destination_address that identifies an input
    packet in an EISS indication primitive to the Active
    Destination MAC and VLAN Stream identification function."
REFERENCE   "9.1.4.1"
::= { ieee8021StreamIdActiveDestMacVlanIdentificationEntry 1 }

ieee8021StreamIdCpeDmacVlanDownTagged OBJECT-TYPE
SYNTAX      Ieee8021CBTaggedType
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "An enumerated value indicating whether a packet in an EISS
    indication or request primitive between the Active Destination
    MAC and VLAN Stream identification function and the lower
    layers is to have a VLAN tag.
    This variable is not used in an FRER C-component."
REFERENCE   "9.1.4.2"
::= { ieee8021StreamIdActiveDestMacVlanIdentificationEntry 2 }

ieee8021StreamIdCpeDmacVlanDownVlan OBJECT-TYPE
SYNTAX      Ieee8021CBVlanIdentifier
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Specifies the vlan_identifier parameter to use in the EISS
    request primitive for output packets sent to lower layers by
    the Active Destination MAC and VLAN Stream identification
    function, and the vlan_identifier that identifies an input
    packet in an EISS indication primitive to the Active
    Destination MAC and VLAN Stream identification function.
    A value of 0 indicates that the vlan_identifier parameter is
    ignored on EISS indication primitives."
REFERENCE   "9.1.4.3"
::= { ieee8021StreamIdActiveDestMacVlanIdentificationEntry 3 }

```

```
ieee8021StreamIdCpeDmacVlanDownPriority OBJECT-TYPE
    SYNTAX      IEEE8021PriorityValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Specifies the priority parameter to use in the EISS request
        primitive for output packets sent to lower layers by the Active
        Destination MAC and VLAN Stream identification function for all
        packets in a particular Stream."
    REFERENCE   "9.1.4.4"
    ::= { ieee8021StreamIdActiveDestMacVlanIdentificationEntry 4 }

ieee8021StreamIdCpeDmacVlanUpDestMac OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Specifies the destination address parameter to use in the EISS
        indication primitive for input packets offered to upper layers
        by the Active Destination MAC and VLAN Stream identification
        layer. This address replaces the address that was used to
        identify the packet (tsnCpeDmacVlanDownDestMac)."
    REFERENCE   "9.1.4.5"
    ::= { ieee8021StreamIdActiveDestMacVlanIdentificationEntry 5 }

ieee8021StreamIdCpeDmacVlanUpTagged OBJECT-TYPE
    SYNTAX      Ieee8021CBTaggedType
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "An enumerated value indicating whether a packet in an EISS
        indication or request primitive between the Active Destination
        MAC and VLAN Stream identification function and the upper
        layers is to have a VLAN tag.
        This variable is used only by an end system and not by a
        relay system."
    REFERENCE   "9.1.4.6"
    ::= { ieee8021StreamIdActiveDestMacVlanIdentificationEntry 6 }

ieee8021StreamIdCpeDmacVlanUpVlan OBJECT-TYPE
    SYNTAX      Ieee8021CBVlanIdentifier
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Specifies the vlan_identifier parameter to use in the EISS
        indication primitive for packets offered to upper layers, or
        the VLAN ID field for an IEEE 802.1Q tag in an
        ISS mac_service_data_unit. This address replaces the VLAN ID
        that was used to identify the packet (tsnCpeDmacVlanDownVlan)."
    REFERENCE   "9.1.4.7"
    ::= { ieee8021StreamIdActiveDestMacVlanIdentificationEntry 7 }

ieee8021StreamIdCpeDmacVlanUpPriority OBJECT-TYPE
    SYNTAX      IEEE8021PriorityValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Specifies the priority parameter to use in the EISS indication
        primitive for packets offered to upper layers."
    REFERENCE   "9.1.4.8"
    ::= { ieee8021StreamIdActiveDestMacVlanIdentificationEntry 8 }

-- =====
-- the ieee8021StreamIdIpStreamIdentificationTable
-- =====

ieee8021StreamIdIpStreamIdentificationTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Ieee8021StreamIdIpStreamIdentificationEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A table containing a set of controlling parameters for the
```

