IEEE P802.1Qbh/D2.1

Draft Standard for
Local and Metropolitan Area Networks—

Virtual Bridged Local Area Networks — Amendment: Bridge Port Extension

Sponsor
LAN/MAN Standards Committee
of the
IEEE Computer Society

Prepared by the Data Center Bridging and Interworking Task Groups of IEEE 802.1

Abstract: This amendment to IEEE Std. 802.1Q specifies support of the MAC Service by Extended Bridges, the principles of operation of networks built with Extended Bridges, the operation of VLAN-aware Bridges features for the Controlling Bridge used in an Extended Bridge, and the control of Port Extenders used in an Extended Bridge including management, protocols and algorithms.
Abstract: Bridged Local Area Networks, LANs, local area networks, metropolitan area networks, MAC Bridges, MANs, Virtual Bridged Local Area Networks, Edge Virtual Bridging, Data Center Bridging, EVB, DCB.

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Editors' Foreword

<<Notes>>

<<Throughout this document, all notes such as this one, presented between angle braces, are temporary notes inserted by the Editors for a variety of purposes; these notes and the Editors' Foreword will all be removed prior to publication and are not part of the normative text.>>

<<Comments and participation in 802.1 standards development

Comments on this draft are encouraged. **PLEASE NOTE: All issues related to IEEE standards presentation style, formatting, spelling, etc. are routinely handled between the 802.1 Editor and the IEEE Staff Editors prior to publication, after balloting and the process of achieving agreement on the technical content of the standard is complete.** Readers are urged to devote their valuable time and energy only to comments that materially affect either the technical content of the document or the clarity of that technical content. Comments should not simply state what is wrong, but also what might be done to fix the problem.

Full participation in the development of this draft requires individual attendance at IEEE 802 meetings. Information on 802.1 activities, working papers, and email distribution lists etc. can be found on the 802.1 Website:

http://ieee802.org/1/

Use of the email distribution list is not presently restricted to 802.1 members, and the working group has had a policy of considering ballot comments from all who are interested and willing to contribute to the development of the draft. Individuals not attending meetings have helped to identify sources of misunderstanding and ambiguity in past projects. Non-members are advised that the email lists exist primarily to allow the members of the working group to develop standards, and are not a general forum.

Comments on this document may be sent to the 802.1 email exploder, to the editors, or to the Chairs of the 802.1 Working Group, Data Center Bridging Task Group, and Interworking Task Group.

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http://standards.ieee.org/board/pat/guide.html>>

<<Overview: Draft text and accompanying information

This document currently comprises:

A cover page, identical to the title page.
The editors' introductory notes to each draft, briefly summarizing the progress and focus of each successive draft.
The title page for this amendment including an Abstract and Keywords. This title page will be retained for the period that the amendment is published as a separate document.
The revision document proper, documented in the usual form for 802 standards.
An Annex Z comprising the editors' discussion of issues. This annex will be deleted from the document prior to sponsor ballot.
Editors' notes throughout the document, including requests for comment on specific issues and pointing deficiencies in the current draft.
IEEE boilerplate text.

The records of participants in the development of the standard, the introduction to 802 standards, and the introduction to this revision of the standard are not included, and will be added at an appropriate time.

During the early stages of draft development, 802.1 editors have a responsibility to attempt to craft technically coherent drafts from the resolutions of ballot comments and the other discussions that take place in the working group meetings. Preparation of drafts often exposes inconsistencies in editors instructions or exposes the need to make choices between approaches that were not fully apparent in the meeting. Choices and requests by the editors' for contributions on specific issues will be found in the editors' introductory notes to the current draft, at appropriate points in the draft, and in Annex Z. Significant discussion of more difficult topics will be found in the last of these.

The ballot comments received on each draft, and the editors' proposed and final disposition of comments, are part of the audit trail of the development of the standard and are available, along with all the revisions of the draft on the 802.1 website (for address see above).
>>

<<Project Authorization Request, Scope, Purpose, and Five Criteria

The PAR (Project Authorization Request) Scope, Purpose, and Need for this project, as approved by IEEE Nescom follow, along with the 5 criteria developed as part of the IEEE 802 PAR process:

Scope: This amendment specifies protocols, procedures, and managed objects to support Port Extension. A Port Extender attaches to a MAC Port of an 802.1Q bridge and provides additional MAC Ports that are logically Ports of the 802.1Q bridge to which it is attached (i.e. the "Controlling Bridge"). The protocols, procedures, and managed objects specified in this amendment are expected to specify new behavior in bridges that support Port Extension as well as the behavior of Port Extenders themselves. In addition, the protocols, procedures, and managed objects specified in this amendment support the cascading of Port Extenders. To the extent technically reasonable, all frame filtering and relay functions remain in the Controlling Bridge. Use of a Service Virtual LAN Tag (S-TAG) for Multichannel capability as being defined in Edge Virtual Bridging is envisaged to achieve this objective. A new on-the-wire indication (e.g. a new tag) is envisioned to support remote replication for purposes including frame flooding and group address support.

Purpose: The purposes of this project include:

- To reduce the management cost of networks comprising large number of bridges (such as those commonly found in a data center environments) through significant reduction in both the number of devices to be managed and the management traffic required.

- To decrease total cost of ownership by reducing initial capital expenditure along with management and operational costs.

Need for the Project: Data center management today is highly complex. This complexity may be reduced by aggregating the more complex bridging functions onto fewer bridges and by collapsing bridge layers from a management perspective. The EVB project is defining reflective relay and multichannel capabilities. The Port Extension project extends these capabilities by providing a remote replication service. In addition, a Port

Extender device will be specified that utilizes the EVB capabilities and remote replication service. This is intended to reduce management complexity by aggregating the more complex bridging functions onto fewer bridges.

The Port Extender device may be used to collapse layers in the network resulting in reduced capital expenditure, points of management, and management traffic and thus reducing total cost of ownership.

Five Criteria

1. Broad Market Potential

a. Broad sets of applicability

Data centers containing hundreds or thousands of deployed bridges are common. These include data centers that have deployed high density server solutions including “1U” servers, server blade racks, etc. Deployments such as these are expected to significantly benefit from the technologies proposed. Additionally, data centers that have deployed server virtualization technology are expected to enjoy even greater benefits.

b. Multiple vendors and numerous users

There has been interest expressed by multiple vendors in this technology. In addition, many vendors have announced products supporting similar technology in a proprietary fashion. This technology is applicable to bridge, NIC, server, and software vendors. Given the wide deployment of networks that would benefit from this technology, numerous users may clearly be expected.

c. Balanced costs (LAN versus attached stations)

This technology has been expressly designed for balanced costs. It is deployable with no change to existing attached stations (that is, the technology interoperates with existing NIC cards). The design of the Port Extender function has been carefully considered to keep costs constrained. This has been a high priority since it is expected that Port Extenders may well outnumber bridges in typical deployments and are likely to be integrated in with attached stations.

2. Compatibility

The combination of Port Extenders and their Controlling Bridge result in an 802.1Q bridge, thus compatibility with external devices is assured. In particular, such a combination will fully interoperate with neighbor bridges (whether embedded in stations or external), as well as existing NIC cards. Finally, this technology will assume full benefit of other Data Center Bridging technologies under development including Priority-based flow control, Enhanced Transmission Selection, and Congestion Notification.

3. Distinct Identity

a. Substantially different from other IEEE 802 standards

IEEE Std 802.1Q is the authoritative specification for Bridges. No other IEEE 802 standard addresses remote replication and Port Extension by bridges.

b. One unique solution per problem (not two solutions to a problem)

The need to provide remote replication and Port Extension has not been anticipated by any other standard. Consequently, this is the only solution to this problem. Importantly, this proposal address the needs produced by both external and embedded bridge devices along with server virtualization with a common solution thereby eliminating the need for an additional solution in the future.

c. Easy for the document reader to select the relevant specification

IEEE Std 802.1Q is the natural reference for Port Extension of 802.1Q bridges.

4. Technical Feasibility

a. Demonstrated system feasibility

Similar techniques have been deployed as proprietary enhancements to 802.1Q bridging and are supported by multiple vendors. In additions, roughly analogous techniques have been deployed in Fibre Channel that have been widely adopted. These deployments have shown that the technology proposed is feasible.

b. Proven technology, reasonable testing

This technology has been proven on an operational basis in data centers using proprietary implementations. The resulting behavior remains that of an 802.1Q bridge thus existing testing methodologies remain applicable. The on-the-wire indication of ingress / egress Port numbers is intuitively reasonable to test and has been shown to be such in the existing proprietary implementations.

c. Confidence in reliability

The overall behavior is that of an 802.1Q bridge; the reliability of such has been firmly established. Furthermore, the simplicity of the Port Extenders compared to that of the bridges they replace, along with the associated reductions in management complexity, is expected to yield an increase in reliability over that achievable today.

d. Coexistence of 802 wireless standards specifying devices for unlicensed operation

Not applicable.

5. Economic Feasibility

a. Known cost factors, reliable data

Port Extenders are expected to cost less than existing bridges due to their relative simplicity (e.g. by simplifying the address table structure and eliminating many of the advanced functions typically found in the bridges that Port Extenders would replace). This is supported by experience in existing deployments of this technology. In addition, the resultant reduction in management complexity brings significant cost advantages. The Port Extender creates many lower cost Ports for every controlling bridge Port further benefiting the overall system cost. Existing experience also indicates no significant increase in the cost of the bridges that attach to the Port Extenders.

b. Reasonable cost for performance

The proposed technology reduces overall system cost while maintaining existing performance (both in raw bandwidth and feature / functionality) for a wide variety of deployments thus cost for performance is benefited.

c. Consideration of installation costs

Due to the simplicity of the Port Extender device, initial capital expenditure and initial configuration costs are expected to be reduced.

>>

<<Editor's Introduction to draft 0.0.

This is the initial Editor's draft. >>

<<Editor's Introduction to draft 0.1.

Added significant technical content particularly around the architecture and operation of Bridge Port Extension.>>

<<Editor's Introduction to draft 0.2.

Modified content to reflect feedback from the March, 2010 Plenary meeting in Orlando, Florida. This includes:

- Removal of the “filter” bit from the M-TAG and added an explanation of the use of a NULL value of S-VID instead.

- Added the PCP and DEI fields to the M-TAG.

- Added text regarding how the MCID is determined. During the meeting, a couple options were discussed but there was no clear consensus. The editor picked one method for inclusion as a starting point. Refer to annex Z for more information.

- Added text regarding how the source S-VID is communicated to the EISS for generation of the M-TAG. Note that this adds yet another parameter to the EM_UNITDATA.request primitive. There was concern raised that adding parameters to these primitives “should not be taken lightly.” The editor believes that these parameters have been added with all due concern and respect; however, the editor solicits suggestions for any alternatives that might be considered.

- Added clause specifying the Port Extender Control and Status Protocol>>

<<Editor’s Introduction to draft 0.3.

Modified content to reflect the ballot comment resolutions from draft 0.2 and to incorporate feedback from the May, 2010 Interim meeting in Geneva, Switzerland. Added additional content to Port Extender Control and Status Protocol in clause 45.

>>

<<Editor’s Introduction to draft 0.4.

Modified content to reflect the ballot comment resolutions from draft 0.3 and to incorporate feedback from the July, 2010 Plenary meeting in San Diego, California. In addition, clause 45, the Port Extender Control and Status Protocol, was simplified significantly to take advantage of the ECP and VDP.

>>

<<Editor’s Introduction to draft 0.5.

Modified content to reflect the ballot comment resolutions from draft 0.4 and to incorporate feedback from the September, 2010 interim meeting in York, England. As a result of this input, the draft was modified in numerous places to use a single tag for multicast and unicast. Since the term M-TAG and M-component imply multicast, these terms were changed to E-TAG and E-component to imply “extension”.

>>

<<Editor’s Introduction to draft 1.0.

Modified content to reflect the ballot comment resolutions from draft 0.5 and to incorporate feedback from the November, 2010 plenary meeting in Dallas, TX. In addition, the management and PICs sections were added.>>

<<Editor’s Introduction to draft 1.1.

Modified content to reflect the ballot comment resolutions from draft 1.1 and to incorporate feedback from the January, 2011 plenary meeting in Lihue, HI. As a result of this feedback, the Port Extender is now specified as an independent device in clause 45 rather than as a type of VLAN-aware Bridge component. Furthermore, the concept of an E-component has been removed (its now called a Port Extender everywhere). Also, the concept that an E-channel is a type of VLAN has been removed. There still remains a small number of additions to the VLAN-aware Bridge component to support a Controlling Bridge that uses the remote replication capability.>>

<<Editor’s introduction to draft 1.2.

Draft 1.2 is an intermediate draft (i.e., not submitted for working group ballot). As part of the comment resolution of draft 1.1, it was decided to split part of P802.1Qbh into a new standard, P802.1BR. P802.1Qbh will retain the material relevant to bridges. P802.1BR will contain the material specific to Port Extension (largely clauses 9, 44, and 45). This draft responds to all of the comments received on draft 1.1 with the exception of splitting out the new material. Draft 1.2 forms the basis for the split.>>

<<Editor's introduction to draft 2.0

This draft has been updated to include only the enhancements required to support Port Extension by a Controlling Bridge. The specification of the Port Extender itself, the E-TAG, and the Port Extender Control and Status Protocol has been moved into a separate standard P802.1BR.>>

<<Editor's introduction of draft 2.1

All of the material in this draft has been moved to 802.1BR with the exception of an explanation in clause 5 that a Bridge can be a Controlling Bridge referring to 802.1BR, the addition of PE CSP type to ECP in clause 43, and the LLDP PE TLV in clause D.>>

IEEE P802.1Qbh/D2.1

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Introduction to IEEE P802.1Qbh™

(This introduction is not part of P802.1Qbh, IEEE Standards for Local and metropolitan area networks—Virtual Bridged Local Area Networks—Amendment: Bridge Port Extension.)

This standard allows bridge Port Extension of a controlling bridge's Ports to Ports provided by a Port Extender. To this end it:

a) Notes that additional conformance for a Controlling Bridge exists in IEEE Std 802.1BR.
b) Specifies a LLDP TLV for the identification of Port Extenders and the advertisement of support of Bridge Port Extension.

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 may be obtained from

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Participants

The following is a list of participants in the Interworking activities of the IEEE 802.1 Working Group during the development of P802.1Qbh. Voting members at the time of publication are marked with an asterisk (*).

When the IEEE 802.1 Working Group approved IEEE Std 802.1Qh, it had the following membership:

Tony Jeffree, *Chair*
Paul Congdon, *Vice Chair*
Stephen Haddock, *Chair, Interworking Task Group*

<<TBA>>

The following members of the balloting committee voted on P802.1Qbh. Balloters may have voted for approval, disapproval, or abstention.

<<TBA>>

When the IEEE-SA Standards Board approved this standard on <<TBA>>, it had the following membership:

???, *Chair*
???, *Vice Chair*
???, *Secretary*

<<TBA>>

Contents

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Tables

IEEE P802.1Qbh/D2.1

Draft Standard for Local and Metropolitan Area Networks— Virtual Bridged Local Area Networks — Amendment: Bridge Port Extension

Editorial Notes

This amendment specifies changes to IEEE Std 802.1Q-2011 that support connecting a Bridge Port to a Port Extender to extend the bridge MAC Relay functionality to the Ports provided by a Port Extender. Changes are applied to the base text of P802.1Q-2011 as amended by IEEE P802.1Qbb, P802.1Qbc, P802.1Qbe, P802.1Qbf, and P802.1Qbg. Text shown in ***bold italics*** in this amendment defines the editing instructions for changes to this base text. Three editing instructions are used: ***change, delete,*** and ***insert***. ***Change*** is used to make a change to existing material. The editing instruction specifies the location of the change and describes what is being changed. Changes to existing text may be clarified using ~~strikeout~~ markings to indicate removal of old material, and underscore markings to indicate addition of new material. ***Delete*** removes existing material. ***Insert*** adds new material without changing the existing material. Insertions may require renumbering. If so, renumbering instructions are given in the editing instruction. Editorial notes will not be carried over into future editions of IEEE Std.802.1Q.

2. References

Insert the following reference in the appropriate location in this clause:

IEEE Std 802.1BR™, IEEE Standards for Local and Metropolitan Area Networks: Port Extenders.

5. Conformance

Insert the following clause at the end of clause 5 re-numbering as appropriate:

5.21 Controlling Bridge Conformance

A conformant implementation of a Bridge can also operate as a Controlling Bridge in support of Bridge Port Extension as specified IEEE Std 802.1BR.

NOTE — The Controlling Bridge requirements specified in IEEE Std 802.1BR are intended to be combined with the requirements of a bridge system, such as a VLAN Bridge, a Provider Bridge, or a Backbone Edge Bridge, to form a Controlling Bridge of the corresponding type.

43. Edge Control Protocol (ECP)

43.3.3.4 Sub-type

Insert the following row in table 43-1:

Table 43-1—ECP sub-types

PE CSP	**0x0002**

Annex D

(normative)

IEEE 802.1 Organizationally Specific TLVs

D.1 Requirements of the IEEE 802.1 Organizationally Specific TLV sets

Insert the Port Extension TLV to table D.1 allocating the next subtype and adjusting the reserved subtypes appropriately:

Table D.1—IEEE 802.1 Organizationally Specific TLVs

IEEE 802.1 subtype	TLV name	TLV set name	TLV reference	Feature clause reference
TBD	Port Extension	peSet	D.2.15	IEEE Std 802.1BR

D.2 Organizationally Specific TLV definitions

Insert the following at the end of D.2, re-numbering the paragraphs as needed:

D.2.15 Port Extension TLV

The Port Extension TLV is a TLV that allows a Bridge or Port Extender to advertise support for Bridge Port Extension on a given Port. Bridge Port Extension is specified in IEEE Std 802.1BR along with the terminology used in this subclause. Transmission by a Controlling Bridge indicates that the Port is, or is capable of, operating as a Cascade Port. Transmission by a Controlling Bridge through an Extended Port indicates that the Extended Port is, or is capable of, operating as a Cascade Port. Transmission by a Port Extender indicates that the Port is, or is capable of, operating as an Upstream Port. The value of Cascade Port Priority differentiates between Ports that operate as an Upstream Port versus those that operate as a Cascade Port.

Figure D-1 shows the Port Extension TLV format.

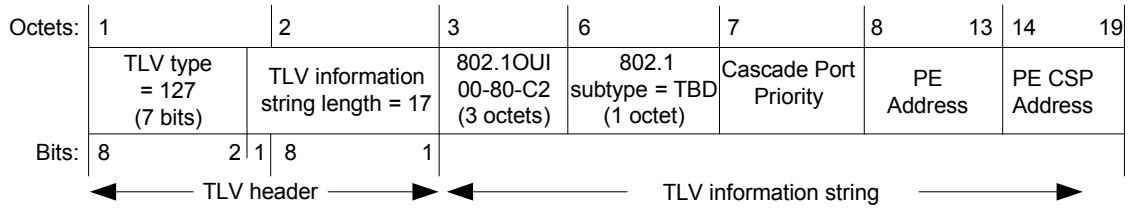

Figure D-1—Port Extension TLV format

D.2.15.1 Cascade Port Priority

When transmitted from a Port capable of operating as a cascade Port (e.g. Ports of a Controlling Bridge or Extended Ports of an Extended Bridge), indicates the cascade_port_priority used in determining which Port is to be used by a Port Extender as its Upstream Port. Valid values are the range from 0 to 254.

When transmitted from a Port Extender on an Upstream Port or a Port capable of becoming an Upstream Port, this parameter shall be set to 255.

D.2.15.2 PE Address

When emitted from a Port Extender, the PE Address contains an unique MAC address that identifies the Port Extender. This may be the same as the PE CSP address.

When emitted from a Controlling Bridge, the PE Address contains an unique MAC address that identifies the internal Port Extender.

D.2.15.3 PE CSP Address

Contains the MAC address that is to be used for transmission of the Port Extension Control and Status Protocol to the device emitting this TLV. An unique address is emitted from each Port.