```
        IP Stream identification method."
REFERENCE    "9.1.5"
::= { ieee8021StreamIdStreamIdentification 6 }

ieee8021StreamIdIpStreamIdentificationEntry OBJECT-TYPE
SYNTAX      Ieee8021StreamIdIpStreamIdentificationEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "A set of managed objects that serve as the Stream
    identification parameters when using the IP Stream
    identification method."
REFERENCE    "9.1.5"
INDEX       { ieee8021StreamIdStreamIdentificationIndex }
::= { ieee8021StreamIdIpStreamIdentificationTable 1 }

Ieee8021StreamIdIpStreamIdentificationEntry ::=
SEQUENCE {
    ieee8021StreamIdCpeIpIdDestMac
        MacAddress,
    ieee8021StreamIdCpeIpIdTagged
        Ieee8021CBTaggedType,
    ieee8021StreamIdCpeIpIdVlan
        Ieee8021CBVlanIdentifier,
    ieee8021StreamIdCpeIpIdIpSourceType
        InetAddressType,
    ieee8021StreamIdCpeIpIdIpSource
        InetAddress,
    ieee8021StreamIdCpeIpIdIpDestinationType
        InetAddressType,
    ieee8021StreamIdCpeIpIdIpDestination
        InetAddress,
    ieee8021StreamIdCpeIpIdDscp
        Ieee8021CBIpDscpType,
    ieee8021StreamIdCpeIpIdNextProtocol
        Ieee8021CBIdNextProtocolType,
    ieee8021StreamIdCpeIpIdSourcePort
        InetPortNumber,
    ieee8021StreamIdCpeIpIdDestinationPort
        InetPortNumber
}

ieee8021StreamIdCpeIpIdDestMac OBJECT-TYPE
SYNTAX      MacAddress
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Specifies the destination address parameter that identifies a
    packet in an EISS indication primitive."
REFERENCE    "9.1.5.1"
::= { ieee8021StreamIdIpStreamIdentificationEntry 1 }

ieee8021StreamIdCpeIpIdTagged OBJECT-TYPE
SYNTAX      Ieee8021CBTaggedType
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "An enumerated value indicating whether a packet in an EISS
    indication or request primitive to the IP Stream identification
    function is to have a VLAN tag."
REFERENCE    "9.1.5.2"
::= { ieee8021StreamIdIpStreamIdentificationEntry 2 }

ieee8021StreamIdCpeIpIdVlan OBJECT-TYPE
SYNTAX      Ieee8021CBVlanIdentifier
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Specifies the vlan identifier parameter that identifies a
    packet in an EISS indication primitive. A value of 0 indicates
    that the frame is not to have a VLAN tag."
REFERENCE    "9.1.5.3"
```

```
::= { ieee8021StreamIdIpStreamIdentificationEntry 3 }

ieee8021StreamIdCpeIpIdIpSourceType OBJECT-TYPE
SYNTAX      InetAddressType
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Specifies the type of the source address parameter supplied
    in ieee8021StreamIdCpeIpIdIpSource."
REFERENCE   "9.1.5.4"
::= { ieee8021StreamIdIpStreamIdentificationEntry 4 }

ieee8021StreamIdCpeIpIdIpSource OBJECT-TYPE
SYNTAX      InetAddress
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Specifies the IPv4 (RFC 791) or IPv6 (RFC 2460) source address
    parameter that must be matched to identify packets coming up
    from lower layers. An address of all 0 indicates that the
    IP source address is to be ignored on packets received from
    lower layers."
REFERENCE   "9.1.5.4"
::= { ieee8021StreamIdIpStreamIdentificationEntry 5 }

ieee8021StreamIdCpeIpIdIpDestinationType OBJECT-TYPE
SYNTAX      InetAddressType
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Specifies the type of the destination address parameter
    supplied in ieee8021StreamIdCpeIpIdIpDestination."
REFERENCE   "9.1.5.4"
::= { ieee8021StreamIdIpStreamIdentificationEntry 6 }

ieee8021StreamIdCpeIpIdIpDestination OBJECT-TYPE
SYNTAX      InetAddress
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Specifies the IPv4 (RFC 791) or IPv6 (RFC 2460) destination
    address parameter that must be matched to identify packets
    coming up from lower layers."
REFERENCE   "9.1.5.5"
::= { ieee8021StreamIdIpStreamIdentificationEntry 7 }