D.4.2 Structure of the IEEE 802.1/LLDP extension MIB

Insert the following objects to table D-5 in the groups indicated:

Table D-5—IEEE 802.1/LLDP extension MIB object cross reference

MIB table	MIB object	LLDP reference
Configuration group		
lldpXdot1PeCofigPortExtensionTable		Augments lldpV2Xdot1LocPortExtensionEntry
	lldpXdot1PeConfigPortExtensionTxEnable	D.2.15
Local system information		
lldpXdot1PeLocPortExtensionTable		
	lldpV2LocPortIfIndex	(Table index)
	lldpXdot1LocPeCascadePortPriority	D.2.15.1
	lldpXdot1LocPeAddress	D.2.15.2
	lldpXdot1LocPeCSPAddress	D.2.15.3
Remote system information		
lldpXdot1PeRemPortExtensionTable		
	lldpV2RemTimeMark	(Table index)
	lldpV2RemLocalIfIndex	(Table index)
	lldpV2RemLocalDestMACAddress	(Table index)
	lldpV2RemIndex	(Table index)
	lldpXdot1PeCascadePortPriority	D.2.15.1
	lldpXdot1PeAddress	D.2.15.2
	lldpXdot1PeCSPAddress	D.2.15.3

D.4.4 Security considerations for IEEE 802.1 LLDP extension MIB module

Insert the following objects to the list in D.4.4 of objects that can result in improper operation of LLDP when in transmit mode, re-lettering the list as appropriate:

g) lldpXdot1PeConfigPortExtensionTxEnable
h) lldpXdot1PeLocPECascadePortPriority

Add the following objects to the list in D.4.4 of objects that may be considered sensitive or vulnerable in transmit mode:

10) lldpV2Xdot1LocPECascadePortPriority
11) lldpV2Xdot1LocPEAddress
12) lldpV2Xdot1LocPECSPAddress

Add the following objects to the list in D.4.4 of objects that may be considered sensitive or vulnerable in receive mode:

10) lldpV2Xdot1RemPECascadePortPriority
11) lldpV2Xdot1RemPEAddress
12) lldpV2Xdot1RemPECSPAddress

D.4.5 IEEE 802.1 LLDP extension MIB module - version 2[51,52]

Delete the MIB module from D.4.5 and add the following MIB module:

```
LLDP-EXT-DOT1-V2-MIB DEFINITIONS ::= BEGIN

IMPORTS
    MODULE-IDENTITY,
    OBJECT-TYPE,
    Unsigned32
        FROM SNMPv2-SMI
    TruthValue,
    MacAddress,
    TEXTUAL-CONVENTION
        FROM SNMPv2-TC
    SnmpAdminString
        FROM SNMP-FRAMEWORK-MIB
    MODULE-COMPLIANCE,
    OBJECT-GROUP
        FROM SNMPv2-CONF
    ifGeneralInformationGroup
        FROM IF-MIB
    lldpV2Extensions,
    lldpV2LocPortIfIndex,
    lldpV2RemTimeMark,
    lldpV2RemLocalIfIndex,
    lldpV2RemLocalDestMACAddress,
    lldpV2RemIndex,
    lldpV2PortConfigEntry
        FROM LLDP-V2-MIB
    VlanId
        FROM Q-BRIDGE-MIB
    LldpV2LinkAggStatusMap
        FROM LLDP-V2-TC-MIB
    IEEE8021PriorityValue
        FROM IEEE8021-TC-MIB;

lldpV2Xdot1MIB MODULE-IDENTITY
    LAST-UPDATED "201106170000Z" -- June 17, 2011
    ORGANIZATION "IEEE 802.1 Working Group"
    CONTACT-INFO
           "WG-URL: http://grouper.ieee.org/groups/802/1/index.html
            WG-EMail: STDS-802-1-L@LISTSERV.IEEE.ORG

          Contact: Tony Jeffree
           Postal: C/O IEEE 802.1 Working Group
```

```
                IEEE Standards Association
                445 Hoes Lane
                P.O. Box 1331
                Piscataway
                NJ 08855-1331
                USA
          E-mail: STDS-802-1-L@LISTSERV.IEEE.ORG"
    DESCRIPTION
            "The LLDP Management Information Base extension module for
            IEEE 802.1 organizationally defined discovery information.

            In order to assure the uniqueness of the LLDP-V2-MIB,
            lldpV2Xdot1MIB is branched from lldpV2Extensions using an
            Organizationally Unique Identifier (OUI) value as the node.
            An OUI is a 24 bit globally unique number assigned by the
            IEEE Registration Authority - see:

            http://standards.ieee.org/develop/regauth/oui/index.html

            Unless otherwise indicated, the references in this
            MIB module are to IEEE Std 802.1Q-2011.

            Copyright (C) IEEE (2011).  This version of this MIB module
            is published as Annex D.4.5 of IEEE Std 802.1Qbh-2011;
            see the standard itself for full legal notices."


    REVISION "201106170000Z" -- June 17, 2011

    DESCRIPTION
            "Published as part of P802.1Qbh draft 2.1. No changes other
             than this text, the LAST-UPDATED clause, and some corrections
            to the DESCRIPTION."

    REVISION "201103310000Z" -- March 31, 2011

    DESCRIPTION
            "Published as part of P802.1Qbh draft 2.0. Adds the
            Port Extension objects to the MIB module"


    REVISION "201103250000Z" -- March 25, 2011

    DESCRIPTION
            "Published as part of IEEE Std 802.1Qaz-2011. Adds the DCBX
            objects to the MIB module"

    REVISION "201103230000Z" -- March 23, 2011

    DESCRIPTION
            "Published as part of IEEE Std 802.1Q-2011 revision.
            This revision contains changes associated with
            relocating the extension MIB from IEEE Std 802.1AB to
            IEEE Std 802.1Q, minor tweaks to the text of the
            DESCRIPTION statement above to fix references to
            IEEE Std 802.1Q, updating of references to refer to
            Annex D, and addition of object definitions for
            Congestion Notification TLVs and corresponding
            compliance statements."
```

```
    REVISION "200906080000Z" -- June 08, 2009

    DESCRIPTION
            "Published as part of IEEE Std 802.1AB-2009 revision.
            This revision incorporated changes to the MIB to
            support the use of LLDP with multiple destination MAC
            addresses, and to import the Link Aggregation TLV
            from the 802.3 extension MIB"

-- OUI for IEEE 802.1 is 32962 (00-80-C2)
   ::= { lldpV2Extensions 32962 }

-------------------------------------------------------------------------
-------------------------------------------------------------------------
--
-- Organizationally Defined Information Extension - IEEE 802.1
-- Definitions to support the basicSet TLV set (Table D-1)
--
-------------------------------------------------------------------------
-------------------------------------------------------------------------

lldpV2Xdot1Objects    OBJECT IDENTIFIER ::= { lldpV2Xdot1MIB 1 }

-- LLDP IEEE 802.1 extension MIB groups
lldpV2Xdot1Config     OBJECT IDENTIFIER ::= { lldpV2Xdot1Objects 1 }
lldpV2Xdot1LocalData  OBJECT IDENTIFIER ::= { lldpV2Xdot1Objects 2 }
lldpV2Xdot1RemoteData OBJECT IDENTIFIER ::= { lldpV2Xdot1Objects 3 }

-------------------------------------------------------------------------
-- IEEE 802.1 - Configuration for the basicSet TLV set
-------------------------------------------------------------------------

--
-- lldpV2Xdot1ConfigPortVlanTable : configure the transmission of the
--                                  Port VLAN-ID TLVs on set of ports.
--

lldpV2Xdot1ConfigPortVlanTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2Xdot1ConfigPortVlanEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "A table that controls selection of LLDP Port VLAN-ID TLVs
            to be transmitted on individual ports."
    ::= { lldpV2Xdot1Config 1 }

lldpV2Xdot1ConfigPortVlanEntry  OBJECT-TYPE
    SYNTAX      LldpV2Xdot1ConfigPortVlanEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "LLDP configuration information that controls the
            transmission of IEEE 802.1 organizationally defined Port
            VLAN-ID TLV on LLDP transmission capable ports.

            This configuration object augments the
            lldpV2PortConfigEntry of the LLDP-MIB, therefore it is only
            present along with the port configuration defined by the
```

```
            associated lldpV2PortConfigEntry entry.

            Each active lldpConfigEntry is restored from non-volatile
            storage (along with the corresponding
            lldpV2PortConfigEntry) after a re-initialization of the
            management system."
    AUGMENTS { lldpV2PortConfigEntry }
    ::= { lldpV2Xdot1ConfigPortVlanTable 1 }

LldpV2Xdot1ConfigPortVlanEntry ::= SEQUENCE {
      lldpV2Xdot1ConfigPortVlanTxEnable  TruthValue
}

lldpV2Xdot1ConfigPortVlanTxEnable OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
            "The lldpV2Xdot1ConfigPortVlanTxEnable, which is defined
            as a truth value and configured by the network management,
            determines whether the IEEE 802.1 organizationally defined
            port VLAN TLV transmission is allowed on a given LLDP
            transmission capable port.

            The value of this object is restored from non-volatile
            storage after a re-initialization of the management system."
    REFERENCE
            "9.1.2.1 of IEEE Std 802.1AB"
    DEFVAL  { false }
    ::= { lldpV2Xdot1ConfigPortVlanEntry 1 }


--
-- lldpV2Xdot1ConfigVlanNameTable : configure the transmission of the
--                                  VLAN name instances on set of ports.
--

lldpV2Xdot1ConfigVlanNameTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2Xdot1ConfigVlanNameEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "The table that controls selection of LLDP VLAN name TLV
            instances to be transmitted on individual ports."
    ::= { lldpV2Xdot1Config 2 }

lldpV2Xdot1ConfigVlanNameEntry  OBJECT-TYPE
    SYNTAX      LldpV2Xdot1ConfigVlanNameEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "LLDP configuration information that specifies the set of
            ports (represented as a PortList) on which the Local System
            VLAN name instance is transmitted.

            This configuration object augments the lldpV2LocVlanEntry,
            therefore it is only present along with the VLAN Name
            instance contained in the associated lldpV2LocVlanNameEntry
            entry.
```

```
            Each active lldpV2Xdot1ConfigVlanNameEntry is restored
            from non-volatile storage (along with the corresponding
            lldpV2Xdot1LocVlanNameEntry) after a re-initialization of
            the management system."
    AUGMENTS { lldpV2Xdot1LocVlanNameEntry }
    ::= { lldpV2Xdot1ConfigVlanNameTable 1 }



LldpV2Xdot1ConfigVlanNameEntry ::= SEQUENCE {
      lldpV2Xdot1ConfigVlanNameTxEnable  TruthValue
}

lldpV2Xdot1ConfigVlanNameTxEnable  OBJECT-TYPE
    SYNTAX        TruthValue
    MAX-ACCESS    read-write
    STATUS        current
    DESCRIPTION
            "The boolean value that indicates whether the corresponding
            Local System VLAN name instance is transmitted on the
            port defined by the given lldpV2Xdot1LocVlanNameEntry.

            The value of this object is restored from non-volatile
            storage after a re-initialization of the management
            system."
    REFERENCE
            "9.1.2.1 of IEEE Std 802.1AB"
    DEFVAL  { false }
    ::= { lldpV2Xdot1ConfigVlanNameEntry 1 }


--
-- lldpV2Xdot1ConfigProtoVlanTable : configure the transmission of the
--                                   protocol VLAN instances on set
--                                   of ports.
--

lldpV2Xdot1ConfigProtoVlanTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2Xdot1ConfigProtoVlanEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "The table that controls selection of LLDP Port and
            Protocol VLAN ID TLV instances to be transmitted on
            individual ports."
    ::= { lldpV2Xdot1Config 3 }

lldpV2Xdot1ConfigProtoVlanEntry  OBJECT-TYPE
    SYNTAX      LldpV2Xdot1ConfigProtoVlanEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "LLDP configuration information that specifies the set of
            ports (represented as a PortList) on which the Local System
            Protocol VLAN instance is transmitted.

            This configuration object augments the
            lldpV2Xdot1LocVlanEntry, therefore it is only present along
```

```
            with the Port and Protocol VLAN ID instance contained in
            the associated lldpV2Xdot1LocVlanEntry entry.

            Each active lldpV2Xdot1ConfigProtoVlanEntry is restored
            from non-volatile storage (along with the corresponding
            lldpV2Xdot1LocProtoVlanEntry) after a re-initialization of
            the management system."

    AUGMENTS { lldpV2Xdot1LocProtoVlanEntry }
    ::= { lldpV2Xdot1ConfigProtoVlanTable 1 }


LldpV2Xdot1ConfigProtoVlanEntry ::= SEQUENCE {
      lldpV2Xdot1ConfigProtoVlanTxEnable   TruthValue
}

lldpV2Xdot1ConfigProtoVlanTxEnable OBJECT-TYPE
    SYNTAX        TruthValue
    MAX-ACCESS    read-write
    STATUS        current
    DESCRIPTION
            "The boolean value that indicates whether the corresponding
            Local System Port and Protocol VLAN instance is
            transmitted on the port defined by the given
            lldpV2Xdot1LocProtoVlanEntry.

            The value of this object is restored from non-volatile
            storage after a re-initialization of the management system."
    REFERENCE
            "9.1.2.1 of IEEE Std 802.1AB"
    DEFVAL  { false }
    ::= { lldpV2Xdot1ConfigProtoVlanEntry 1 }


--
-- lldpV2Xdot1ConfigProtocolTable : configure the transmission of the
--                                  protocol instances on set
--                                  of ports.
--

lldpV2Xdot1ConfigProtocolTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2Xdot1ConfigProtocolEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "The table that controls selection of LLDP Protocol
            TLV instances to be transmitted on individual ports."
    ::= { lldpV2Xdot1Config 4 }

lldpV2Xdot1ConfigProtocolEntry  OBJECT-TYPE
    SYNTAX      LldpV2Xdot1ConfigProtocolEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "LLDP configuration information that specifies the set of
            ports (represented as a PortList) on which the Local System
            Protocol instance is transmitted.

            This configuration object augments the
```

```
            lldpV2Xdot1LocProtoEntry, therefore it is only present
            along with the Protocol instance contained in the
            associated lldpV2Xdot1LocProtoEntry entry.

            Each active lldpV2Xdot1ConfigProtocolEntry is restored
            from non-volatile storage (along with the corresponding
            lldpV2Xdot1LocProtocolEntry) after a re-initialization of
            the management system."
    AUGMENTS { lldpV2Xdot1LocProtocolEntry }
    ::= { lldpV2Xdot1ConfigProtocolTable 1 }


LldpV2Xdot1ConfigProtocolEntry ::= SEQUENCE {
      lldpV2Xdot1ConfigProtocolTxEnable   TruthValue
}

lldpV2Xdot1ConfigProtocolTxEnable  OBJECT-TYPE
    SYNTAX        TruthValue
    MAX-ACCESS    read-write
    STATUS        current
    DESCRIPTION
            "The boolean value that indicates whether the corresponding
            Local System Protocol Identity instance is transmitted
            on the port defined by the given
            lldpV2Xdot1LocProtocolEntry.

            The value of this object is restored from non-volatile
            storage after a re-initialization of the management
            system."
    REFERENCE
            "9.1.2.1 of IEEE Std 802.1AB"
    DEFVAL  { false }
    ::= { lldpV2Xdot1ConfigProtocolEntry 1 }

--
-- lldpV2Xdot1ConfigVidUsageDigestTable: configure the transmission
-- of the VID Usage Digest TLVs on set of ports.
--
lldpV2Xdot1ConfigVidUsageDigestTable OBJECT-TYPE
     SYNTAX SEQUENCE OF LldpV2Xdot1ConfigVidUsageDigestEntry
     MAX-ACCESS not-accessible
     STATUS current
     DESCRIPTION
          "A table that controls selection of LLDP VID Usage Digest
          TLVs to be transmitted on individual ports."
::= { lldpV2Xdot1Config 5 }

lldpV2Xdot1ConfigVidUsageDigestEntry OBJECT-TYPE
     SYNTAX LldpV2Xdot1ConfigVidUsageDigestEntry
     MAX-ACCESS not-accessible
     STATUS current
     DESCRIPTION
          "LLDP configuration information that specifies the set of
          ports (represented as a PortList) on which the local
          system VID Usage Digest instance will be transmitted.
          This configuration object augments the
          lldpLocVidUsageDigestEntry, therefore it is only present
          along with the VID Usage Digest instance
          contained in the associated lldpV2Xdot1LocVidUsageDigestEntry
```

```
          entry. Each active lldpConfigVidUsageDigestEntry must be
          restored from non-volatile storage and re-created (along with
          the corresponding lldpV2Xdot1LocVidUsageDigestEntry) after
          a re-initialization of the management system."
     AUGMENTS { lldpV2Xdot1LocVidUsageDigestEntry }
::= { lldpV2Xdot1ConfigVidUsageDigestTable 1 }

LldpV2Xdot1ConfigVidUsageDigestEntry ::= SEQUENCE {
     lldpV2Xdot1ConfigVidUsageDigestTxEnable TruthValue
     }

lldpV2Xdot1ConfigVidUsageDigestTxEnable OBJECT-TYPE
     SYNTAX TruthValue
     MAX-ACCESS read-write
     STATUS current
     DESCRIPTION
          "The boolean value that indicates whether the corresponding
          Local System VID Usage Digest instance will be transmitted
          on the port defined by the given
          lldpV2Xdot1LocVidUsageDigestEntry. The value of this object
          must be restored from non-volatile storage after a
          reinitialization of the management system."
     REFERENCE
          "9.1.2.1 of IEEE Std 802.1AB"
     DEFVAL { false }
::= { lldpV2Xdot1ConfigVidUsageDigestEntry 1 }


--
-- lldpV2Xdot1ConfigManVidTable : configure the transmission of the
-- Management VID TLVs on set of ports.
--
lldpV2Xdot1ConfigManVidTable OBJECT-TYPE
     SYNTAX SEQUENCE OF LldpV2Xdot1ConfigManVidEntry
     MAX-ACCESS not-accessible
     STATUS current
     DESCRIPTION
          "A table that controls selection of LLDP Management VID
          TLVs to be transmitted on individual ports."
::= { lldpV2Xdot1Config 6 }

lldpV2Xdot1ConfigManVidEntry OBJECT-TYPE
     SYNTAX LldpV2Xdot1ConfigManVidEntry
     MAX-ACCESS not-accessible
     STATUS current
     DESCRIPTION
          "LLDP configuration information that specifies the set of
          port/destination address pairs on which the Local
          System Management VID will be transmitted.
          This configuration object augments the
          lldpV2Xdot1LocManVidEntry, therefore it is
          only present along with the Management VID contained
          in the associated lldpV2Xdot1LocManVidEntry entry.
          Each active lldpV2Xdot1ConfigManVidEntry must be
          restored from non-volatile storage (along with the
          corresponding lldpV2Xdot1LocManVidEntry) after a
          re-initialization of the management system."
     AUGMENTS { lldpV2Xdot1LocManVidEntry }
::= { lldpV2Xdot1ConfigManVidTable 1 }
```

```
LldpV2Xdot1ConfigManVidEntry ::= SEQUENCE {
     lldpV2Xdot1ConfigManVidTxEnable TruthValue
     }

lldpV2Xdot1ConfigManVidTxEnable OBJECT-TYPE
     SYNTAX TruthValue
     MAX-ACCESS read-write
     STATUS current
     DESCRIPTION
          "The lldpV2Xdot1ConfigManVidTxEnable, which is defined as a
          truth value and configured by the network management,
          determines whether the IEEE 802.1 organizationally
          defined Management VID TLV transmission is allowed on a given
          LLDP transmission capable port.
          The value of this object must be restored from
          non-volatile storage after a re-initialization of the
          management system."
     REFERENCE
          "9.1.2.1 of IEEE Std 802.1AB"
     DEFVAL { false }
::= { lldpV2Xdot1ConfigManVidEntry 1 }


--------------------------------------------------------------------------
-- IEEE 802.1 - Local System Information
--------------------------------------------------------------------------

--
-- lldpV2Xdot1LocTable - indexed by ifIndex.
--

lldpV2Xdot1LocTable  OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2Xdot1LocEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "This table contains one row per port for IEEE 802.1
            organizationally defined LLDP extension on the local system
            known to this agent."
    ::= { lldpV2Xdot1LocalData 1 }

lldpV2Xdot1LocEntry  OBJECT-TYPE
    SYNTAX      LldpV2Xdot1LocEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "Information about IEEE 802.1 organizationally defined
            LLDP extension."
    INDEX   { lldpV2LocPortIfIndex }
    ::= { lldpV2Xdot1LocTable 1 }

LldpV2Xdot1LocEntry ::= SEQUENCE {
         lldpV2Xdot1LocPortVlanId       Unsigned32
}

lldpV2Xdot1LocPortVlanId OBJECT-TYPE
    SYNTAX      Unsigned32(0|1..4094)
    MAX-ACCESS  read-only
```

```
    STATUS      current
    DESCRIPTION
            "The integer value used to identify the port's VLAN
            identifier associated with the local system.   A value
            of zero shall be used if the system either does not know
            the PVID or does
            not support port-based VLAN operation."
    REFERENCE
            "D.2.1.1"
    ::= { lldpV2Xdot1LocEntry 1 }



--
-- lldpV2Xdot1LocProtoVlanTable: Port and Protocol VLAN information
-- re-indexed by ifIndex.
--

lldpV2Xdot1LocProtoVlanTable  OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2Xdot1LocProtoVlanEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "This table contains one or more rows per Port and Protocol
            VLAN information about the local system."
    ::= { lldpV2Xdot1LocalData 2 }

lldpV2Xdot1LocProtoVlanEntry OBJECT-TYPE
    SYNTAX      LldpV2Xdot1LocProtoVlanEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "Port and protocol VLAN ID Information about a particular
            port component.  There may be multiple port and protocol
            VLANs, identified by a particular
            lldpV2Xdot1LocProtoVlanId, configured on the given port."
    INDEX   { lldpV2LocPortIfIndex,
              lldpV2Xdot1LocProtoVlanId }
    ::= { lldpV2Xdot1LocProtoVlanTable 1 }

LldpV2Xdot1LocProtoVlanEntry ::= SEQUENCE {
      lldpV2Xdot1LocProtoVlanId        Unsigned32,
      lldpV2Xdot1LocProtoVlanSupported TruthValue,
      lldpV2Xdot1LocProtoVlanEnabled   TruthValue
}

lldpV2Xdot1LocProtoVlanId  OBJECT-TYPE
    SYNTAX      Unsigned32(0|1..4094)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "The integer value used to identify the port and protocol
            VLANs associated with the given port associated with the
            local system.  A value of zero shall be used if the system
            either does not know the protocol VLAN ID (PPVID) or does
            not support port and protocol VLAN operation."
    REFERENCE
            "D.2.2.2"
    ::= { lldpV2Xdot1LocProtoVlanEntry 1 }
```

```
lldpV2Xdot1LocProtoVlanSupported  OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "The truth value used to indicate whether the given port
            (associated with the local system) supports port and
            protocol VLANs."
    REFERENCE
            "D.2.2.1"
    ::= { lldpV2Xdot1LocProtoVlanEntry 2 }

lldpV2Xdot1LocProtoVlanEnabled  OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "The truth value used to indicate whether the port and
            protocol VLANs are enabled on the given port associated
            with the local system."
    REFERENCE
            "D.2.2.1"
    ::= { lldpV2Xdot1LocProtoVlanEntry 3 }




--
-- lldpV2Xdot1LocVlanNameTable : VLAN name information about the local
-- system indexed by ifIndex.
--

lldpV2Xdot1LocVlanNameTable  OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2Xdot1LocVlanNameEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "This table contains one or more rows per IEEE 802.1Q VLAN
            name information on the local system known to this agent."
    ::= { lldpV2Xdot1LocalData 3 }

lldpV2Xdot1LocVlanNameEntry OBJECT-TYPE
    SYNTAX      LldpV2Xdot1LocVlanNameEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "VLAN name Information about a particular port component.
            There may be multiple VLANs, identified by a particular
            lldpV2Xdot1LocVlanId, configured on the given port."
    INDEX   { lldpV2LocPortIfIndex,
              lldpV2Xdot1LocVlanId }
    ::= { lldpV2Xdot1LocVlanNameTable 1 }

LldpV2Xdot1LocVlanNameEntry ::= SEQUENCE {
      lldpV2Xdot1LocVlanId             VlanId,
      lldpV2Xdot1LocVlanName           SnmpAdminString
}

lldpV2Xdot1LocVlanId  OBJECT-TYPE
```

```
        SYNTAX      VlanId
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
                "The integer value used to identify the IEEE 802.1Q
                VLAN IDs with which the given port is compatible."
        REFERENCE
                "D.2.3.2"
        ::= { lldpV2Xdot1LocVlanNameEntry 1 }

    lldpV2Xdot1LocVlanName  OBJECT-TYPE
        SYNTAX      SnmpAdminString (SIZE(1..32))
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