ieee8021StreamIdCpeIpIdDscp OBJECT-TYPE
SYNTAX      Ieee8021CBIpDscpType
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Specifies the IPv4 (RFC 791) or IPv6 (RFC 2460) differentiated
    services codepoint (DSCP, RFC 2474) that must be matched to
    identify packets coming up from the lower layers. A value of
    64 decimal indicates that the DSCP is to be ignored on packets
    received from lower layers."
REFERENCE   "9.1.5.6"
::= { ieee8021StreamIdIpStreamIdentificationEntry 8 }

ieee8021StreamIdCpeIpIdNextProtocol OBJECT-TYPE
SYNTAX      Ieee8021CBIdNextProtocolType
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "Specifies the IP next protocol parameter that must be matched
    to identify packets coming up from lower layers. The value of
    this parameter must specify either none, UDP (RFC 768),
    TCP (RFC 793), or SCTP (RFC 4960). If 'none', then the
    tsnCpeIpIdSourcePort and tsnCpeIpIdDestinationPort managed
    objects are not used."
REFERENCE   "9.1.5.7"
::= { ieee8021StreamIdIpStreamIdentificationEntry 9 }
```

```
ieee8021StreamIdCpeIpIdSourcePort OBJECT-TYPE
    SYNTAX      InetPortNumber
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Specifies the TCP or UDP Source Port parameter that must be
        matched to identify packets coming up from lower layers.
        A value of 0 indicates that the Source Port number of the
        packet is to be ignored on packets received from lower layers."
    REFERENCE   "9.1.5.8"
    ::= { ieee8021StreamIdIpStreamIdentificationEntry 10 }

ieee8021StreamIdCpeIpIdDestinationPort OBJECT-TYPE
    SYNTAX      InetPortNumber
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Specifies the TCP or UDP Destination Port parameter that must
        be matched to identify packets coming up from lower layers.
        A value of 0 indicates that the Destination Port number of the
        packet is to be ignored on packets received from lower layers."
    REFERENCE   "9.1.5.9"
    ::= { ieee8021StreamIdIpStreamIdentificationEntry 11 }

-- =====
-- the ieee8021StreamIdStreamIdInFacOutputPortHandleList
-- table
-- =====
ieee8021StreamIdStreamIdInFacOutputPortHandleListTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Ieee8021StreamIdStreamIdInFacOutputPortHandleListEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A table containing a list of ports on which an in-facing Stream
        identification function using this identification method is to
        be placed for this Stream in the output (towards the system
        forwarding function) direction, referenced in
        ieee8021StreamIdStreamIdentificationIndex."
    REFERENCE   "9.1.1.2"
    ::= { ieee8021StreamIdStreamIdInFacOutputPortHandleList 2 }

ieee8021StreamIdStreamIdInFacOutputPortHandleListEntry OBJECT-TYPE
    SYNTAX      Ieee8021StreamIdStreamIdInFacOutputPortHandleListEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A set of managed objects providing the ports on which an
        in-facing Stream identification function using this
        identification method is to be placed for this Stream in the
        output (towards the system forwarding function) direction,
        referenced in ieee8021StreamIdStreamIdentificationIndex."
    REFERENCE   "9.1.1.2"
    INDEX       { ieee8021StreamIdStreamIdentificationIndex,
                  ieee8021StreamIdStreamIdInFacOutputPortHandleListIndex
                }
    ::= { ieee8021StreamIdStreamIdInFacOutputPortHandleListTable 1 }

Ieee8021StreamIdStreamIdInFacOutputPortHandleListEntry ::=
    SEQUENCE {
        ieee8021StreamIdStreamIdInFacOutputPortHandleListIndex
            Unsigned32,
        ieee8021StreamIdStreamIdInFacOutputPortHandle
            VariablePointer,
        ieee8021StreamIdStreamIdInFacOutputPortHandleListStatus
            RowStatus
    }

ieee8021StreamIdStreamIdInFacOutputPortHandleListIndex OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  not-accessible
    STATUS      current
```

```

DESCRIPTION
    "Index for the In-Facing Output Port handle list table."
    ::= { ieee8021StreamIdStreamIdInFacOutputPortHandleListEntry 1 }

ieee8021StreamIdStreamIdInFacOutputPortHandle OBJECT-TYPE
    SYNTAX      VariablePointer
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "A pointer to an interface that is an element of the
         ieee8021StreamIdStreamIdInFacOutputPortList instance in the
         ieee8021StreamIdStreamIdentificationTable."
    REFERENCE    "9.1.1.2"
    ::= { ieee8021StreamIdStreamIdInFacOutputPortHandleListEntry 2 }

ieee8021StreamIdStreamIdInFacOutputPortHandleListStatus OBJECT-TYPE
    SYNTAX      RowStatus
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "Row-Status for the In-Facing Output Port handle list table."
    ::= { ieee8021StreamIdStreamIdInFacOutputPortHandleListEntry 3 }