                "The string value used to identify VLAN name identified
                by the Vlan Id associated with the given port on the
                local system.

                This object should contain the value of the
                dot1QVLANStaticName object (defined in IETF RFC 4363)
                identified with the given lldpV2Xdot1LocVlanId."
        REFERENCE
                "D.2.3.4"
        ::= { lldpV2Xdot1LocVlanNameEntry 2 }




    --
    -- lldpV2Xdot1LocProtocolTable : Protocol Identity information
    -- re-indexed by ifIndex and destination address
    --

    lldpV2Xdot1LocProtocolTable  OBJECT-TYPE
        SYNTAX      SEQUENCE OF LldpV2Xdot1LocProtocolEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
                "This table contains one or more rows per protocol identity
                information on the local system known to this agent."
        REFERENCE
                "D.2.4"
        ::= { lldpV2Xdot1LocalData 4 }

    lldpV2Xdot1LocProtocolEntry  OBJECT-TYPE
        SYNTAX      LldpV2Xdot1LocProtocolEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
                "Information about particular protocols that are accessible
                through the given port component.

                There may be multiple protocols, identified by particular
                lldpV2Xdot1ProtocolIndex, lldpV2LocPortIfIndex"
        REFERENCE
                "D.2.4"
        INDEX   { lldpV2LocPortIfIndex,
                  lldpV2Xdot1LocProtocolIndex }
        ::= { lldpV2Xdot1LocProtocolTable 1 }
```

```
LldpV2Xdot1LocProtocolEntry ::= SEQUENCE {
      lldpV2Xdot1LocProtocolIndex Unsigned32,
      lldpV2Xdot1LocProtocolId    OCTET STRING
}


lldpV2Xdot1LocProtocolIndex  OBJECT-TYPE
    SYNTAX      Unsigned32(1..2147483647)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "This object represents an arbitrary local integer value
            used by this agent to identify a particular protocol
            identity."
    ::= { lldpV2Xdot1LocProtocolEntry 1 }

lldpV2Xdot1LocProtocolId  OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE (1..255))
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "The octet string value used to identify the protocols
            associated with the given port of the local system."
    REFERENCE
            "D.2.4.3"
    ::= { lldpV2Xdot1LocProtocolEntry 2 }

--
-- lldpV2Xdot1LocVidUsageDigestTable: Table of hash values of
-- system VID Usage Table transmitted
-- via VID Usage Digest TLV.
--


lldpV2Xdot1LocVidUsageDigestTable  OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2Xdot1LocVidUsageDigestEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "This table contains one row per ifIndex/
            destination MAC address pair for usage digest
            information on the local system known to this agent."
    REFERENCE
            "D.2.5"
    ::= { lldpV2Xdot1LocalData 5 }

lldpV2Xdot1LocVidUsageDigestEntry  OBJECT-TYPE
    SYNTAX      LldpV2Xdot1LocVidUsageDigestEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "Usage digest information to be transmitted
            through the given port."
    REFERENCE
            "D.2.5"
    INDEX   { lldpV2LocPortIfIndex }
    ::= { lldpV2Xdot1LocVidUsageDigestTable 1 }
```

```
LldpV2Xdot1LocVidUsageDigestEntry ::= SEQUENCE {
      lldpV2Xdot1LocVidUsageDigest Unsigned32
}


lldpV2Xdot1LocVidUsageDigest OBJECT-TYPE
    SYNTAX Unsigned32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The integer value obtained by applying the CRC32 function
        to the 128-octet VID Usage Table. A bit of the VID Usage
        Table contains the value PBB-TE-USAGE (binary 1) if the
        corresponding element of the MST Configuration Table
        (IEEE Std 802.1Q 8.9.1) contains the value PBB-TE MSTID
        (hex FFE) and otherwise contains the value NON-PBB-TE-USAGE
        (binary 0)."
    REFERENCE
        "D.2.5.1"
::= { lldpV2Xdot1LocVidUsageDigestEntry 1 }

--
-- lldpV2Xdot1LocManVidTable: Table of values configured on the Local
-- system for the Management VID, or the value 0 if a Management VID
-- has not been provisioned.
--

lldpV2Xdot1LocManVidTable  OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2Xdot1LocManVidEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "This table contains one row per ifIndex/
            destination MAC address pair for usage digest
            information on the local system known to this agent."
    REFERENCE
            "D.2.6"
    ::= { lldpV2Xdot1LocalData 6 }

lldpV2Xdot1LocManVidEntry  OBJECT-TYPE
    SYNTAX      LldpV2Xdot1LocManVidEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "Usage digest information to be transmitted
            through the given port."
    REFERENCE
            "D.2.6"
    INDEX   { lldpV2LocPortIfIndex }
    ::= { lldpV2Xdot1LocManVidTable 1 }

LldpV2Xdot1LocManVidEntry ::= SEQUENCE {
      lldpV2Xdot1LocManVid Unsigned32
}

lldpV2Xdot1LocManVid OBJECT-TYPE
    SYNTAX Unsigned32 (0|1..4094)
    MAX-ACCESS read-only
    STATUS current
```

```
    DESCRIPTION
        "The integer value configured on the Local system for
        the Management VID, or
        the value 0 if a Management VID has not been provisioned."
    REFERENCE
        "D.2.6.1"
::= { lldpV2Xdot1LocManVidEntry 1 }


-----------------------------------------------------------------------
-- IEEE 802.1 - Local System Information - Link Aggregation
-----------------------------------------------------------------------

---
---
--- lldpV2Xdot1LocLinkAggTable: Link Aggregation Information Table
---
---
lldpV2Xdot1LocLinkAggTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2Xdot1LocLinkAggEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "This table contains one row per port of link aggregation
            information (as a part of the LLDP 802.1 organizational
            extension) on the local system known to this agent."
    ::= { lldpV2Xdot1LocalData 7 }

lldpV2Xdot1LocLinkAggEntry OBJECT-TYPE
    SYNTAX      LldpV2Xdot1LocLinkAggEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "Link Aggregation information about a particular port
            component."
    INDEX   { lldpV2LocPortIfIndex }
    ::= { lldpV2Xdot1LocLinkAggTable 1 }

LldpV2Xdot1LocLinkAggEntry ::= SEQUENCE {
      lldpV2Xdot1LocLinkAggStatus       LldpV2LinkAggStatusMap,
      lldpV2Xdot1LocLinkAggPortId       Unsigned32
}

lldpV2Xdot1LocLinkAggStatus OBJECT-TYPE
    SYNTAX      LldpV2LinkAggStatusMap
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "The bitmap value contains the link aggregation
            capabilities and the current aggregation status of the
            link."
    REFERENCE
            "D.2.7.1"
    ::= { lldpV2Xdot1LocLinkAggEntry 1 }

lldpV2Xdot1LocLinkAggPortId OBJECT-TYPE
    SYNTAX      Unsigned32(0|1..2147483647)
    MAX-ACCESS  read-only
    STATUS      current
```

```
        DESCRIPTION
                "This object contains the IEEE 802.1 aggregated port
                identifier, aAggPortID (IEEE Std 802.1AX, 6.3.2.1.1),
                derived from the ifNumber of the  ifIndex for the port
                component in link aggregation.

                If the port is not in link aggregation state and/or it
                does not support link aggregation, this value should be set
                to zero."
        REFERENCE
                "D.2.7.1"
        ::= { lldpV2Xdot1LocLinkAggEntry 2 }



-- ----------------------------------------------------------------------
-- IEEE 802.1 - Remote System Information
-- ----------------------------------------------------------------------

--
-- lldpV2Xdot1RemTable - re-indexed for ifIndex and destination MAC
-- address

lldpV2Xdot1RemTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2Xdot1RemEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "This table contains one or more rows per physical network
            connection known to this agent.  The agent may wish to
            ensure that only one lldpV2Xdot1RemEntry is present for
            each local port, or it may choose to maintain multiple
            lldpV2Xdot1RemEntries for the same local port."
    ::= { lldpV2Xdot1RemoteData 1 }

lldpV2Xdot1RemEntry OBJECT-TYPE
    SYNTAX      LldpV2Xdot1RemEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "Information about a particular port component."
    INDEX   { lldpV2RemTimeMark,
              lldpV2RemLocalIfIndex,
              lldpV2RemLocalDestMACAddress,
              lldpV2RemIndex }
    ::= { lldpV2Xdot1RemTable 1 }

LldpV2Xdot1RemEntry ::= SEQUENCE {
            lldpV2Xdot1RemPortVlanId           Unsigned32
}

lldpV2Xdot1RemPortVlanId OBJECT-TYPE
    SYNTAX      Unsigned32(0|1..4094)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "The integer value used to identify the port's VLAN
            identifier associated with the remote system.  if the
            remote system either does not know the PVID or does not
```

```
            support port-based VLAN operation, the value of
            lldpV2Xdot1RemPortVlanId should be zero."
    REFERENCE
            "D.2.1.1"
    ::= { lldpV2Xdot1RemEntry 1 }



--
-- lldpV2Xdot1RemProtoVlanTable - re-indexed by ifIndex and
-- destination MAC address
--

lldpV2Xdot1RemProtoVlanTable  OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2Xdot1RemProtoVlanEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "This table contains one or more rows per Port and Protocol
            VLAN information about the remote system, received on the
            given port."
    ::= { lldpV2Xdot1RemoteData 2 }

lldpV2Xdot1RemProtoVlanEntry OBJECT-TYPE
    SYNTAX      LldpV2Xdot1RemProtoVlanEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "Port and protocol VLAN name Information about a particular
            port component.  There may be multiple protocol VLANs,
            identified by a particular lldpV2Xdot1RemProtoVlanId,
            configured on the remote system."
    INDEX   { lldpV2RemTimeMark,
              lldpV2RemLocalIfIndex,
              lldpV2RemLocalDestMACAddress,
              lldpV2RemIndex,
              lldpV2Xdot1RemProtoVlanId }
    ::= { lldpV2Xdot1RemProtoVlanTable 1 }

LldpV2Xdot1RemProtoVlanEntry ::= SEQUENCE {
            lldpV2Xdot1RemProtoVlanId          Unsigned32,
            lldpV2Xdot1RemProtoVlanSupported   TruthValue,
            lldpV2Xdot1RemProtoVlanEnabled     TruthValue
}

lldpV2Xdot1RemProtoVlanId  OBJECT-TYPE
    SYNTAX      Unsigned32(0|1..4094)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "The integer value used to identify the port and protocol
            VLANs associated with the given port associated with the
            remote system.

            If port and protocol VLANs are not supported on the given
            port associated with the remote system, or if the port is
            not enabled with any port and protocol VLAN, the value of
            lldpV2Xdot1RemProtoVlanId should be zero."
    REFERENCE
```

```
            "D.2.2.2"
    ::= { lldpV2Xdot1RemProtoVlanEntry 1 }

lldpV2Xdot1RemProtoVlanSupported  OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "The truth value used to indicate whether the given port
            (associated with the remote system) is capable of
            supporting port and protocol VLANs."
    REFERENCE
            "D.2.2.1"
    ::= { lldpV2Xdot1RemProtoVlanEntry 2 }

lldpV2Xdot1RemProtoVlanEnabled  OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "The truth value used to indicate whether the port and
            protocol VLANs are enabled on the given port associated
            with
            the remote system."
    REFERENCE
            "D.2.2.1"
    ::= { lldpV2Xdot1RemProtoVlanEntry 3 }



--
-- lldpV2Xdot1RemVlanNameTable : VLAN name information of the remote
--                               systems
-- Re-indexed by ifIndex and destination MAC address
--

lldpV2Xdot1RemVlanNameTable  OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2Xdot1RemVlanNameEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "This table contains one or more rows per IEEE 802.1Q VLAN
            name information about the remote system, received on the
            given port."
    REFERENCE
            "D.2.3"
    ::= { lldpV2Xdot1RemoteData 3 }

lldpV2Xdot1RemVlanNameEntry OBJECT-TYPE
    SYNTAX      LldpV2Xdot1RemVlanNameEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "VLAN name Information about a particular port component.
            There may be multiple VLANs, identified by a particular
            lldpV2Xdot1RemVlanId, received on the given port."
    INDEX   { lldpV2RemTimeMark,
              lldpV2RemLocalIfIndex,
              lldpV2RemLocalDestMACAddress,
```

```
                lldpV2RemIndex,
                lldpV2Xdot1RemVlanId }
    ::= { lldpV2Xdot1RemVlanNameTable 1 }

LldpV2Xdot1RemVlanNameEntry ::= SEQUENCE {
            lldpV2Xdot1RemVlanId       VlanId,
            lldpV2Xdot1RemVlanName     SnmpAdminString
}


lldpV2Xdot1RemVlanId  OBJECT-TYPE
    SYNTAX      VlanId
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "The integer value used to identify the IEEE 802.1Q
            VLAN IDs with which the given port of the remote system
            is compatible."
    REFERENCE
            "D.2.3.2"
    ::= { lldpV2Xdot1RemVlanNameEntry 1 }

lldpV2Xdot1RemVlanName  OBJECT-TYPE
    SYNTAX      SnmpAdminString (SIZE(1..32))
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "The string value used to identify VLAN name identified
            by the VLAN Id associated with the remote system."
    REFERENCE
            "D.2.3.4"
    ::= { lldpV2Xdot1RemVlanNameEntry 2 }



--
-- lldpV2Xdot1RemProtocolTable : Protocol information of the remote
-- systems Re-indexed by ifIndex and destination MAC address
--

lldpV2Xdot1RemProtocolTable  OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2Xdot1RemProtocolEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "This table contains one or more rows per protocol
            information about the remote system, received on
            the given port."
    ::= { lldpV2Xdot1RemoteData 4 }

lldpV2Xdot1RemProtocolEntry  OBJECT-TYPE
    SYNTAX      LldpV2Xdot1RemProtocolEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "Protocol information about a particular port component.
            There may be multiple protocols, identified by a particular
            lldpV2Xdot1ProtocolIndex, received on the given port."
    INDEX   { lldpV2RemTimeMark,
```

```
                lldpV2RemLocalIfIndex,
                lldpV2RemLocalDestMACAddress,
                lldpV2RemIndex,
                lldpV2Xdot1RemProtocolIndex }
    ::= { lldpV2Xdot1RemProtocolTable 1 }

LldpV2Xdot1RemProtocolEntry ::= SEQUENCE {
            lldpV2Xdot1RemProtocolIndex     Unsigned32,
            lldpV2Xdot1RemProtocolId        OCTET STRING
}

lldpV2Xdot1RemProtocolIndex  OBJECT-TYPE
    SYNTAX      Unsigned32(1..2147483647)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "This object represents an arbitrary local integer value
            used by this agent to identify a particular protocol
            identity."
    ::= { lldpV2Xdot1RemProtocolEntry 1 }

lldpV2Xdot1RemProtocolId  OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE (1..255))
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "The octet string value used to identify the protocols
            associated with the given port of remote system."
    REFERENCE
            "D.2.4.3"
    ::= { lldpV2Xdot1RemProtocolEntry 2 }



--
-- lldpV2Xdot1RemVidUsageDigestTable: Table of hash values of
-- system VID Usage Table received
-- via VID Usage Digest TLV.
--


lldpV2Xdot1RemVidUsageDigestTable  OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2Xdot1RemVidUsageDigestEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "This table contains one row per ifIndex/
            destination MAC address pair for usage digest
            information received by the local system."
    REFERENCE
            "D.2.5"
    ::= { lldpV2Xdot1RemoteData 5 }

lldpV2Xdot1RemVidUsageDigestEntry  OBJECT-TYPE
    SYNTAX      LldpV2Xdot1RemVidUsageDigestEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "Usage digest information received on
```

```
            the given port/destination address pair."
    REFERENCE
            "D.2.5"
    INDEX   { lldpV2RemTimeMark,
              lldpV2RemLocalIfIndex,
              lldpV2RemLocalDestMACAddress }
    ::= { lldpV2Xdot1RemVidUsageDigestTable 1 }

LldpV2Xdot1RemVidUsageDigestEntry ::= SEQUENCE {
      lldpV2Xdot1RemVidUsageDigest  Unsigned32
}


lldpV2Xdot1RemVidUsageDigest OBJECT-TYPE
    SYNTAX Unsigned32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The integer value obtained by applying the CRC32 function
        to the 128-octet VID Usage Table. A bit of the VID Usage
        Table contains the value PBB-TE-USAGE (binary 1) if the
        corresponding element of the MST Configuration Table
        (IEEE Std 802.1Q 8.9.1) contains the value PBB-TE MSTID
        (hex FFE)and otherwise contains the value NON-PBB-TE-USAGE
        (binary 0)."
    REFERENCE
        "D.2.5.1"
::= { lldpV2Xdot1RemVidUsageDigestEntry 1 }

--
-- lldpV2Xdot1RemManVidTable: Table of values configured on remote
-- systems for the Management VID, or the value 0 if a Management
-- VID has not been provisioned.
--

lldpV2Xdot1RemManVidTable  OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2Xdot1RemManVidEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "This table contains one row per ifIndex/
            destination MAC address pair for management VID
            information received from remote systems."
    REFERENCE
            "D.2.6"
    ::= { lldpV2Xdot1RemoteData 6 }

lldpV2Xdot1RemManVidEntry  OBJECT-TYPE
    SYNTAX      LldpV2Xdot1RemManVidEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "Management VID information received
            through the given port/destination address pair."
    REFERENCE
            "D.2.6"
    INDEX   { lldpV2RemTimeMark,
              lldpV2RemLocalIfIndex,
              lldpV2RemLocalDestMACAddress }
```

```
    ::= { lldpV2Xdot1RemManVidTable 1 }

LldpV2Xdot1RemManVidEntry ::= SEQUENCE {
      lldpV2Xdot1RemManVid            Unsigned32
}

lldpV2Xdot1RemManVid OBJECT-TYPE
    SYNTAX Unsigned32 (0|1..4094)
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The integer value configured on a system for
        the Management VID, or
        the value 0 if a Management VID has not been provisioned."
    REFERENCE
        "D.2.6.1"
::= { lldpV2Xdot1RemManVidEntry 1 }



-----------------------------------------------------------------------
-- Remote System Information - Link Aggregation
-----------------------------------------------------------------------

---
---
--- lldpV2Xdot1RemLinkAggTable: Link Aggregation Information Table
---
---
lldpV2Xdot1RemLinkAggTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2Xdot1RemLinkAggEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "This table contains port link aggregation information
            (as a part of the LLDP IEEE 802.1 organizational extension)
            of the remote system."
    ::= { lldpV2Xdot1RemoteData 7 }

lldpV2Xdot1RemLinkAggEntry OBJECT-TYPE
    SYNTAX      LldpV2Xdot1RemLinkAggEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "Link Aggregation information about remote system's port
            component."
    INDEX   { lldpV2RemTimeMark,
              lldpV2RemLocalIfIndex,
              lldpV2RemLocalDestMACAddress,
              lldpV2RemIndex }
    ::= { lldpV2Xdot1RemLinkAggTable 1 }

LldpV2Xdot1RemLinkAggEntry ::= SEQUENCE {
            lldpV2Xdot1RemLinkAggStatus        LldpV2LinkAggStatusMap,
            lldpV2Xdot1RemLinkAggPortId        Unsigned32
}

lldpV2Xdot1RemLinkAggStatus OBJECT-TYPE
    SYNTAX      LldpV2LinkAggStatusMap
```

```
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "The bitmap value contains the link aggregation capabilities
            and the current aggregation status of the link."
    REFERENCE
            "D.2.7.1"
    ::= { lldpV2Xdot1RemLinkAggEntry 1 }

lldpV2Xdot1RemLinkAggPortId OBJECT-TYPE
    SYNTAX      Unsigned32(0|1..2147483647)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "This object contains the IEEE 802.1 aggregated port
            identifier, aAggPortID (IEEE Std 802.1AX, 6.3.2.1.1),
            derived from the ifNumber of the  ifIndex for the port
            component associated with the remote system.

            If the remote port is not in link aggregation state and/or
            it does not support link aggregation, this value should be
            zero."
    REFERENCE
            "D.2.7.1"
    ::= { lldpV2Xdot1RemLinkAggEntry 2 }


--------------------------------------------------------------------------
-- Conformance Information for the basicSet TLV set
--------------------------------------------------------------------------

lldpV2Xdot1Conformance
    OBJECT IDENTIFIER ::= { lldpV2Xdot1MIB 2 }
lldpV2Xdot1Compliances
    OBJECT IDENTIFIER ::= { lldpV2Xdot1Conformance 1 }
lldpV2Xdot1Groups
    OBJECT IDENTIFIER ::= { lldpV2Xdot1Conformance 2 }

-- compliance statements


lldpV2Xdot1TxRxCompliance MODULE-COMPLIANCE
    STATUS  current
    DESCRIPTION
            "A compliance statement for SNMP entities that implement
            the IEEE 802.1 organizationally defined LLDP extension MIB.

            This group is mandatory for all agents that implement the
            LLDP 802.1 organizational extension in TX and/or RX mode
            for the basicSet TLV set.

            This version defines compliance requirements for
            V2 of the LLDP MIB."
    MODULE  -- this module
        MANDATORY-GROUPS { lldpV2Xdot1ConfigGroup,
                           ifGeneralInformationGroup
        }
    ::= { lldpV2Xdot1Compliances 1 }
```

```
lldpV2Xdot1TxCompliance MODULE-COMPLIANCE
    STATUS  current
    DESCRIPTION
            "A compliance statement for SNMP entities that implement
            the IEEE 802.1 organizationally defined LLDP extension MIB.

            This group is mandatory for agents that implement the
            LLDP 802.1 organizational extension in the RX mode
            for the basicSet TLV set.

            This version defines compliance requirements for
            V2 of the LLDP MIB."
    MODULE  -- this module
        MANDATORY-GROUPS { lldpV2Xdot1LocSysGroup }

    ::= { lldpV2Xdot1Compliances 2 }

lldpV2Xdot1RxCompliance MODULE-COMPLIANCE
    STATUS  current
    DESCRIPTION
            "A compliance statement for SNMP entities that implement
            the IEEE 802.1 organizationally defined LLDP extension MIB.

            This group is mandatory for agents that implement the
            LLDP 802.1 organizational extension in the RX mode
            for the basicSet TLV set.

            This version defines compliance requirements for
            V2 of the LLDP MIB."
    MODULE  -- this module
        MANDATORY-GROUPS { lldpV2Xdot1RemSysGroup }

    ::= { lldpV2Xdot1Compliances 3 }

-- MIB groupings for the basicSet TLV set

lldpV2Xdot1ConfigGroup    OBJECT-GROUP
    OBJECTS {
        lldpV2Xdot1ConfigPortVlanTxEnable,
        lldpV2Xdot1ConfigVlanNameTxEnable,
        lldpV2Xdot1ConfigProtoVlanTxEnable,
        lldpV2Xdot1ConfigProtocolTxEnable,
        lldpV2Xdot1ConfigVidUsageDigestTxEnable,
        lldpV2Xdot1ConfigManVidTxEnable
    }
    STATUS  current
    DESCRIPTION
            "The collection of objects which are used to configure the
            IEEE 802.1 organizationally defined LLDP extension
            implementation behavior for the basicSet TLV set."
    ::= { lldpV2Xdot1Groups 1 }

lldpV2Xdot1LocSysGroup  OBJECT-GROUP
    OBJECTS {
        lldpV2Xdot1LocPortVlanId,
        lldpV2Xdot1LocProtoVlanSupported,
        lldpV2Xdot1LocProtoVlanEnabled,
        lldpV2Xdot1LocVlanName,
```

```
        lldpV2Xdot1LocProtocolId,
        lldpV2Xdot1LocVidUsageDigest,
        lldpV2Xdot1LocManVid,
        lldpV2Xdot1LocLinkAggStatus,
        lldpV2Xdot1LocLinkAggPortId
    }
    STATUS  current
    DESCRIPTION
            "The collection of objects which are used to represent
            IEEE 802.1 organizationally defined LLDP extension
            associated with the Local Device Information for the
            basicSet TLV set."
    ::= { lldpV2Xdot1Groups 2 }

lldpV2Xdot1RemSysGroup  OBJECT-GROUP
    OBJECTS {
        lldpV2Xdot1RemPortVlanId,
        lldpV2Xdot1RemProtoVlanSupported,
        lldpV2Xdot1RemProtoVlanEnabled,
        lldpV2Xdot1RemVlanName,
        lldpV2Xdot1RemProtocolId,
        lldpV2Xdot1RemVidUsageDigest,
        lldpV2Xdot1RemManVid,
        lldpV2Xdot1RemLinkAggStatus,
        lldpV2Xdot1RemLinkAggPortId
    }
    STATUS  current
    DESCRIPTION
            "The collection of objects which are used to represent LLDP
            802.1 organizational extension Remote Device Information
            for the basicSet TLV set."
    ::= { lldpV2Xdot1Groups 3 }

--------------------------------------------------------------------------
--------------------------------------------------------------------------
--
-- Organizationally Defined Information Extension - IEEE 802.1
-- Definitions to support the cnSet TLV set (Table D-1)
-- for Congestion Notification
--
--------------------------------------------------------------------------
--------------------------------------------------------------------------

lldpXdot1CnMIB OBJECT IDENTIFIER ::= { lldpV2Xdot1MIB 3 }
lldpXdot1CnObjects OBJECT IDENTIFIER ::= { lldpXdot1CnMIB 1 }

-- CN 802.1 MIB Extension groups

lldpXdot1CnConfig OBJECT IDENTIFIER ::= { lldpXdot1CnObjects 1 }
lldpXdot1CnLocalData OBJECT IDENTIFIER ::= { lldpXdot1CnObjects 2 }
lldpXdot1CnRemoteData OBJECT IDENTIFIER ::= { lldpXdot1CnObjects 3 }

----------------------------------------------------------------------
-- Textual conventions for Congestion Notification
----------------------------------------------------------------------

LldpV2CnBitVector ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
```

```
            "This TC describes a bit vector used in the Congestion
            Notification objects. Each bit represents a Boolean status
            associated with a priority code point. A bit value of 0
            represents FALSE, 1 represents TRUE.

            The bit 'pri0status(0)' indicates the status for priority 0
            The bit 'pri1status(1)' indicates the status for priority 1
            The bit 'pri2status(2)' indicates the status for priority 2
            The bit 'pri3status(3)' indicates the status for priority 3
            The bit 'pri4status(4)' indicates the status for priority 4
            The bit 'pri5status(5)' indicates the status for priority 5
            The bit 'pri6status(6)' indicates the status for priority 6
            The bit 'pri7status(7)' indicates the status for priority 7"

    SYNTAX  BITS {
            pri0status(0),
            pri1status(1),
            pri2status(2),
            pri3status(3),
            pri4status(4),
            pri5status(5),
            pri6status(6),
            pri7status(7)
    }

-- ------------------------------------------------------------------
-- IEEE 802.1 - Congestion Notification Configuration
-- ------------------------------------------------------------------

--
--  lldpXdot1CnConfigCnTable : configure the
--  transmission of the Congestion Notification TLV on a set of ports
--

lldpXdot1CnConfigCnTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF LldpXdot1CnConfigCnEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "A table that controls selection of Congestion Notification
         TLVs to be transmitted on individual ports."
    ::= { lldpXdot1CnConfig 1 }

lldpXdot1CnConfigCnEntry OBJECT-TYPE
    SYNTAX        LldpXdot1CnConfigCnEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "LLDP configuration information that controls the
        transmission of IEEE 802.1 organizationally defined
        Congestion Notification TLV on LLDP transmission capable ports.

        This configuration object augments the lldpV2PortConfigEntry of
        the LLDP-MIB, therefore it is only present along with the port
        configuration defined by the associated lldpV2PortConfigEntry
        entry.

        Each active lldpConfigEntry is restored from non-volatile
        storage (along with the corresponding lldpV2PortConfigEntry)
```

```
        after a re-initialization of the management system."
    AUGMENTS      { lldpV2PortConfigEntry }
    ::= { lldpXdot1CnConfigCnTable 1 }

LldpXdot1CnConfigCnEntry ::= SEQUENCE {
    lldpXdot1CnConfigCnTxEnable TruthValue
}

lldpXdot1CnConfigCnTxEnable OBJECT-TYPE
    SYNTAX        TruthValue
    MAX-ACCESS    read-write
    STATUS        current
    DESCRIPTION
        "The lldpXdot1CnConfigCnTxEnable, which is
        defined as a truth value and configured by the network
        management, determines whether the IEEE 802.1 organizationally
        defined Congestion Notification TLV transmission is allowed
        on a given LLDP transmission capable port.

        The value of this object is restored from non-volatile
        storage after a re-initialization of the management system."
    REFERENCE
        "D.2.8"
    DEFVAL         { false }
    ::= { lldpXdot1CnConfigCnEntry 1 }

-----------------------------------------------------------------------
-- IEEE 802.1 - Congestion Notification Local System Information
-----------------------------------------------------------------------

---
---
--- lldpV2Xdot1LocCnTable: Port Extension Information Table
---
---
lldpV2Xdot1LocCnTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2Xdot1LocCnEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "This table contains one row per port of Congestion
            Notification information (as a part of the LLDP
            802.1 organizational extension) on the local system
            known to this agent."
    ::= { lldpXdot1CnLocalData 1 }

lldpV2Xdot1LocCnEntry OBJECT-TYPE
    SYNTAX      LldpV2Xdot1LocCnEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "Congestion Notification information about a
            particular port component."
    INDEX   { lldpV2LocPortIfIndex }
    ::= { lldpV2Xdot1LocCnTable 1 }

LldpV2Xdot1LocCnEntry ::= SEQUENCE {
      lldpV2Xdot1LocCNPVIndicators    LldpV2CnBitVector,
      lldpV2Xdot1LocReadyIndicators   LldpV2CnBitVector
```

```
}

lldpV2Xdot1LocCNPVIndicators OBJECT-TYPE
    SYNTAX      LldpV2CnBitVector
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "This object contains the CNPV indicators
            for the Port."
    REFERENCE
            "D.2.8.3"
    ::= { lldpV2Xdot1LocCnEntry 1 }

lldpV2Xdot1LocReadyIndicators OBJECT-TYPE
    SYNTAX      LldpV2CnBitVector
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "This object contains the Ready indicators
            for the Port."
    REFERENCE
            "D.2.8.4"
    ::= { lldpV2Xdot1LocCnEntry 2 }

--------------------------------------------------------------------------
-- IEEE 802.1 - Congestion Notification Remote System Information
--------------------------------------------------------------------------

---
---
--- lldpV2Xdot1RemCnTable: Port Extension Information Table
---
---
lldpV2Xdot1RemCnTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2Xdot1RemCnEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "This table contains Congestion Notification information
            (as a part of the LLDP IEEE 802.1 organizational extension)
            of the remote system."
    ::= { lldpXdot1CnRemoteData 1 }

lldpV2Xdot1RemCnEntry OBJECT-TYPE
    SYNTAX      LldpV2Xdot1RemCnEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "Port Extension information about remote systems port
            component."
    INDEX   { lldpV2RemTimeMark,
              lldpV2RemLocalIfIndex,
              lldpV2RemLocalDestMACAddress,
              lldpV2RemIndex }
    ::= { lldpV2Xdot1RemCnTable 1 }

LldpV2Xdot1RemCnEntry ::= SEQUENCE {
      lldpV2Xdot1RemCNPVIndicators    LldpV2CnBitVector,
      lldpV2Xdot1RemReadyIndicators   LldpV2CnBitVector
```

```
}

lldpV2Xdot1RemCNPVIndicators OBJECT-TYPE
    SYNTAX      LldpV2CnBitVector
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "This object contains the CNPV indicators
            for the Port."
    REFERENCE
            "D.2.8.3"
    ::= { lldpV2Xdot1RemCnEntry 1 }

lldpV2Xdot1RemReadyIndicators OBJECT-TYPE
    SYNTAX      LldpV2CnBitVector
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "This object contains the Ready indicators
            for the Port."
    REFERENCE
            "D.2.8.4"
    ::= { lldpV2Xdot1RemCnEntry 2 }

-- ------------------------------------------------------------------------
-- IEEE 802.1 - Congestion Notification Conformance Information
-- ------------------------------------------------------------------------

lldpXdot1CnConformance OBJECT IDENTIFIER ::= { lldpV2Xdot1MIB 4 }

lldpXdot1CnCompliances
    OBJECT IDENTIFIER ::= { lldpXdot1CnConformance 1 }
lldpXdot1CnGroups OBJECT IDENTIFIER ::= { lldpXdot1CnConformance 2 }

--
-- Congestion Notification - Compliance Statements
--

lldpXdot1CnCompliance MODULE-COMPLIANCE
    STATUS        current
    DESCRIPTION
         "A compliance statement for SNMP entities that implement
         the IEEE 802.1 organizationally defined Congestion
         Notification LLDP extension MIB.

         This group is mandatory for agents that implement the
         Congestion Notification cnSet TLV set."
    MODULE        -- this module
        MANDATORY-GROUPS  { lldpXdot1CnGroup,
                            ifGeneralInformationGroup }
    ::= { lldpXdot1CnCompliances 1 }

--
-- Congestion Notification - MIB groupings
--

lldpXdot1CnGroup  OBJECT-GROUP
    OBJECTS {
        lldpXdot1CnConfigCnTxEnable,
```

```
        lldpV2Xdot1LocCNPVIndicators,
        lldpV2Xdot1LocReadyIndicators,
        lldpV2Xdot1RemCNPVIndicators,
        lldpV2Xdot1RemReadyIndicators
    }
    STATUS  current
    DESCRIPTION
        "The collection of objects that support the
        Congestion Notification cnSet TLV set."
    ::= { lldpXdot1CnGroups 1 }

--------------------------------------------------------------------------
--------------------------------------------------------------------------
--
-- Organizationally Defined Information Extension - IEEE 802.1
-- Definitions to support the Data Center eXchange Protocol
-- (DCBX) TLV set (Table D-1)
--
--------------------------------------------------------------------------
--------------------------------------------------------------------------
lldpXdot1dcbxMIB OBJECT IDENTIFIER ::= { lldpV2Xdot1MIB 5 }
lldpXdot1dcbxObjects       OBJECT IDENTIFIER ::= { lldpXdot1dcbxMIB 1 }

-- DCBX 802.1 MIB Extension groups

lldpXdot1dcbxConfig     OBJECT IDENTIFIER ::= { lldpXdot1dcbxObjects 1 }
lldpXdot1dcbxLocalData  OBJECT IDENTIFIER ::= { lldpXdot1dcbxObjects 2 }
lldpXdot1dcbxRemoteData OBJECT IDENTIFIER ::= { lldpXdot1dcbxObjects 3 }
lldpXdot1dcbxAdminData  OBJECT IDENTIFIER ::= { lldpXdot1dcbxObjects 4 }

----------------------------------------------------------------------
-- IEEE 802.1 - DCBX Textual Conventions
----------------------------------------------------------------------

LldpXdot1dcbxTrafficClassValue ::= TEXTUAL-CONVENTION
    DISPLAY-HINT "d"
    STATUS    current
    DESCRIPTION
        "Indicates a traffic class.  Values 0-7 correspond to
        traffic classes."
    SYNTAX    Unsigned32 (0..7)

LldpXdot1dcbxTrafficClassBandwidthValue ::= TEXTUAL-CONVENTION
    DISPLAY-HINT "d"
    STATUS    current
    DESCRIPTION
        "Indicates the bandwidth in percent assigned to a
        traffic class."
    SYNTAX    Unsigned32 (0..100)

LldpXdot1dcbxAppSelector ::= TEXTUAL-CONVENTION
    STATUS    current
    DESCRIPTION
        "Indicates the contents of a protocol object
        1: Ethertype
        2: Well Known Port number over TCP, or SCTP
        3: Well Known Port number over UDP, or DCCP
        4: Well Known Port number over TCP, SCTP, UDP, and DCCP"
    SYNTAX INTEGER {
```

```
        asEthertype(1),
        asTCPPortNumber(2),
        asUDPPortNumber(3),
        asTCPUDPPortNumber(4)
    }

 LldpXdot1dcbxAppProtocol ::= TEXTUAL-CONVENTION
     DISPLAY-HINT "d"
     STATUS        current
     DESCRIPTION
         "Contains the application protocol indicator the
         type of which is specified by an object with
         the syntax of
         LldpXdot1dcbxAppSelector"
     SYNTAX Unsigned32 (0..65535)

LldpXdot1dcbxSupportedCapacity ::= TEXTUAL-CONVENTION
    DISPLAY-HINT "d"
    STATUS    current
    DESCRIPTION
        "Indicates the supported capacity of a given feature,
        for example, the number of traffic classes supported.
        This TC is used for features that have a maximum
        capacity of eight and a minimum of one."
    SYNTAX Unsigned32 (1..8)

LldpXdot1dcbxTrafficSelectionAlgorithm ::= TEXTUAL-CONVENTION
    STATUS    current
    DESCRIPTION
        "Indicates the Traffic Selection Algorithm
        0: Strict Priority
        1: Credit-based shaper
        2: Enhanced transmission selection
        3-254: Reserved for furture standardization
        255: Vendor specific"
    SYNTAX INTEGER {
        tsaStrictPriority(0),
        tsaCreditBasedShaper(1),
        tsaEnhancedTransmission(2),
        tsaVendorSpecific(255)
    }

-----------------------------------------------------------------------
-- IEEE 802.1 - DCBX Configuration
-----------------------------------------------------------------------

--
--  lldpXdot1dcbxConfigETSConfigurationTable : configure the
--  transmission of the ETS Configuration TLV on a set of ports
--

lldpXdot1dcbxConfigETSConfigurationTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF LldpXdot1dcbxConfigETSConfigurationEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "A table that controls selection of ETS Configuration
         TLVs to be transmitted on individual ports."
    ::= { lldpXdot1dcbxConfig 1 }
```

```
lldpXdot1dcbxConfigETSConfigurationEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxConfigETSConfigurationEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "LLDP configuration information that controls the
        transmission of IEEE 802.1 organizationally defined
        ETS Configuration TLV on LLDP transmission capable ports.

        This configuration object augments the lldpV2PortConfigEntry of
        the LLDP-MIB, therefore it is only present along with the port
        configuration defined by the associated lldpV2PortConfigEntry
        entry.

        Each active lldpConfigEntry is restored from non-volatile
        storage (along with the corresponding lldpV2PortConfigEntry)
        after a re-initialization of the management system."
    AUGMENTS      { lldpV2PortConfigEntry }
    ::= { lldpXdot1dcbxConfigETSConfigurationTable 1 }

LldpXdot1dcbxConfigETSConfigurationEntry ::= SEQUENCE {
    lldpXdot1dcbxConfigETSConfigurationTxEnable TruthValue
}

lldpXdot1dcbxConfigETSConfigurationTxEnable OBJECT-TYPE
    SYNTAX        TruthValue
    MAX-ACCESS    read-write
    STATUS        current
    DESCRIPTION
        "The lldpXdot1dcbxConfigETSConfigurationTxEnable, which is
        defined as a truth value and configured by the network
        management, determines whether the IEEE 802.1 organizationally
        defined ETS Configuration TLV transmission is allowed on a
        given LLDP transmission capable port.

        The value of this object is restored from non-volatile
        storage after a re-initialization of the management system."
    REFERENCE
        "D.2.9"
    DEFVAL         { false }
    ::= { lldpXdot1dcbxConfigETSConfigurationEntry 1 }

--
--  lldpXdot1dcbxConfigETSRecommendationTable : configure the
--  transmission of the ETS Recommendation TLV on a set of ports
--

lldpXdot1dcbxConfigETSRecommendationTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF LldpXdot1dcbxConfigETSRecommendationEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "A table that controls selection of ETS Recommendation
        TLVs to be transmitted on individual ports."
    ::= { lldpXdot1dcbxConfig 2 }

lldpXdot1dcbxConfigETSRecommendationEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxConfigETSRecommendationEntry
```

```
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "LLDP configuration information that controls the
        transmission of IEEE 802.1 organizationally defined
        ETS Recommendation TLV on LLDP transmission capable ports.

        This configuration object augments the lldpV2PortConfigEntry of
        the LLDP-MIB, therefore it is only present along with the port
        configuration defined by the associated lldpV2PortConfigEntry
        entry.

        Each active lldpConfigEntry is restored from non-volatile
        storage (along with the corresponding lldpV2PortConfigEntry)
        after a re-initialization of the management system."
    AUGMENTS     { lldpV2PortConfigEntry }
    ::= { lldpXdot1dcbxConfigETSRecommendationTable 1 }

LldpXdot1dcbxConfigETSRecommendationEntry ::= SEQUENCE {
    lldpXdot1dcbxConfigETSRecommendationTxEnable TruthValue
}

lldpXdot1dcbxConfigETSRecommendationTxEnable OBJECT-TYPE
    SYNTAX        TruthValue
    MAX-ACCESS    read-write
    STATUS        current
    DESCRIPTION
        "The lldpXdot1dcbxConfigETSRecommendationTxEnable, which is
        defined as a truth value and configured by the network
        management, determines whether the IEEE 802.1 organizationally
        defined ETS Recommendation TLV transmission is allowed on a
        given LLDP transmission capable port.

        The value of this object is restored from non-volatile
        storage after a re-initialization of the management system."
    REFERENCE
        "D.2.10"
    DEFVAL         { false }
    ::= { lldpXdot1dcbxConfigETSRecommendationEntry 1 }
--
--  lldpXdot1dcbxConfigPFCTable : configure the transmission of the
--  Priority-based Flow Control TLV on a set of ports
--

lldpXdot1dcbxConfigPFCTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF LldpXdot1dcbxConfigPFCEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "A table that controls selection of Priority-based
        Flow Control TLVs to be transmitted on individual ports."
    ::= { lldpXdot1dcbxConfig 3 }

lldpXdot1dcbxConfigPFCEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxConfigPFCEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "LLDP configuration information that controls the
```

```
        transmission of IEEE 802.1 organizationally defined
        Priority-based Flow Control TLV on LLDP transmission
        capable ports.

        This configuration object augments the lldpV2PortConfigEntry of
        the LLDP-MIB, therefore it is only present along with the port
        configuration defined by the associated lldpV2PortConfigEntry
        entry.

        Each active lldpConfigEntry is restored from non-volatile
        storage (along with the corresponding lldpV2PortConfigEntry)
        after a re-initialization of the management system."
    AUGMENTS     { lldpV2PortConfigEntry }
    ::= { lldpXdot1dcbxConfigPFCTable 1 }

LldpXdot1dcbxConfigPFCEntry ::= SEQUENCE {
    lldpXdot1dcbxConfigPFCTxEnable TruthValue
}

lldpXdot1dcbxConfigPFCTxEnable OBJECT-TYPE
    SYNTAX        TruthValue
    MAX-ACCESS    read-write
    STATUS        current
    DESCRIPTION
        "The lldpXdot1dcbxConfigPFCTxEnable, which is defined
        as a truth value and configured by the network management,
        determines whether the IEEE 802.1 organizationally defined
        Priority-based Flow Control TLV transmission is allowed on
        a given LLDP transmission capable port.

        The value of this object is restored from non-volatile
        storage after a re-initialization of the management system."
    REFERENCE
        "D.2.11"
    DEFVAL         { false }
    ::= { lldpXdot1dcbxConfigPFCEntry 1 }

--
--  lldpXdot1dcbxConfigApplicationPriorityTable : configure the
--  transmission of the Application Priority TLV on a set of ports
--

lldpXdot1dcbxConfigApplicationPriorityTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF
        LldpXdot1dcbxConfigApplicationPriorityEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "A table that controls selection of Priority-based
        Flow Control TLVs to be transmitted on individual ports."
    ::= { lldpXdot1dcbxConfig 4 }

lldpXdot1dcbxConfigApplicationPriorityEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxConfigApplicationPriorityEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "LLDP configuration information that controls the
        transmission of IEEE 802.1 organizationally defined
```

```
        Application Priority TLV on LLDP transmission capable ports.

        This configuration object augments the lldpV2PortConfigEntry of
        the LLDP-MIB, therefore it is only present along with the port
        configuration defined by the associated lldpV2PortConfigEntry
        entry.

        Each active lldpConfigEntry is restored from non-volatile
        storage (along with the corresponding lldpV2PortConfigEntry)
        after a re-initialization of the management system."
    AUGMENTS     { lldpV2PortConfigEntry }
    ::= { lldpXdot1dcbxConfigApplicationPriorityTable 1 }

LldpXdot1dcbxConfigApplicationPriorityEntry ::= SEQUENCE {
    lldpXdot1dcbxConfigApplicationPriorityTxEnable TruthValue
}

lldpXdot1dcbxConfigApplicationPriorityTxEnable OBJECT-TYPE
    SYNTAX        TruthValue
    MAX-ACCESS    read-write