-- =====
-- the ieee8021StreamIdStreamIdOutFacOutputPortList
-- table
-- =====
ieee8021StreamIdStreamIdOutFacOutputPortHandleListTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Ieee8021StreamIdStreamIdOutFacOutputPortHandleListEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "A table containing a list of ports on which an out-facing
         Stream identification function using this identification method
         is to be placed for this Stream in the output (towards the
         system forwarding function) direction, referenced in
         ieee8021StreamIdStreamIdentificationIndex."
    REFERENCE    "9.1.1.3"
    ::= { ieee8021StreamIdStreamIdOutFacOutputPortHandleList 3 }

ieee8021StreamIdStreamIdOutFacOutputPortHandleListEntry OBJECT-TYPE
    SYNTAX      Ieee8021StreamIdStreamIdOutFacOutputPortHandleListEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "A set of managed objects providing the ports on which an
         out-facing Stream identification function using this
         identification method is to be placed for this Stream in the
         output (towards the system forwarding function) direction,
         referenced in ieee8021StreamIdStreamIdentificationIndex."
    REFERENCE    "9.1.1.3"
    INDEX       { ieee8021StreamIdStreamIdentificationIndex,
                  ieee8021StreamIdStreamIdOutFacOutputPortHandleListIndex
                }
    ::= { ieee8021StreamIdStreamIdOutFacOutputPortHandleListTable 1 }

Ieee8021StreamIdStreamIdOutFacOutputPortHandleListEntry ::=
    SEQUENCE {
        ieee8021StreamIdStreamIdOutFacOutputPortHandleListIndex
            Unsigned32,
        ieee8021StreamIdStreamIdOutFacOutputPortHandle
            VariablePointer,
        ieee8021StreamIdStreamIdOutFacOutputPortHandleListStatus
            RowStatus
    }

ieee8021StreamIdStreamIdOutFacOutputPortHandleListIndex OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "Index for the Out-Facing Output Port handle list table."

```

```

 ::= { ieee8021StreamIdStreamIdOutFacOutputPortHandleListEntry 1 }

ieee8021StreamIdStreamIdOutFacOutputPortHandle OBJECT-TYPE
    SYNTAX      VariablePointer
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "A pointer to an interface that is an element of the
         ieee8021StreamIdStreamIdOutFacOutputPortList instance in the
         ieee8021StreamIdStreamIdentificationTable."
    REFERENCE    "9.1.1.3"
    ::= { ieee8021StreamIdStreamIdOutFacOutputPortHandleListEntry 2 }

ieee8021StreamIdStreamIdOutFacOutputPortHandleListStatus OBJECT-TYPE
    SYNTAX      RowStatus
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "Row-Status for the Out-Facing Output Port handle list table."
    ::= { ieee8021StreamIdStreamIdOutFacOutputPortHandleListEntry 3 }

-- =====
-- the ieee8021StreamIdStreamIdInFacInputPortList
-- table
-- =====
ieee8021StreamIdStreamIdInFacInputPortHandleListTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Ieee8021StreamIdStreamIdInFacInputPortHandleListEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "A table containing a list of ports on which an in-facing Stream
         identification function using this identification method is to
         be placed for this Stream in the input (coming from the system
         forwarding function) direction, referenced in
         ieee8021StreamIdStreamIdentificationIndex."
    REFERENCE    "9.1.1.4"
    ::= { ieee8021StreamIdStreamIdInFacInputPortHandleList 4 }

ieee8021StreamIdStreamIdInFacInputPortHandleListEntry OBJECT-TYPE
    SYNTAX      Ieee8021StreamIdStreamIdInFacInputPortHandleListEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "A set of managed objects providing the ports on which an
         in-facing Stream identification function using this
         identification method is to be placed for this Stream in the
         input (coming from the system forwarding function) direction,
         referenced in ieee8021StreamIdStreamIdentificationIndex."
    REFERENCE    "9.1.1.4"
    INDEX        { ieee8021StreamIdStreamIdentificationIndex,
                   ieee8021StreamIdStreamIdInFacInputPortHandleListIndex
                 }
    ::= { ieee8021StreamIdStreamIdInFacInputPortHandleListTable 1 }