    STATUS        current
    DESCRIPTION
        "The lldpXdot1dcbxConfigApplicationPriorityTxEnable, which
        is defined as a truth value and configured by the network
        management, determines whether the IEEE 802.1 organizationally
        defined Application Priority TLV transmission is allowed on
        a given LLDP transmission capable port.

        The value of this object is restored from non-volatile
        storage after a re-initialization of the management system."
    REFERENCE
        "D.2.12"
    DEFVAL         { false }
    ::= { lldpXdot1dcbxConfigApplicationPriorityEntry 1 }

-- ------------------------------------------------------------------------
-- IEEE 802.1 - DCBX Local System Information
-- ------------------------------------------------------------------------

--
-- lldpXdot1dcbxLocETSConfigurationTable - Contains the information
-- for the ETS Configuration TLV.
--
lldpXdot1dcbxLocETSConfiguration OBJECT IDENTIFIER
    ::= { lldpXdot1dcbxLocalData 1 }

lldpXdot1dcbxLocETSBasicConfigurationTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF LldpXdot1dcbxLocETSBasicConfigurationEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "This table contains one row per port for the IEEE 802.1
        organizationally defined LLDP ETS Configuration TLV on
        the local system known to this agent"
    ::= { lldpXdot1dcbxLocETSConfiguration 1 }

lldpXdot1dcbxLocETSBasicConfigurationEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxLocETSBasicConfigurationEntry
    MAX-ACCESS    not-accessible
```

```
    STATUS        current
    DESCRIPTION
        "Information about the IEEE 802.1 organizational defined
        ETS Configuration TLV LLDP extension."
    INDEX         { lldpV2LocPortIfIndex }
    ::= { lldpXdot1dcbxLocETSBasicConfigurationTable 1 }

LldpXdot1dcbxLocETSBasicConfigurationEntry ::= SEQUENCE {
    lldpXdot1dcbxLocETSConCreditBasedShaperSupport TruthValue,
    lldpXdot1dcbxLocETSConTrafficClassesSupported
        LldpXdot1dcbxSupportedCapacity,
    lldpXdot1dcbxLocETSConWilling    TruthValue
}

lldpXdot1dcbxLocETSConCreditBasedShaperSupport OBJECT-TYPE
    SYNTAX        TruthValue
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "Indicates if the credit-based shaper Traffic Selection
        Algorithm is supported on the local system."
    REFERENCE
        "D.2.9.4"
    ::= { lldpXdot1dcbxLocETSBasicConfigurationEntry 1 }

lldpXdot1dcbxLocETSConTrafficClassesSupported OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxSupportedCapacity
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "Indicates the number of traffic classes supported."
    REFERENCE
        "D.2.9.5"
    ::= { lldpXdot1dcbxLocETSBasicConfigurationEntry 2 }

lldpXdot1dcbxLocETSConWilling OBJECT-TYPE
    SYNTAX        TruthValue
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "Indicates if the local system is willing to accept the
        ETS configuration recommended by the remote system."
    REFERENCE
        "D.2.9.3"
    ::= { lldpXdot1dcbxLocETSBasicConfigurationEntry 3 }

lldpXdot1dcbxLocETSConPriorityAssignmentTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF
        LldpXdot1dcbxLocETSConPriorityAssignmentEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "This table contains one row per priority.  The entry in each
        row indicates the traffic class to which the priority is
        assigned."
    ::= { lldpXdot1dcbxLocETSConfiguration 2 }

lldpXdot1dcbxLocETSConPriorityAssignmentEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxLocETSConPriorityAssignmentEntry
```

```
        MAX-ACCESS    not-accessible
        STATUS        current
        DESCRIPTION
            "Indicates a priority to traffic class assignment."
        INDEX        {
                    lldpV2LocPortIfIndex,
                    lldpXdot1dcbxLocETSConPriority
        }
        ::= { lldpXdot1dcbxLocETSConPriorityAssignmentTable 1 }

    LldpXdot1dcbxLocETSConPriorityAssignmentEntry ::= SEQUENCE {
        lldpXdot1dcbxLocETSConPriority      IEEE8021PriorityValue,
        lldpXdot1dcbxLocETSConPriTrafficClass
            LldpXdot1dcbxTrafficClassValue
    }

    lldpXdot1dcbxLocETSConPriority OBJECT-TYPE
        SYNTAX        IEEE8021PriorityValue
        MAX-ACCESS    not-accessible
        STATUS        current
        DESCRIPTION
            "Indicates the priority that is assigned to a traffic
            class."
        REFERENCE
            "D.2.9.6"
        ::= { lldpXdot1dcbxLocETSConPriorityAssignmentEntry 1 }

    lldpXdot1dcbxLocETSConPriTrafficClass OBJECT-TYPE
        SYNTAX        LldpXdot1dcbxTrafficClassValue
        MAX-ACCESS    read-only
        STATUS        current
        DESCRIPTION
            "Indicates the traffic class to which this priority is
            to be assigned."
        REFERENCE
            "D.2.9.6"
        ::= { lldpXdot1dcbxLocETSConPriorityAssignmentEntry 2 }

    lldpXdot1dcbxLocETSConTrafficClassBandwidthTable OBJECT-TYPE
        SYNTAX        SEQUENCE OF
            LldpXdot1dcbxLocETSConTrafficClassBandwidthEntry
        MAX-ACCESS    not-accessible
        STATUS        current
        DESCRIPTION
            "This table contains one row per traffic class.  The
            entry in each row indicates the traffic class to
            which the bandwidth is assigned."
        ::= { lldpXdot1dcbxLocETSConfiguration 3 }

    lldpXdot1dcbxLocETSConTrafficClassBandwidthEntry OBJECT-TYPE
        SYNTAX        LldpXdot1dcbxLocETSConTrafficClassBandwidthEntry
        MAX-ACCESS    not-accessible
        STATUS        current
        DESCRIPTION
            "Indicates a traffic class to Bandwidth assignment."
        INDEX        {
                    lldpV2LocPortIfIndex,
                    lldpXdot1dcbxLocETSConTrafficClass
        }
```

```
    ::= { lldpXdot1dcbxLocETSConTrafficClassBandwidthTable 1 }

LldpXdot1dcbxLocETSConTrafficClassBandwidthEntry ::= SEQUENCE {
    lldpXdot1dcbxLocETSConTrafficClass
        LldpXdot1dcbxTrafficClassValue,
    lldpXdot1dcbxLocETSConTrafficClassBandwidth
        LldpXdot1dcbxTrafficClassBandwidthValue
}

lldpXdot1dcbxLocETSConTrafficClass OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxTrafficClassValue
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates the traffic class to
        which this bandwidth applies"
    REFERENCE
        "D.2.9.7"
    ::= { lldpXdot1dcbxLocETSConTrafficClassBandwidthEntry 1 }

lldpXdot1dcbxLocETSConTrafficClassBandwidth OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxTrafficClassBandwidthValue
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "Indicates the bandwidth assigned to this traffic class."
    REFERENCE
        "D.2.9.7"
    ::= { lldpXdot1dcbxLocETSConTrafficClassBandwidthEntry 2 }


lldpXdot1dcbxLocETSConTrafficSelectionAlgorithmTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF
        LldpXdot1dcbxLocETSConTrafficSelectionAlgorithmEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "This table contains one row per traffic class.  The entry
        in each row indicates the traffic selction algorithm to be
        used by the traffic class."
    ::= { lldpXdot1dcbxLocETSConfiguration 4 }

lldpXdot1dcbxLocETSConTrafficSelectionAlgorithmEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxLocETSConTrafficSelectionAlgorithmEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates a traffic class to traffic selection algorithm
         assignment."
    INDEX        {
                lldpV2LocPortIfIndex,
                lldpXdot1dcbxLocETSConTSATrafficClass
    }
    ::= { lldpXdot1dcbxLocETSConTrafficSelectionAlgorithmTable 1 }

LldpXdot1dcbxLocETSConTrafficSelectionAlgorithmEntry ::= SEQUENCE {
    lldpXdot1dcbxLocETSConTSATrafficClass
        LldpXdot1dcbxTrafficClassValue,
    lldpXdot1dcbxLocETSConTrafficSelectionAlgorithm
```

```
        LldpXdot1dcbxTrafficSelectionAlgorithm
}

lldpXdot1dcbxLocETSConTSATrafficClass OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxTrafficClassValue
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates the traffic class that is assigned to a traffic
        selection algorithm."
    REFERENCE
        "D.2.9.8"
    ::= { lldpXdot1dcbxLocETSConTrafficSelectionAlgorithmEntry 1 }

lldpXdot1dcbxLocETSConTrafficSelectionAlgorithm OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxTrafficSelectionAlgorithm
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "Indicates the Traffic Selection Algorithm to which this
        traffic class is to be assigned."
    REFERENCE
        "D.2.9.8"
    ::= { lldpXdot1dcbxLocETSConTrafficSelectionAlgorithmEntry 2 }

--
-- lldpXdot1dcbxLocETSRecommendationTable - Contains the information for
-- the ETS Recommendation TLV.
--
lldpXdot1dcbxLocETSReco OBJECT IDENTIFIER ::=
  { lldpXdot1dcbxLocalData 2 }

lldpXdot1dcbxLocETSRecoTrafficClassBandwidthTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF
        LldpXdot1dcbxLocETSRecoTrafficClassBandwidthEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "This table contains one row per traffic class.  The
        entry in each row indicates the traffic class to
        which the bandwidth is assigned."
    ::= { lldpXdot1dcbxLocETSReco 1 }

lldpXdot1dcbxLocETSRecoTrafficClassBandwidthEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxLocETSRecoTrafficClassBandwidthEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates a traffic class to Bandwidth assignment."
    INDEX        {
                lldpV2LocPortIfIndex,
                lldpXdot1dcbxLocETSRecoTrafficClass
    }
    ::= { lldpXdot1dcbxLocETSRecoTrafficClassBandwidthTable 1 }

LldpXdot1dcbxLocETSRecoTrafficClassBandwidthEntry ::= SEQUENCE {
    lldpXdot1dcbxLocETSRecoTrafficClass
        LldpXdot1dcbxTrafficClassValue,
    lldpXdot1dcbxLocETSRecoTrafficClassBandwidth
```

```
        LldpXdot1dcbxTrafficClassBandwidthValue
}

lldpXdot1dcbxLocETSRecoTrafficClass OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxTrafficClassValue
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates the traffic class to
        which this bandwidth applies"
    REFERENCE
        "D.2.10.3"
    ::= { lldpXdot1dcbxLocETSRecoTrafficClassBandwidthEntry 1 }

lldpXdot1dcbxLocETSRecoTrafficClassBandwidth OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxTrafficClassBandwidthValue
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "Indicates the bandwidth assigned to this traffic class."
    REFERENCE
        "D.2.10.4"
    ::= { lldpXdot1dcbxLocETSRecoTrafficClassBandwidthEntry 2 }

lldpXdot1dcbxLocETSRecoTrafficSelectionAlgorithmTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF
        LldpXdot1dcbxLocETSRecoTrafficSelectionAlgorithmEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "This table contains one row per priority.  The entry in each
        row indicates the traffic selction algorithm to be used
        by the traffic class."
    ::= { lldpXdot1dcbxLocETSReco 2 }

lldpXdot1dcbxLocETSRecoTrafficSelectionAlgorithmEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxLocETSRecoTrafficSelectionAlgorithmEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates a priority to traffic selection algorithm
         assignment."
    INDEX        {
                 lldpV2LocPortIfIndex,
                 lldpXdot1dcbxLocETSRecoTSATrafficClass
    }
    ::= { lldpXdot1dcbxLocETSRecoTrafficSelectionAlgorithmTable 1 }

LldpXdot1dcbxLocETSRecoTrafficSelectionAlgorithmEntry ::= SEQUENCE {
    lldpXdot1dcbxLocETSRecoTSATrafficClass
        LldpXdot1dcbxTrafficClassValue,
    lldpXdot1dcbxLocETSRecoTrafficSelectionAlgorithm
        LldpXdot1dcbxTrafficSelectionAlgorithm
}

lldpXdot1dcbxLocETSRecoTSATrafficClass OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxTrafficClassValue
    MAX-ACCESS    not-accessible
    STATUS        current
```

```
        DESCRIPTION
            "Indicates the traffic class that is assigned to a traffic
            selection algorithm."
        REFERENCE
            "D.2.10.5"
        ::= { lldpXdot1dcbxLocETSRecoTrafficSelectionAlgorithmEntry 1 }

    lldpXdot1dcbxLocETSRecoTrafficSelectionAlgorithm OBJECT-TYPE
        SYNTAX        LldpXdot1dcbxTrafficSelectionAlgorithm
        MAX-ACCESS    read-only
        STATUS        current
        DESCRIPTION
            "Indicates the Traffic Selection Algorithm to which this
            traffic class is to be assigned."
        REFERENCE
            "D.2.10.5"
        ::= { lldpXdot1dcbxLocETSRecoTrafficSelectionAlgorithmEntry 2 }

    --
    -- lldpXdot1dcbxLocPFCTable - Contains the information for the PFC
    -- Configuration TLV.
    --
    lldpXdot1dcbxLocPFC OBJECT IDENTIFIER ::= { lldpXdot1dcbxLocalData 3 }

    lldpXdot1dcbxLocPFCBasicTable OBJECT-TYPE
        SYNTAX        SEQUENCE OF LldpXdot1dcbxLocPFCBasicEntry
        MAX-ACCESS    not-accessible
        STATUS        current
        DESCRIPTION
            "This table contains one row per port for the IEEE 802.1
            organizationally defined LLDP PFC TLV on the local
            system known to this agent"
        ::= { lldpXdot1dcbxLocPFC 1 }

    lldpXdot1dcbxLocPFCBasicEntry OBJECT-TYPE
        SYNTAX        LldpXdot1dcbxLocPFCBasicEntry
        MAX-ACCESS    not-accessible
        STATUS        current
        DESCRIPTION
            "Information about the IEEE 802.1 organizational defined
            PFC TLV LLDP extension."
        INDEX         { lldpV2LocPortIfIndex }
        ::= { lldpXdot1dcbxLocPFCBasicTable 1 }

    LldpXdot1dcbxLocPFCBasicEntry ::= SEQUENCE {
        lldpXdot1dcbxLocPFCWilling    TruthValue,
        lldpXdot1dcbxLocPFCMBC           TruthValue,
        lldpXdot1dcbxLocPFCCap        LldpXdot1dcbxSupportedCapacity
    }

    lldpXdot1dcbxLocPFCWilling OBJECT-TYPE
        SYNTAX        TruthValue
        MAX-ACCESS    read-only
        STATUS        current
        DESCRIPTION
            "Indicates if the local system is willing to accept the
            PFC configuration of the remote system."
        REFERENCE
            "D.2.11.3"
```

```
    ::= { lldpXdot1dcbxLocPFCBasicEntry 1}

lldpXdot1dcbxLocPFCMBC OBJECT-TYPE
    SYNTAX        TruthValue
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "Indicates if the local system is capable of bypassing
        MACsec processing when MACsec is disabled."
    REFERENCE
        "D.2.11.4"
    ::= { lldpXdot1dcbxLocPFCBasicEntry 2}

lldpXdot1dcbxLocPFCCap OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxSupportedCapacity
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "Indicates the number of traffic classes on the local device
        that may simultaneously have PFC enabled."
    REFERENCE
        "D.2.11.5"
    ::= { lldpXdot1dcbxLocPFCBasicEntry 3}

lldpXdot1dcbxLocPFCEnableTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF LldpXdot1dcbxLocPFCEnableEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "This table contains eight entries, one entry per priority,
        indicating if PFC is enabled on the corresponding priority."
    ::= { lldpXdot1dcbxLocPFC 2 }

lldpXdot1dcbxLocPFCEnableEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxLocPFCEnableEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Each entry indicates if PFC is enabled on the
        correponding priority"
    INDEX {
        lldpV2LocPortIfIndex,
        lldpXdot1dcbxLocPFCEnablePriority
    }
    ::= { lldpXdot1dcbxLocPFCEnableTable 1 }

LldpXdot1dcbxLocPFCEnableEntry ::= SEQUENCE {
    lldpXdot1dcbxLocPFCEnablePriority   IEEE8021PriorityValue,
    lldpXdot1dcbxLocPFCEnableEnabled    TruthValue
}

lldpXdot1dcbxLocPFCEnablePriority OBJECT-TYPE
    SYNTAX        IEEE8021PriorityValue
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Prioity for which PFC is enabled / disabled"
    ::= { lldpXdot1dcbxLocPFCEnableEntry 1 }
```

```
lldpXdot1dcbxLocPFCEnableEnabled OBJECT-TYPE
    SYNTAX        TruthValue
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "Indicates if PFC is enabled on the corresponding priority"
    REFERENCE
        "D.2.11.6"
    ::= { lldpXdot1dcbxLocPFCEnableEntry 2 }
--
-- lldpXdot1dcbxLocApplicationPriorityTable - Contains the information
-- for the Application Priority TLV.
--

lldpXdot1dcbxLocApplicationPriorityAppTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF
        LldpXdot1dcbxLocApplicationPriorityAppEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Table containing entries indicating the priorty to be used
        for a given application"
    ::= { lldpXdot1dcbxLocalData 4 }

lldpXdot1dcbxLocApplicationPriorityAppEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxLocApplicationPriorityAppEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Entry that indicates the priority to be used for a
        given application."
    INDEX         {
                  lldpV2LocPortIfIndex,
                  lldpXdot1dcbxLocApplicationPriorityAESelector,
                  lldpXdot1dcbxLocApplicationPriorityAEProtocol
    }
    ::= { lldpXdot1dcbxLocApplicationPriorityAppTable 1 }

LldpXdot1dcbxLocApplicationPriorityAppEntry ::= SEQUENCE {
    lldpXdot1dcbxLocApplicationPriorityAESelector
        LldpXdot1dcbxAppSelector,
    lldpXdot1dcbxLocApplicationPriorityAEProtocol
        LldpXdot1dcbxAppProtocol,
    lldpXdot1dcbxLocApplicationPriorityAEPriority
        IEEE8021PriorityValue
}

lldpXdot1dcbxLocApplicationPriorityAESelector OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxAppSelector
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates the contents of the protocol object
        (lldpXdot1dcbxLocApplicationPriorityAEProtocol)
        1: Ethertype
        2: Well Known Port number over TCP, or SCTP
        3: Well Known Port number over UDP, or DCCP
        4: Well Known Port number over TCP, SCTP, UDP, and DCCP"
    REFERENCE
```

```
        "D.2.12.3"
    ::= { lldpXdot1dcbxLocApplicationPriorityAppEntry 1 }

lldpXdot1dcbxLocApplicationPriorityAEProtocol OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxAppProtocol
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "The protocol indicator of the type indicated by
        lldpXdot1dcbxLocApplicationPriorityAESelector."
    REFERENCE
        "D.2.12.3"
    ::= { lldpXdot1dcbxLocApplicationPriorityAppEntry 2 }

lldpXdot1dcbxLocApplicationPriorityAEPriority OBJECT-TYPE
    SYNTAX        IEEE8021PriorityValue
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "The priority code point that should be used in
        frames transporting the protocol indicated by
        lldpXdot1dcbxLocApplicationPriorityAESelector and
        lldpXdot1dcbxLocApplicationPriorityAEProtocol"
    REFERENCE
        "D.2.12.3"
    ::= { lldpXdot1dcbxLocApplicationPriorityAppEntry 3 }


--------------------------------------------------------------------------
-- IEEE 802.1 - DCBX Remote System Information
--------------------------------------------------------------------------

--
-- lldpXdot1dcbxRemETSConfigurationTable - Contains the information
-- for the remote system ETS Configuration TLV.
--
lldpXdot1dcbxRemETSConfiguration OBJECT IDENTIFIER
    ::= { lldpXdot1dcbxRemoteData 1 }

lldpXdot1dcbxRemETSBasicConfigurationTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF LldpXdot1dcbxRemETSBasicConfigurationEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "This table contains one row per port for the IEEE 802.1
        organizationally defined LLDP ETS Configuration TLV on
        the local system known to this agent"
    ::= { lldpXdot1dcbxRemETSConfiguration 1 }

lldpXdot1dcbxRemETSBasicConfigurationEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxRemETSBasicConfigurationEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Information about the IEEE 802.1 organizational defined
        ETS Configuration TLV LLDP extension."
    INDEX         {
                  lldpV2RemTimeMark,
                  lldpV2RemLocalIfIndex,
```

```
                    lldpV2RemLocalDestMACAddress,
                    lldpV2RemIndex
    }
    ::= { lldpXdot1dcbxRemETSBasicConfigurationTable 1 }

LldpXdot1dcbxRemETSBasicConfigurationEntry ::= SEQUENCE {
    lldpXdot1dcbxRemETSConCreditBasedShaperSupport     TruthValue,
    lldpXdot1dcbxRemETSConTrafficClassesSupported
        LldpXdot1dcbxSupportedCapacity,
    lldpXdot1dcbxRemETSConWilling    TruthValue
}

lldpXdot1dcbxRemETSConCreditBasedShaperSupport OBJECT-TYPE
    SYNTAX        TruthValue
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "Indicates if the credit-based shaper Traffic Selection
        algorithm is supported on the remote system."
    REFERENCE
        "D.2.9.4"
    ::= { lldpXdot1dcbxRemETSBasicConfigurationEntry 1 }

lldpXdot1dcbxRemETSConTrafficClassesSupported OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxSupportedCapacity
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "Indicates the number of traffic classes supported."
    REFERENCE
        "D.2.9.5"
    ::= { lldpXdot1dcbxRemETSBasicConfigurationEntry 2 }

lldpXdot1dcbxRemETSConWilling OBJECT-TYPE
    SYNTAX        TruthValue
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "Indicates if the remote system is willing to accept the
        ETS configuration recommended by the remote system."
    REFERENCE
        "D.2.9.3"
    ::= { lldpXdot1dcbxRemETSBasicConfigurationEntry 3 }

lldpXdot1dcbxRemETSConPriorityAssignmentTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF
        LldpXdot1dcbxRemETSConPriorityAssignmentEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "This table contains one row per priority.  The entry in
        each row indicates the traffic class to which the
        priority is assigned."
    ::= { lldpXdot1dcbxRemETSConfiguration 2 }

lldpXdot1dcbxRemETSConPriorityAssignmentEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxRemETSConPriorityAssignmentEntry
    MAX-ACCESS    not-accessible
    STATUS        current
```

```
        DESCRIPTION
            "Indicates a priority to traffic class assignment."
        INDEX        {
                    lldpV2RemTimeMark,
                    lldpV2RemLocalIfIndex,
                    lldpV2RemLocalDestMACAddress,
                    lldpV2RemIndex,
                    lldpXdot1dcbxRemETSConPriority
        }
        ::= { lldpXdot1dcbxRemETSConPriorityAssignmentTable 1 }

    LldpXdot1dcbxRemETSConPriorityAssignmentEntry ::= SEQUENCE {
        lldpXdot1dcbxRemETSConPriority      IEEE8021PriorityValue,
        lldpXdot1dcbxRemETSConPriTrafficClass
            LldpXdot1dcbxTrafficClassValue
    }

    lldpXdot1dcbxRemETSConPriority OBJECT-TYPE
        SYNTAX        IEEE8021PriorityValue
        MAX-ACCESS    not-accessible
        STATUS        current
        DESCRIPTION
            "Indicates the priority that is assigned to a traffic
            class."
        REFERENCE
            "D.2.9.6"
        ::= { lldpXdot1dcbxRemETSConPriorityAssignmentEntry 1 }

    lldpXdot1dcbxRemETSConPriTrafficClass OBJECT-TYPE
        SYNTAX        LldpXdot1dcbxTrafficClassValue
        MAX-ACCESS    read-only
        STATUS        current
        DESCRIPTION
            "Indicates the traffic class to which this priority is
            to be assigned."
        REFERENCE
            "D.2.9.6"
        ::= { lldpXdot1dcbxRemETSConPriorityAssignmentEntry 2 }

    lldpXdot1dcbxRemETSConTrafficClassBandwidthTable OBJECT-TYPE
        SYNTAX        SEQUENCE OF
            LldpXdot1dcbxRemETSConTrafficClassBandwidthEntry
        MAX-ACCESS    not-accessible
        STATUS        current
        DESCRIPTION
            "This table contains one row per traffic class.  The
            entry in each row indicates the traffic class to
            which the bandwidth is assigned."
        ::= { lldpXdot1dcbxRemETSConfiguration 3 }

    lldpXdot1dcbxRemETSConTrafficClassBandwidthEntry OBJECT-TYPE
        SYNTAX        LldpXdot1dcbxRemETSConTrafficClassBandwidthEntry
        MAX-ACCESS    not-accessible
        STATUS        current
        DESCRIPTION
            "Indicates a traffic class to Bandwidth assignment."
        INDEX        {
                    lldpV2RemTimeMark,
                    lldpV2RemLocalIfIndex,
```

```
                lldpV2RemLocalDestMACAddress,
                lldpV2RemIndex,
                lldpXdot1dcbxRemETSConTrafficClass
    }
    ::= { lldpXdot1dcbxRemETSConTrafficClassBandwidthTable 1 }

LldpXdot1dcbxRemETSConTrafficClassBandwidthEntry ::= SEQUENCE {
    lldpXdot1dcbxRemETSConTrafficClass
        LldpXdot1dcbxTrafficClassValue,
    lldpXdot1dcbxRemETSConTrafficClassBandwidth
        LldpXdot1dcbxTrafficClassBandwidthValue
}

lldpXdot1dcbxRemETSConTrafficClass OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxTrafficClassValue
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates the traffic class to
        which this bandwidth applies"
    REFERENCE
        "D.2.9.7"
    ::= { lldpXdot1dcbxRemETSConTrafficClassBandwidthEntry 1 }

lldpXdot1dcbxRemETSConTrafficClassBandwidth OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxTrafficClassBandwidthValue
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "Indicates the bandwidth assigned to this traffic class."
    REFERENCE
        "D.2.9.7"
    ::= { lldpXdot1dcbxRemETSConTrafficClassBandwidthEntry 2 }


lldpXdot1dcbxRemETSConTrafficSelectionAlgorithmTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF
        LldpXdot1dcbxRemETSConTrafficSelectionAlgorithmEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "This table contains one row per traffic class.  The
        entry in each row indicates the traffic selction
        algorithm to be used by the traffic class."
    ::= { lldpXdot1dcbxRemETSConfiguration 4 }

lldpXdot1dcbxRemETSConTrafficSelectionAlgorithmEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxRemETSConTrafficSelectionAlgorithmEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates a traffic class to traffic selection
        algorithm assignment."
    INDEX       {
                lldpV2RemTimeMark,
                lldpV2RemLocalIfIndex,
                lldpV2RemLocalDestMACAddress,
                lldpV2RemIndex,
                lldpXdot1dcbxRemETSConTSATrafficClass
```

```
    }
    ::= { lldpXdot1dcbxRemETSConTrafficSelectionAlgorithmTable 1 }

LldpXdot1dcbxRemETSConTrafficSelectionAlgorithmEntry ::= SEQUENCE {
    lldpXdot1dcbxRemETSConTSATrafficClass
        LldpXdot1dcbxTrafficClassValue,
    lldpXdot1dcbxRemETSConTrafficSelectionAlgorithm
        LldpXdot1dcbxTrafficSelectionAlgorithm
}

lldpXdot1dcbxRemETSConTSATrafficClass OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxTrafficClassValue
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates the traffic class that is assigned to a traffic
        selection algorithm."
    REFERENCE
        "D.2.9.8"
    ::= { lldpXdot1dcbxRemETSConTrafficSelectionAlgorithmEntry 1 }

lldpXdot1dcbxRemETSConTrafficSelectionAlgorithm OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxTrafficSelectionAlgorithm
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "Indicates the Traffic Selection Algorithm to which this
        traffic class is to be assigned."
    REFERENCE
        "D.2.9.8"
    ::= { lldpXdot1dcbxRemETSConTrafficSelectionAlgorithmEntry 2 }

--
-- lldpXdot1dcbxRemETSRecommendationTable - Contains the information for
-- the remote system ETS Recommendation TLV.
--
lldpXdot1dcbxRemETSReco OBJECT IDENTIFIER ::=
  { lldpXdot1dcbxRemoteData 2 }

lldpXdot1dcbxRemETSRecoTrafficClassBandwidthTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF
        LldpXdot1dcbxRemETSRecoTrafficClassBandwidthEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "This table contains one row per traffic class.  The
        entry in each row indicates the traffic class to
        which the bandwidth is assigned."
    ::= { lldpXdot1dcbxRemETSReco 1 }

lldpXdot1dcbxRemETSRecoTrafficClassBandwidthEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxRemETSRecoTrafficClassBandwidthEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates a traffic class to Bandwidth assignment."
    INDEX        {
                 lldpV2RemTimeMark,
                 lldpV2RemLocalIfIndex,
```

```
                lldpV2RemLocalDestMACAddress,
                lldpV2RemIndex,
                lldpXdot1dcbxRemETSRecoTrafficClass
    }
    ::= { lldpXdot1dcbxRemETSRecoTrafficClassBandwidthTable 1 }

LldpXdot1dcbxRemETSRecoTrafficClassBandwidthEntry ::= SEQUENCE {
    lldpXdot1dcbxRemETSRecoTrafficClass
        LldpXdot1dcbxTrafficClassValue,
    lldpXdot1dcbxRemETSRecoTrafficClassBandwidth
        LldpXdot1dcbxTrafficClassBandwidthValue
}

lldpXdot1dcbxRemETSRecoTrafficClass OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxTrafficClassValue
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates the traffic class to
        which this bandwidth applies"
    REFERENCE
        "D.2.10.4"
    ::= { lldpXdot1dcbxRemETSRecoTrafficClassBandwidthEntry 1 }

lldpXdot1dcbxRemETSRecoTrafficClassBandwidth OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxTrafficClassBandwidthValue
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "Indicates the bandwidth assigned to this traffic class."
    REFERENCE
        "D.2.10.4"
    ::= { lldpXdot1dcbxRemETSRecoTrafficClassBandwidthEntry 2 }

lldpXdot1dcbxRemETSRecoTrafficSelectionAlgorithmTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF
        LldpXdot1dcbxRemETSRecoTrafficSelectionAlgorithmEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "This table contains one row per traffic class.  The
        entry in each row indicates the traffic selction
        algorithm to be used by the priority."
    ::= { lldpXdot1dcbxRemETSReco 2 }

lldpXdot1dcbxRemETSRecoTrafficSelectionAlgorithmEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxRemETSRecoTrafficSelectionAlgorithmEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates a priority to traffic selection algorithm
         assignment."
    INDEX        {
                 lldpV2RemTimeMark,
                 lldpV2RemLocalIfIndex,
                 lldpV2RemLocalDestMACAddress,
                 lldpV2RemIndex,
                 lldpXdot1dcbxRemETSRecoTSATrafficClass
    }
```

```
    ::= { lldpXdot1dcbxRemETSRecoTrafficSelectionAlgorithmTable 1 }

LldpXdot1dcbxRemETSRecoTrafficSelectionAlgorithmEntry ::= SEQUENCE {
    lldpXdot1dcbxRemETSRecoTSATrafficClass
        LldpXdot1dcbxTrafficClassValue,
    lldpXdot1dcbxRemETSRecoTrafficSelectionAlgorithm
        LldpXdot1dcbxTrafficSelectionAlgorithm
}

lldpXdot1dcbxRemETSRecoTSATrafficClass OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxTrafficClassValue
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates the traffic class that is assigned to a traffic
        selection algorithm."
    REFERENCE
        "D.2.10.5"
    ::= { lldpXdot1dcbxRemETSRecoTrafficSelectionAlgorithmEntry 1 }

lldpXdot1dcbxRemETSRecoTrafficSelectionAlgorithm OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxTrafficSelectionAlgorithm
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "Indicates the Traffic Selection Algorithm to which this
        traffic class is to be assigned."
    REFERENCE
        "D.2.10.5"
    ::= { lldpXdot1dcbxRemETSRecoTrafficSelectionAlgorithmEntry 2 }

--
-- lldpXdot1dcbxRemPFCTable - Contains the information for the remote
-- system PFC TLV.
--
lldpXdot1dcbxRemPFC OBJECT IDENTIFIER ::= { lldpXdot1dcbxRemoteData 3 }

lldpXdot1dcbxRemPFCBasicTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF LldpXdot1dcbxRemPFCBasicEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "This table contains one row per port for the IEEE 802.1
        organizationally defined LLDP PFC TLV on the local
        system known to this agent"
    ::= { lldpXdot1dcbxRemPFC 1 }

lldpXdot1dcbxRemPFCBasicEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxRemPFCBasicEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Information about the IEEE 802.1 organizational defined
        PFC TLV LLDP extension."
    INDEX         {
                  lldpV2RemTimeMark,
                  lldpV2RemLocalIfIndex,
                  lldpV2RemLocalDestMACAddress,
                  lldpV2RemIndex
```

```
    }
    ::= { lldpXdot1dcbxRemPFCBasicTable 1 }

LldpXdot1dcbxRemPFCBasicEntry ::= SEQUENCE {
    lldpXdot1dcbxRemPFCWilling    TruthValue,
    lldpXdot1dcbxRemPFCMBC        TruthValue,
    lldpXdot1dcbxRemPFCCap        LldpXdot1dcbxSupportedCapacity
}

lldpXdot1dcbxRemPFCWilling OBJECT-TYPE
    SYNTAX        TruthValue
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "Indicates if the remote system is willing to accept the
        PFC configuration of the local system."
    REFERENCE
        "D.2.11.3"
    ::= { lldpXdot1dcbxRemPFCBasicEntry 1}

lldpXdot1dcbxRemPFCMBC OBJECT-TYPE
    SYNTAX        TruthValue
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "Indicates if the remote system is capable of bypassing
        MACsec processing when MACsec is disabled."
    REFERENCE
        "D.2.11.4"
    ::= { lldpXdot1dcbxRemPFCBasicEntry 2}

lldpXdot1dcbxRemPFCCap OBJECT-TYPE
    SYNTAX         LldpXdot1dcbxSupportedCapacity
    MAX-ACCESS     read-only
    STATUS         current
    DESCRIPTION
        "Indicates the number of traffic classes on the remote device
        that may simultaneously have PFC enabled."
    REFERENCE
        "D.2.11.5"
    ::= { lldpXdot1dcbxRemPFCBasicEntry 3}

lldpXdot1dcbxRemPFCEnableTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF LldpXdot1dcbxRemPFCEnableEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "This table contains eight entries, one entry per priority,
        indicating if PFC is enabled on the corresponding priority."
    ::= { lldpXdot1dcbxRemPFC 2 }

lldpXdot1dcbxRemPFCEnableEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxRemPFCEnableEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Each entry indicates if PFC is enabled on the
        correponding priority"
    INDEX         {
```

```
                    lldpV2RemTimeMark,
                    lldpV2RemLocalIfIndex,
                    lldpV2RemLocalDestMACAddress,
                    lldpV2RemIndex,
                    lldpXdot1dcbxRemPFCEnablePriority
    }
    ::= { lldpXdot1dcbxRemPFCEnableTable 1 }

LldpXdot1dcbxRemPFCEnableEntry ::= SEQUENCE {
    lldpXdot1dcbxRemPFCEnablePriority   IEEE8021PriorityValue,
    lldpXdot1dcbxRemPFCEnableEnabled    TruthValue
}

lldpXdot1dcbxRemPFCEnablePriority OBJECT-TYPE
    SYNTAX        IEEE8021PriorityValue
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Prioity for which PFC is enabled / disabled"
    ::= { lldpXdot1dcbxRemPFCEnableEntry 1 }

lldpXdot1dcbxRemPFCEnableEnabled OBJECT-TYPE
    SYNTAX        TruthValue
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "Indicates if PFC is enabled on the corresponding priority"
    REFERENCE
        "D.2.11.6"
    ::= { lldpXdot1dcbxRemPFCEnableEntry 2 }

--
-- lldpXdot1dcbxRemApplicationPriorityTable - Contains the information
-- for the remote system Application Priority TLV.
--

lldpXdot1dcbxRemApplicationPriorityAppTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF
        LldpXdot1dcbxRemApplicationPriorityAppEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Table containing entries indicating the priorty to be used
        for a given application"
    ::= { lldpXdot1dcbxRemoteData 4 }

lldpXdot1dcbxRemApplicationPriorityAppEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxRemApplicationPriorityAppEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Entry that indicates the priority to be used for a
        given application."
    INDEX         {
                    lldpV2RemTimeMark,
                    lldpV2RemLocalIfIndex,
                    lldpV2RemLocalDestMACAddress,
                    lldpV2RemIndex,
                    lldpXdot1dcbxRemApplicationPriorityAESelector,
```

```
                    lldpXdot1dcbxRemApplicationPriorityAEProtocol
    }
    ::= { lldpXdot1dcbxRemApplicationPriorityAppTable 1 }

LldpXdot1dcbxRemApplicationPriorityAppEntry ::= SEQUENCE {
    lldpXdot1dcbxRemApplicationPriorityAESelector
        LldpXdot1dcbxAppSelector,
    lldpXdot1dcbxRemApplicationPriorityAEProtocol
        LldpXdot1dcbxAppProtocol,
    lldpXdot1dcbxRemApplicationPriorityAEPriority
        IEEE8021PriorityValue
}

lldpXdot1dcbxRemApplicationPriorityAESelector OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxAppSelector
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates the contents of the protocol object
        (lldpXdot1dcbxRemApplicationPriorityAEProtocol)
        1: Ethertype
        2: Well Known Port number over TCP, or SCTP
        3: Well Known Port number over UDP, or DCCP
        4: Well Known Port number over TCP, SCTP, UDP, and DCCP"
    REFERENCE
        "D.2.12.3"
    ::= { lldpXdot1dcbxRemApplicationPriorityAppEntry 1 }

lldpXdot1dcbxRemApplicationPriorityAEProtocol OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxAppProtocol
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "The protocol indicator of the type indicated by
        lldpXdot1dcbxRemApplicationPriorityAESelector."
    REFERENCE
        "D.2.12.3"
    ::= { lldpXdot1dcbxRemApplicationPriorityAppEntry 2 }

lldpXdot1dcbxRemApplicationPriorityAEPriority OBJECT-TYPE
    SYNTAX        IEEE8021PriorityValue
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "The priority code point that should be used in
        frames transporting the protocol indicated by
        lldpXdot1dcbxRemApplicationPriorityAESelector and
        lldpXdot1dcbxRemApplicationPriorityAEProtocol"
    REFERENCE
        "D.2.12.3"
    ::= { lldpXdot1dcbxRemApplicationPriorityAppEntry 3 }

--------------------------------------------------------------------------
-- IEEE 802.1 - DCBX Administrative Information
--------------------------------------------------------------------------

--
-- lldpXdot1dcbxAdminETSConfigurationTable - Contains the information
-- for the ETS Configuration TLV.
```

```
--
lldpXdot1dcbxAdminETSConfiguration OBJECT IDENTIFIER
    ::= { lldpXdot1dcbxAdminData 1 }

lldpXdot1dcbxAdminETSBasicConfigurationTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF
        LldpXdot1dcbxAdminETSBasicConfigurationEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "This table contains one row per port for the IEEE 802.1
        organizationally defined LLDP ETS Configuration TLV
        on the local system known to this agent"
    ::= { lldpXdot1dcbxAdminETSConfiguration 1 }

lldpXdot1dcbxAdminETSBasicConfigurationEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxAdminETSBasicConfigurationEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Information about the IEEE 802.1 organizational defined
        ETS Configuration TLV LLDP extension."
    INDEX         { lldpV2LocPortIfIndex }
    ::= { lldpXdot1dcbxAdminETSBasicConfigurationTable 1 }

LldpXdot1dcbxAdminETSBasicConfigurationEntry ::= SEQUENCE {
    lldpXdot1dcbxAdminETSConCreditBasedShaperSupport      TruthValue,
    lldpXdot1dcbxAdminETSConTrafficClassesSupported
        LldpXdot1dcbxSupportedCapacity,
    lldpXdot1dcbxAdminETSConWilling    TruthValue
}

lldpXdot1dcbxAdminETSConCreditBasedShaperSupport OBJECT-TYPE
    SYNTAX        TruthValue
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "Indicates support for the credit-based shaper Traffic
        Selection Algorithm."
    REFERENCE
        "D.2.9.4"
    ::= { lldpXdot1dcbxAdminETSBasicConfigurationEntry 1 }

lldpXdot1dcbxAdminETSConTrafficClassesSupported OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxSupportedCapacity
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
        "Indicates the number of traffic classes supported."
    REFERENCE
        "D.2.9.5"
    ::= { lldpXdot1dcbxAdminETSBasicConfigurationEntry 2 }

lldpXdot1dcbxAdminETSConWilling OBJECT-TYPE
    SYNTAX        TruthValue
    MAX-ACCESS    read-write
    STATUS        current
    DESCRIPTION
        "Indicates if the local system is willing to accept the
```

```
        ETS configuration recommended by the remote system."
    REFERENCE
        "D.2.9.3"
    DEFVAL         { false }
    ::= { lldpXdot1dcbxAdminETSBasicConfigurationEntry 3 }

lldpXdot1dcbxAdminETSConPriorityAssignmentTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF
        LldpXdot1dcbxAdminETSConPriorityAssignmentEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "This table contains one row per priority.  The entry in each
        row indicates the traffic class to which the priority is
        assigned."
    ::= { lldpXdot1dcbxAdminETSConfiguration 2 }

lldpXdot1dcbxAdminETSConPriorityAssignmentEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxAdminETSConPriorityAssignmentEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates a priority to traffic class assignment."
    INDEX        {
                 lldpV2LocPortIfIndex,
                 lldpXdot1dcbxAdminETSConPriority
    }
    ::= { lldpXdot1dcbxAdminETSConPriorityAssignmentTable 1 }

LldpXdot1dcbxAdminETSConPriorityAssignmentEntry ::= SEQUENCE {
    lldpXdot1dcbxAdminETSConPriority        IEEE8021PriorityValue,
    lldpXdot1dcbxAdminETSConPriTrafficClass
        LldpXdot1dcbxTrafficClassValue
}

lldpXdot1dcbxAdminETSConPriority OBJECT-TYPE
    SYNTAX        IEEE8021PriorityValue
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates the priority that is assigned to a traffic
        class."
    REFERENCE
        "D.2.9.6"
    ::= { lldpXdot1dcbxAdminETSConPriorityAssignmentEntry 1 }

lldpXdot1dcbxAdminETSConPriTrafficClass OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxTrafficClassValue
    MAX-ACCESS    read-write
    STATUS        current
    DESCRIPTION
        "Indicates the traffic class to which this priority is
        to be assigned."
    REFERENCE
        "D.2.9.6"
    DEFVAL      { 0 }
    ::= { lldpXdot1dcbxAdminETSConPriorityAssignmentEntry 2 }

lldpXdot1dcbxAdminETSConTrafficClassBandwidthTable OBJECT-TYPE
```

```
        SYNTAX        SEQUENCE OF
            LldpXdot1dcbxAdminETSConTrafficClassBandwidthEntry
        MAX-ACCESS    not-accessible
        STATUS        current
        DESCRIPTION
            "This table contains one row per traffic class.  The
            entry in each row indicates the traffic class to
            which the bandwidth is assigned."
        ::= { lldpXdot1dcbxAdminETSConfiguration 3 }

    lldpXdot1dcbxAdminETSConTrafficClassBandwidthEntry OBJECT-TYPE
        SYNTAX      LldpXdot1dcbxAdminETSConTrafficClassBandwidthEntry
        MAX-ACCESS    not-accessible
        STATUS        current
        DESCRIPTION
            "Indicates a traffic class to Bandwidth assignment."
        INDEX        {
                    lldpV2LocPortIfIndex,
                    lldpXdot1dcbxAdminETSConTrafficClass
        }
        ::= { lldpXdot1dcbxAdminETSConTrafficClassBandwidthTable 1 }

    LldpXdot1dcbxAdminETSConTrafficClassBandwidthEntry ::= SEQUENCE {
        lldpXdot1dcbxAdminETSConTrafficClass
            LldpXdot1dcbxTrafficClassValue,
        lldpXdot1dcbxAdminETSConTrafficClassBandwidth
            LldpXdot1dcbxTrafficClassBandwidthValue
    }

    lldpXdot1dcbxAdminETSConTrafficClass OBJECT-TYPE
        SYNTAX        LldpXdot1dcbxTrafficClassValue
        MAX-ACCESS    not-accessible
        STATUS        current
        DESCRIPTION
            "Indicates the traffic class to
            which this bandwidth applies"
        REFERENCE
            "D.2.9.7"
        ::= { lldpXdot1dcbxAdminETSConTrafficClassBandwidthEntry 1 }

    lldpXdot1dcbxAdminETSConTrafficClassBandwidth OBJECT-TYPE
        SYNTAX        LldpXdot1dcbxTrafficClassBandwidthValue
        MAX-ACCESS    read-write
        STATUS        current
        DESCRIPTION
            "Indicates the bandwidth assigned to this traffic class.
            The sum of the bandwidths assigned to a given port is
            required at all times to eqaul 100.  An operation that
            attempts to change this table such that the bandwidth
            entires do not total 100 shall be rejected. An implication
            of this is that modification of this table requires that
            multiple set operations be included in a single SNMP PDU,
            commonly referred to as an MSET operation, to perform
            simultaneous set operations to keep the sum at 100.  Any
            attempt to change a single entry in this table will result
            in the operation being rejected since entries in the
            table referring to the given port will no longer
            sum to 100."
        REFERENCE
```

```
        "D.2.9.7"
    ::= { lldpXdot1dcbxAdminETSConTrafficClassBandwidthEntry 2 }

lldpXdot1dcbxAdminETSConTrafficSelectionAlgorithmTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF
        LldpXdot1dcbxAdminETSConTrafficSelectionAlgorithmEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "This table contains one row per traffic class.  The entry
        in each row indicates the traffic selction algorithm to
        be used by the priority."
    ::= { lldpXdot1dcbxAdminETSConfiguration 4 }

lldpXdot1dcbxAdminETSConTrafficSelectionAlgorithmEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxAdminETSConTrafficSelectionAlgorithmEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates a traffic class to traffic selection
        algorithm assignment."
    INDEX       {
                lldpV2LocPortIfIndex,
                lldpXdot1dcbxAdminETSConTSATrafficClass
    }
    ::= { lldpXdot1dcbxAdminETSConTrafficSelectionAlgorithmTable 1 }

LldpXdot1dcbxAdminETSConTrafficSelectionAlgorithmEntry ::= SEQUENCE {
    lldpXdot1dcbxAdminETSConTSATrafficClass
        LldpXdot1dcbxTrafficClassValue,