Ieee8021StreamIdStreamIdInFacInputPortHandleListEntry ::=
    SEQUENCE {
        ieee8021StreamIdStreamIdInFacInputPortHandleListIndex
            Unsigned32,
        ieee8021StreamIdStreamIdInFacInputPortHandle
            VariablePointer,
        ieee8021StreamIdStreamIdInFacInputPortHandleListStatus
            RowStatus
    }

ieee8021StreamIdStreamIdInFacInputPortHandleListIndex OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "Index for the In-Facing Input Port handle list table."
    ::= { ieee8021StreamIdStreamIdInFacInputPortHandleListEntry 1 }

```

```

ieee8021StreamIdStreamIdInFacInputPortHandle OBJECT-TYPE
    SYNTAX      VariablePointer
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "A pointer to an interface that is an element of the
         ieee8021StreamIdStreamIdOutFacInputPortList instance in the
         ieee8021StreamIdStreamIdentificationTable."
    REFERENCE   "9.1.1.4"
    ::= { ieee8021StreamIdStreamIdInFacInputPortHandleListEntry 2 }

ieee8021StreamIdStreamIdInFacInputPortHandleListStatus OBJECT-TYPE
    SYNTAX      RowStatus
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "Row-Status for the In-Facing Input Port handle list table."
    ::= { ieee8021StreamIdStreamIdInFacInputPortHandleListEntry 3 }

-- =====
-- the ieee8021StreamIdStreamIdOutFacInputPortList
-- table
-- =====
ieee8021StreamIdStreamIdOutFacInputPortHandleListTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Ieee8021StreamIdStreamIdOutFacInputPortHandleListEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A table containing a list of ports on which an out-facing
         Stream identification function using this identification method
         is to be placed for this Stream in the input (coming from the
         physical interface) direction, referenced in
         ieee8021StreamIdStreamIdentificationIndex."
    REFERENCE   "9.1.1.5"
    ::= { ieee8021StreamIdStreamIdOutFacInputPortHandleList 5 }

ieee8021StreamIdStreamIdOutFacInputPortHandleListEntry OBJECT-TYPE
    SYNTAX      Ieee8021StreamIdStreamIdOutFacInputPortHandleListEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A set of managed objects providing the ports on which an
         out-facing Stream identification function using this
         identification method is to be placed for this Stream in the
         input (coming from the physical interface) direction,
         referenced in ieee8021StreamIdStreamIdentificationIndex."
    REFERENCE   "9.1.1.5"
    INDEX       { ieee8021StreamIdStreamIdentificationIndex,
                  ieee8021StreamIdStreamIdOutFacInputPortHandleListIndex
                }
    ::= { ieee8021StreamIdStreamIdOutFacInputPortHandleListTable 1 }

Ieee8021StreamIdStreamIdOutFacInputPortHandleListEntry ::=
    SEQUENCE {
        ieee8021StreamIdStreamIdOutFacInputPortHandleListIndex
            Unsigned32,
        ieee8021StreamIdStreamIdOutFacInputPortHandle
            VariablePointer,
        ieee8021StreamIdStreamIdOutFacInputPortHandleListStatus
            RowStatus
    }

ieee8021StreamIdStreamIdOutFacInputPortHandleListIndex OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Index for the Out-Facing Input Port handle list table."
    ::= { ieee8021StreamIdStreamIdOutFacInputPortHandleListEntry 1 }

ieee8021StreamIdStreamIdOutFacInputPortHandle OBJECT-TYPE
    SYNTAX      VariablePointer

```

```

MAX-ACCESS    read-create
STATUS        current
DESCRIPTION
  "A pointer to an interface that is an element of the
   ieee8021StreamIdStreamIdOutFacInputPortList instance in the
   ieee8021StreamIdStreamIdentificationTable."
REFERENCE     "9.1.1.5"
::= { ieee8021StreamIdStreamIdOutFacInputPortHandleListEntry 2 }

ieee8021StreamIdStreamIdOutFacInputPortHandleListStatus OBJECT-TYPE
SYNTAX        RowStatus
MAX-ACCESS    read-create
STATUS        current
DESCRIPTION
  "Row-Status for the Out-Facing Input Port handle list table."
::= { ieee8021StreamIdStreamIdOutFacInputPortHandleListEntry 3 }

-- =====
-- the ieee8021StreamIdPerPortPerStreamCountersTable
-- =====

ieee8021StreamIdPerPortPerStreamCountersTable OBJECT-TYPE
SYNTAX        SEQUENCE OF Ieee8021StreamIdPerPortPerStreamCountersEntry
MAX-ACCESS    not-accessible
STATUS        current
DESCRIPTION
  "A table containing a set of counters for Stream
   identification that are instantiated per port, Stream, and
   direction."
REFERENCE     "9.2"
::= { ieee8021StreamIdPerPortPerStreamCounters 6 }

ieee8021StreamIdPerPortPerStreamCountersEntry OBJECT-TYPE
SYNTAX        Ieee8021StreamIdPerPortPerStreamCountersEntry
MAX-ACCESS    not-accessible
STATUS        current
DESCRIPTION
  "A set of managed objects for Stream identification
   counters that are instantiated per port, Stream, and
   direction."
REFERENCE     "9.2"
INDEX { ifIndex,
        ieee8021StreamIdStreamIdHandle,
        ieee8021StreamIdPerPortPerStreamDirection
      }
::= { ieee8021StreamIdPerPortPerStreamCountersTable 1 }

Ieee8021StreamIdPerPortPerStreamCountersEntry ::=
SEQUENCE {
  ieee8021StreamIdPerPortPerStreamDirection
    TruthValue,
  ieee8021StreamIdPerPortPerStreamInputPackets
    Counter64,
  ieee8021StreamIdPerPortPerStreamOutputPackets
    Counter64
}

ieee8021StreamIdPerPortPerStreamDirection OBJECT-TYPE
SYNTAX        TruthValue
MAX-ACCESS    not-accessible
STATUS        current
DESCRIPTION
  "A managed object specifying the facing of a given Stream
   on a port. The Stream can be either in-facing (False) or
   out-facing (True)."
```

```

REFERENCE     "9.2"
::= { ieee8021StreamIdPerPortPerStreamCountersEntry 1 }

ieee8021StreamIdPerPortPerStreamInputPackets OBJECT-TYPE
SYNTAX        Counter64
MAX-ACCESS    read-only
STATUS        current

```

```
DESCRIPTION
    "A managed object serving as a counter that is incremented once
    for each packet identified by the Stream identification
    function."
REFERENCE    "9.2.1"
::= { ieee8021StreamIdPerPortPerStreamCountersEntry 2 }

ieee8021StreamIdPerPortPerStreamOutputPackets OBJECT-TYPE
SYNTAX      Counter64
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "A managed object serving as a counter that is incremented once
    for each packet passed down the stack by the Stream
    identification function."
REFERENCE    "9.2.2"
::= { ieee8021StreamIdPerPortPerStreamCountersEntry 3 }

-- =====
-- the ieee8021StreamIdPerPortCountersTable
-- =====

ieee8021StreamIdPerPortCountersTable OBJECT-TYPE
SYNTAX      SEQUENCE OF Ieee8021StreamIdPerPortCountersEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "A table containing a set of counters for Stream
    identification that are instantiated per port and
    direction."
REFERENCE    "9.3"
::= { ieee8021StreamIdPerPortCounters 7 }

ieee8021StreamIdPerPortCountersEntry OBJECT-TYPE
SYNTAX      Ieee8021StreamIdPerPortCountersEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "A a set of managed objects for Stream identification
    counters that are instantiated per port and direction."
REFERENCE    "9.3"
INDEX { ifIndex }
::= { ieee8021StreamIdPerPortCountersTable 1 }

Ieee8021StreamIdPerPortCountersEntry ::=
SEQUENCE {
    ieee8021StreamIdPerPortInputPackets
        Counter64,
    ieee8021StreamIdPerPortOutputPackets
        Counter64
}

ieee8021StreamIdPerPortInputPackets OBJECT-TYPE
SYNTAX      Counter64
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "A managed object serving as a counter that is incremented once
    for each packet identified by any Stream identification
    function on this port. Its value equals the sum (modulo the
    size of the counters) of all of the
    ieee8021StreamIdPerPortPerStreamInputPackets counters on this
    same port."
REFERENCE    "9.3.1"
::= { ieee8021StreamIdPerPortCountersEntry 1 }

ieee8021StreamIdPerPortOutputPackets OBJECT-TYPE
SYNTAX      Counter64
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "A managed object serving as a counter that is incremented once
```