    lldpXdot1dcbxAdminETSConTrafficSelectionAlgorithm
        LldpXdot1dcbxTrafficSelectionAlgorithm
}

lldpXdot1dcbxAdminETSConTSATrafficClass OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxTrafficClassValue
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates the traffic class that is assigned
        to a traffic selection algorithm."
    REFERENCE
        "D.2.9.8"
    ::= { lldpXdot1dcbxAdminETSConTrafficSelectionAlgorithmEntry 1 }

lldpXdot1dcbxAdminETSConTrafficSelectionAlgorithm OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxTrafficSelectionAlgorithm
    MAX-ACCESS    read-write
    STATUS        current
    DESCRIPTION
        "Indicates the Traffic Selection Algorithm to which this
        traffic class is to be assigned."
    REFERENCE
        "D.2.9.8"
    ::= { lldpXdot1dcbxAdminETSConTrafficSelectionAlgorithmEntry 2 }


--
-- lldpXdot1dcbxAdminETSRecommendationTable - Contains the information
```

```
-- for the ETS Recommendation TLV.
--
lldpXdot1dcbxAdminETSReco OBJECT IDENTIFIER ::=
  { lldpXdot1dcbxAdminData 2 }

lldpXdot1dcbxAdminETSRecoTrafficClassBandwidthTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF
        LldpXdot1dcbxAdminETSRecoTrafficClassBandwidthEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "This table contains one row per traffic class.  The
        entry in each row indicates the traffic class to
        which the bandwidth is assigned."
    ::= { lldpXdot1dcbxAdminETSReco 1 }

lldpXdot1dcbxAdminETSRecoTrafficClassBandwidthEntry OBJECT-TYPE
    SYNTAX      LldpXdot1dcbxAdminETSRecoTrafficClassBandwidthEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates a traffic class to Bandwidth assignment."
    INDEX        {
                 lldpV2LocPortIfIndex,
                 lldpXdot1dcbxAdminETSRecoTrafficClass
    }
    ::= { lldpXdot1dcbxAdminETSRecoTrafficClassBandwidthTable 1 }

LldpXdot1dcbxAdminETSRecoTrafficClassBandwidthEntry ::= SEQUENCE {
    lldpXdot1dcbxAdminETSRecoTrafficClass
        LldpXdot1dcbxTrafficClassValue,
    lldpXdot1dcbxAdminETSRecoTrafficClassBandwidth
        LldpXdot1dcbxTrafficClassBandwidthValue
}

lldpXdot1dcbxAdminETSRecoTrafficClass OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxTrafficClassValue
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates the traffic class to
        which this bandwidth applies"
    REFERENCE
        "D.2.10.4"
    ::= { lldpXdot1dcbxAdminETSRecoTrafficClassBandwidthEntry 1 }

lldpXdot1dcbxAdminETSRecoTrafficClassBandwidth OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxTrafficClassBandwidthValue
    MAX-ACCESS    read-write
    STATUS        current
    DESCRIPTION
        "Indicates the bandwidth assigned to this traffic class.
        The sum of the bandwidths assigned to a given port is
        required at all times to eqaul 100.  An operation that
        attempts to change this table such that the bandwidth
        entires do not total 100 shall be rejected. An implication
        of this is that modification of this table requires that
        multiple set operations be included in a single SNMP PDU,
        commonly referred to as an MSET operation, to perform
```

```
        simultaneous set operations to keep the sum at 100.  Any
        attempt to change a single entry in this table will result
        in the operation being rejected since entries in the
        table referring to the given port will no longer
        sum to 100."

    REFERENCE
        "D.2.10.4"
    ::= { lldpXdot1dcbxAdminETSRecoTrafficClassBandwidthEntry 2 }

lldpXdot1dcbxAdminETSRecoTrafficSelectionAlgorithmTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF
        LldpXdot1dcbxAdminETSRecoTrafficSelectionAlgorithmEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "This table contains one row per traffic class.  The entry
        in each row indicates the traffic selction algorithm to
        be used by the traffic class."
    ::= { lldpXdot1dcbxAdminETSReco 2 }

lldpXdot1dcbxAdminETSRecoTrafficSelectionAlgorithmEntry OBJECT-TYPE
    SYNTAX    LldpXdot1dcbxAdminETSRecoTrafficSelectionAlgorithmEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates a traffic class to traffic selection
        algorithm assignment."
    INDEX        {
                lldpV2LocPortIfIndex,
                lldpXdot1dcbxAdminETSRecoTSATrafficClass
    }
    ::= { lldpXdot1dcbxAdminETSRecoTrafficSelectionAlgorithmTable 1 }

LldpXdot1dcbxAdminETSRecoTrafficSelectionAlgorithmEntry ::= SEQUENCE {
    lldpXdot1dcbxAdminETSRecoTSATrafficClass
        LldpXdot1dcbxTrafficClassValue,
    lldpXdot1dcbxAdminETSRecoTrafficSelectionAlgorithm
        LldpXdot1dcbxTrafficSelectionAlgorithm
}

lldpXdot1dcbxAdminETSRecoTSATrafficClass OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxTrafficClassValue
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates the traffic class that is assigned to a traffic
        selection algorithm."
    REFERENCE
        "D.2.10.5"
    ::= { lldpXdot1dcbxAdminETSRecoTrafficSelectionAlgorithmEntry 1 }

lldpXdot1dcbxAdminETSRecoTrafficSelectionAlgorithm OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxTrafficSelectionAlgorithm
    MAX-ACCESS    read-write
    STATUS        current
    DESCRIPTION
        "Indicates the Traffic Selection Algorithm to which this
        traffic class is to be assigned."
```

```
        REFERENCE
            "D.2.10.5"
        ::= { lldpXdot1dcbxAdminETSRecoTrafficSelectionAlgorithmEntry 2 }

    --
    -- lldpXdot1dcbxAdminPFCTable - Contains the information for the PFC
    -- Configuration TLV.
    --
    lldpXdot1dcbxAdminPFC OBJECT IDENTIFIER ::= { lldpXdot1dcbxAdminData 3 }

    lldpXdot1dcbxAdminPFCBasicTable OBJECT-TYPE
        SYNTAX        SEQUENCE OF LldpXdot1dcbxAdminPFCBasicEntry
        MAX-ACCESS    not-accessible
        STATUS        current
        DESCRIPTION
            "This table contains one row per port for the IEEE 802.1
            organizationally defined LLDP PFC TLV on the local
            system known to this agent"
        ::= { lldpXdot1dcbxAdminPFC 1 }

    lldpXdot1dcbxAdminPFCBasicEntry OBJECT-TYPE
        SYNTAX        LldpXdot1dcbxAdminPFCBasicEntry
        MAX-ACCESS    not-accessible
        STATUS        current
        DESCRIPTION
            "Information about the IEEE 802.1 organizational defined
            PFC TLV LLDP extension."
        INDEX         { lldpV2LocPortIfIndex }
        ::= { lldpXdot1dcbxAdminPFCBasicTable 1 }

    LldpXdot1dcbxAdminPFCBasicEntry ::= SEQUENCE {
        lldpXdot1dcbxAdminPFCWilling    TruthValue,
        lldpXdot1dcbxAdminPFCMBC        TruthValue,
        lldpXdot1dcbxAdminPFCCap        LldpXdot1dcbxSupportedCapacity
    }

    lldpXdot1dcbxAdminPFCWilling OBJECT-TYPE
        SYNTAX        TruthValue
        MAX-ACCESS    read-write
        STATUS        current
        DESCRIPTION
            "Indicates if the local system is willing to accept the
            PFC configuration of the remote system."
        REFERENCE
            "D.2.11.3"
        DEFVAL      { false }
        ::= { lldpXdot1dcbxAdminPFCBasicEntry 1}

    lldpXdot1dcbxAdminPFCMBC OBJECT-TYPE
        SYNTAX        TruthValue
        MAX-ACCESS    read-only
        STATUS        current
        DESCRIPTION
            "Indicates if the local system is capable of bypassing
            MACsec processing when MACsec is disabled."
        REFERENCE
            "D.2.11.4"
        ::= { lldpXdot1dcbxAdminPFCBasicEntry 2}
```

```
lldpXdot1dcbxAdminPFCCap OBJECT-TYPE
    SYNTAX         LldpXdot1dcbxSupportedCapacity
    MAX-ACCESS    read-only
    STATUS    current
    DESCRIPTION
        "Indicates the number of traffic classes on the local device
        that may simultaneously have PFC enabled.

        Note that this typically indicates a physical limitation of the
        device.  However, some devices may allow this parameter to be
        administratively configured, in which case the MAX-ACCESS
        should be changed to read-write with and an appropriate
        DEFVAL added."
    REFERENCE
        "D.2.11.5"
    ::= { lldpXdot1dcbxAdminPFCBasicEntry 3}

lldpXdot1dcbxAdminPFCEnableTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF LldpXdot1dcbxAdminPFCEnableEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "This table contains eight entries, one entry per priority,
        indicating if PFC is enabled on the corresponding priority."
    ::= { lldpXdot1dcbxAdminPFC 2 }

lldpXdot1dcbxAdminPFCEnableEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxAdminPFCEnableEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Each entry indicates if PFC is enabled on the
        correponding priority"
    INDEX {
        lldpV2LocPortIfIndex,
        lldpXdot1dcbxAdminPFCEnablePriority
    }
    ::= { lldpXdot1dcbxAdminPFCEnableTable 1 }

LldpXdot1dcbxAdminPFCEnableEntry ::= SEQUENCE {
    lldpXdot1dcbxAdminPFCEnablePriority    IEEE8021PriorityValue,
    lldpXdot1dcbxAdminPFCEnableEnabled    TruthValue
    }

lldpXdot1dcbxAdminPFCEnablePriority OBJECT-TYPE
    SYNTAX        IEEE8021PriorityValue
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Prioity for which PFC is enabled / disabled"
    ::= { lldpXdot1dcbxAdminPFCEnableEntry 1 }

lldpXdot1dcbxAdminPFCEnableEnabled OBJECT-TYPE
    SYNTAX        TruthValue
    MAX-ACCESS    read-write
    STATUS        current
    DESCRIPTION
        "Indicates if PFC is enabled on the corresponding priority"
    REFERENCE
```

```
        "D.2.11.6"
    DEFVAL      { false }
    ::= { lldpXdot1dcbxAdminPFCEnableEntry 2 }

--
-- lldpXdot1dcbxAdminApplicationPriorityTable - Contains the
-- information for the Application Priority TLV.
--

lldpXdot1dcbxAdminApplicationPriorityAppTable OBJECT-TYPE
    SYNTAX        SEQUENCE OF
        LldpXdot1dcbxAdminApplicationPriorityAppEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Table containing entries indicating the priorty to be used
        for a given application"
    ::= { lldpXdot1dcbxAdminData 4 }

lldpXdot1dcbxAdminApplicationPriorityAppEntry OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxAdminApplicationPriorityAppEntry
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Entry that indicates the priority to be used for a
        given application."
    INDEX         {
                  lldpV2LocPortIfIndex,
                  lldpXdot1dcbxAdminApplicationPriorityAESelector,
                  lldpXdot1dcbxAdminApplicationPriorityAEProtocol
    }
    ::= { lldpXdot1dcbxAdminApplicationPriorityAppTable 1 }

LldpXdot1dcbxAdminApplicationPriorityAppEntry ::= SEQUENCE {
    lldpXdot1dcbxAdminApplicationPriorityAESelector
        LldpXdot1dcbxAppSelector,
    lldpXdot1dcbxAdminApplicationPriorityAEProtocol
        LldpXdot1dcbxAppProtocol,
    lldpXdot1dcbxAdminApplicationPriorityAEPriority
        IEEE8021PriorityValue
}

lldpXdot1dcbxAdminApplicationPriorityAESelector OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxAppSelector
    MAX-ACCESS    not-accessible
    STATUS        current
    DESCRIPTION
        "Indicates the contents of the protocol object
        (lldpXdot1dcbxAdminApplicationPriorityAEProtocol)
        1: Ethertype
        2: Well Known Port number over TCP, or SCTP
        3: Well Known Port number over UDP, or DCCP
        4: Well Known Port number over TCP, SCTP, UDP, and DCCP"
    REFERENCE
        "D.2.11.6"
    ::= { lldpXdot1dcbxAdminApplicationPriorityAppEntry 1 }

lldpXdot1dcbxAdminApplicationPriorityAEProtocol OBJECT-TYPE
    SYNTAX        LldpXdot1dcbxAppProtocol
```

```
        MAX-ACCESS    not-accessible
        STATUS        current
        DESCRIPTION
            "The protocol indicator of the type indicated by
            lldpXdot1dcbxAdminApplicationPriorityAESelector."
        REFERENCE
            "D.2.11.6"
        ::= { lldpXdot1dcbxAdminApplicationPriorityAppEntry 2 }

    lldpXdot1dcbxAdminApplicationPriorityAEPriority OBJECT-TYPE
        SYNTAX        IEEE8021PriorityValue
        MAX-ACCESS    read-create
        STATUS        current
        DESCRIPTION
            "The priority code point that should be used in
            frames transporting the protocol indicated by
            lldpXdot1dcbxAdminApplicationPriorityAESelector and
            lldpXdot1dcbxAdminApplicationPriorityAEProtocol"
        REFERENCE
            "D.2.11.6"
        ::= { lldpXdot1dcbxAdminApplicationPriorityAppEntry 3 }

    -------------------------------------------------------------------------
    -- IEEE 802.1 - DCBX Conformance Information
    -------------------------------------------------------------------------
    lldpXdot1dcbxConformance OBJECT IDENTIFIER ::= { lldpV2Xdot1MIB 6 }
    lldpXdot1dcbxCompliances
        OBJECT IDENTIFIER ::= { lldpXdot1dcbxConformance 1 }
    lldpXdot1dcbxGroups
        OBJECT IDENTIFIER ::= { lldpXdot1dcbxConformance 2 }

    --
    -- Compliance Statements
    --

    lldpXdot1dcbxCompliance MODULE-COMPLIANCE
        STATUS        current
        DESCRIPTION
             "A compliance statement for SNMP entities that implement
             the IEEE 802.1 organizationally defined DCBX LLDP
             extension MIB.

             This group is mandatory for agents which implement Enhanced
             Transmission Selection."
        MODULE        -- this module
            MANDATORY-GROUPS  { lldpXdot1dcbxETSGroup,
                                lldpXdot1dcbxPFCGroup,
                                lldpXdot1dcbxApplicationPriorityGroup,
                                ifGeneralInformationGroup
            }
        ::= { lldpXdot1dcbxCompliances 1 }

    --
    -- MIB Groupings
    --

    lldpXdot1dcbxETSGroup  OBJECT-GROUP
        OBJECTS {
            lldpXdot1dcbxConfigETSConfigurationTxEnable,
```

```
            lldpXdot1dcbxConfigETSRecommendationTxEnable,
            lldpXdot1dcbxLocETSConCreditBasedShaperSupport,
            lldpXdot1dcbxLocETSConTrafficClassesSupported,
            lldpXdot1dcbxLocETSConWilling,
            lldpXdot1dcbxLocETSConPriTrafficClass,
            lldpXdot1dcbxLocETSConTrafficClassBandwidth,
            lldpXdot1dcbxLocETSConTrafficSelectionAlgorithm,
            lldpXdot1dcbxLocETSRecoTrafficClassBandwidth,
            lldpXdot1dcbxLocETSRecoTrafficSelectionAlgorithm,
            lldpXdot1dcbxRemETSConCreditBasedShaperSupport,
            lldpXdot1dcbxRemETSConTrafficClassesSupported,
            lldpXdot1dcbxRemETSConWilling,
            lldpXdot1dcbxRemETSConPriTrafficClass,
            lldpXdot1dcbxRemETSConTrafficClassBandwidth,
            lldpXdot1dcbxRemETSConTrafficSelectionAlgorithm,
            lldpXdot1dcbxRemETSRecoTrafficClassBandwidth,
            lldpXdot1dcbxRemETSRecoTrafficSelectionAlgorithm,
            lldpXdot1dcbxAdminETSConCreditBasedShaperSupport,
            lldpXdot1dcbxAdminETSConTrafficClassesSupported,
            lldpXdot1dcbxAdminETSConWilling,
            lldpXdot1dcbxAdminETSConPriTrafficClass,
            lldpXdot1dcbxAdminETSConTrafficClassBandwidth,
            lldpXdot1dcbxAdminETSConTrafficSelectionAlgorithm,
            lldpXdot1dcbxAdminETSRecoTrafficClassBandwidth,
            lldpXdot1dcbxAdminETSRecoTrafficSelectionAlgorithm
        }
        STATUS  current
        DESCRIPTION
            "The collection of objects used for Enhanced
            Transmission Selection."
        ::= { lldpXdot1dcbxGroups 1 }

    lldpXdot1dcbxPFCGroup  OBJECT-GROUP
        OBJECTS {
            lldpXdot1dcbxConfigPFCTxEnable,
            lldpXdot1dcbxLocPFCWilling,
            lldpXdot1dcbxLocPFCMBC,
            lldpXdot1dcbxLocPFCCap,
            lldpXdot1dcbxLocPFCEnableEnabled,
            lldpXdot1dcbxRemPFCWilling,
            lldpXdot1dcbxRemPFCMBC,
            lldpXdot1dcbxRemPFCCap,
            lldpXdot1dcbxRemPFCEnableEnabled,
            lldpXdot1dcbxAdminPFCWilling,
            lldpXdot1dcbxAdminPFCMBC,
            lldpXdot1dcbxAdminPFCCap,
            lldpXdot1dcbxAdminPFCEnableEnabled
        }
        STATUS  current
        DESCRIPTION
            "The collection of objects used for Priority-
            base Flow Control."
        ::= { lldpXdot1dcbxGroups 2 }

    lldpXdot1dcbxApplicationPriorityGroup  OBJECT-GROUP
        OBJECTS {
            lldpXdot1dcbxConfigApplicationPriorityTxEnable,
            lldpXdot1dcbxLocApplicationPriorityAEPriority,
            lldpXdot1dcbxRemApplicationPriorityAEPriority,
```

```
        lldpXdot1dcbxAdminApplicationPriorityAEPriority
    }
    STATUS  current
    DESCRIPTION
        "The collection of objects used for Application
        priority."
    ::= { lldpXdot1dcbxGroups 3 }
-------------------------------------------------------------------------
-------------------------------------------------------------------------
--
-- Organizationally Defined Information Extension - IEEE 802.1
-- Definitions to support Port Extension
-- peSet TLV set (Table D-1)
--
-------------------------------------------------------------------------
-------------------------------------------------------------------------
lldpXdot1PeMIB      OBJECT IDENTIFIER ::= { lldpV2Xdot1MIB 7 }
lldpXdot1PeObjects  OBJECT IDENTIFIER ::= { lldpXdot1PeMIB 1 }

-- Port Extension 802.1 MIB Extension groups

lldpXdot1PeConfig     OBJECT IDENTIFIER ::= { lldpXdot1PeObjects 1 }
lldpXdot1PeLocalData  OBJECT IDENTIFIER ::= { lldpXdot1PeObjects 2 }
lldpXdot1PeRemoteData OBJECT IDENTIFIER ::= { lldpXdot1PeObjects 3 }

-------------------------------------------------------------------------
-- IEEE 802.1 - Configuration for the peSet TLV set
-------------------------------------------------------------------------

--
-- lldpV2Xdot1PeConfigPortExtensionTable : configure the transmission
-- of the Port Extension TLVs on a set of ports.
--
lldpXdot1PeConfigPortExtensionTable OBJECT-TYPE
     SYNTAX SEQUENCE OF LldpXdot1PeConfigPortExtensionEntry
     MAX-ACCESS not-accessible
     STATUS current
     DESCRIPTION
          "A table that controls selection of LLDP Port Extension
          TLVs to be transmitted on individual ports."
::= { lldpXdot1PeConfig 1 }

lldpXdot1PeConfigPortExtensionEntry OBJECT-TYPE
     SYNTAX LldpXdot1PeConfigPortExtensionEntry
     MAX-ACCESS not-accessible
     STATUS current
     DESCRIPTION
          "LLDP configuration information that specifies Port
          Exension configuration.
          This configuration object augments the
          lldpV2Xdot1LocPortExtensionEntry, therefore it is
          only present along with the associated
          lldpV2Xdot1LocPortExtensionEntry entry.
          Each active lldpV2Xdot1ConfigPortExensionEntry must be
          restored from non-volatile storage (along with the
          corresponding lldpV2Xdot1LocPortExtensionEntry) after a
          re-initialization of the management system."
     AUGMENTS      { lldpV2PortConfigEntry }
::= { lldpXdot1PeConfigPortExtensionTable 1 }
```

```
LldpXdot1PeConfigPortExtensionEntry ::= SEQUENCE {
     lldpXdot1PeConfigPortExtensionTxEnable TruthValue
     }

lldpXdot1PeConfigPortExtensionTxEnable OBJECT-TYPE
     SYNTAX TruthValue
     MAX-ACCESS read-write
     STATUS current
     DESCRIPTION
          "The lldpXdot1PeConfigPortExtensionTxEnable, which is
          defined as a truth value and configured by the network
          management, determines whether the IEEE 802.1
          organizationally defined Port Extension TLV transmission
          is allowed on a given LLDP transmission capable port.
          The value of this object must be restored from
          non-volatile storage after a re-initialization of the
          management system."
     REFERENCE
          "D.8 of 802.1Q"
     DEFVAL { false }
::= { lldpXdot1PeConfigPortExtensionEntry 1 }

-----------------------------------------------------------------------
-- IEEE 802.1 - Port Extension Local System Information
-----------------------------------------------------------------------
---
---
--- lldpXdot1PeLocPortExtensionTable: Port Extension Information Table
---
---
lldpXdot1PeLocPortExtensionTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpXdot1PeLocPortExtensionEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "This table contains one row per port of Port Extension
            information (as a part of the LLDP 802.1 organizational
            extension) on the local system known to this agent."
    ::= { lldpXdot1PeLocalData 1 }

lldpXdot1PeLocPortExtensionEntry OBJECT-TYPE
    SYNTAX      LldpXdot1PeLocPortExtensionEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "Port Extension information about a particular
            Port Extender Port."
    INDEX   { lldpV2LocPortIfIndex }
    ::= { lldpXdot1PeLocPortExtensionTable 1 }

LldpXdot1PeLocPortExtensionEntry ::= SEQUENCE {
      lldpXdot1PeLocPECascadePortPriority  Unsigned32,
      lldpXdot1PeLocPEAddress              MacAddress,
      lldpXdot1PeLocPECSPAddress           MacAddress
}

lldpXdot1PeLocPECascadePortPriority OBJECT-TYPE
    SYNTAX      Unsigned32 (0..255)
```

```
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
            "Contains the cascade port priority."
    REFERENCE
            "D.8"
    ::= { lldpXdot1PeLocPortExtensionEntry 1 }

lldpXdot1PeLocPEAddress OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "This object contains the MAC address that
            uniquely identifies the Port Extender."
    REFERENCE
            "D.8"
    ::= { lldpXdot1PeLocPortExtensionEntry 2 }

lldpXdot1PeLocPECSPAddress OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "This object contains the MAC address to be used
            for the Port Extension control and status protocol."
    REFERENCE
            "D.8"
    ::= { lldpXdot1PeLocPortExtensionEntry 3 }

-----------------------------------------------------------------------
-- IEEE 802.1 - Port Extension Remote System Information
-----------------------------------------------------------------------
---
---
--- lldpXdot1PeRemPortExtensionTable: Port Extension Information Table
---
---
lldpXdot1PeRemPortExtensionTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpXdot1PeRemPortExtensionEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "This table contains Port Extension information
            (as a part of the LLDP IEEE 802.1 organizational extension)
            of the remote system."
    ::= { lldpXdot1PeRemoteData 1 }

lldpXdot1PeRemPortExtensionEntry OBJECT-TYPE
    SYNTAX      LldpXdot1PeRemPortExtensionEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "Port Extension information about remote systems port
            component."
    INDEX   { lldpV2RemTimeMark,
              lldpV2RemLocalIfIndex,
              lldpV2RemLocalDestMACAddress,
              lldpV2RemIndex }
```

```
    ::= { lldpXdot1PeRemPortExtensionTable 1 }

LldpXdot1PeRemPortExtensionEntry ::= SEQUENCE {
            lldpXdot1PeRemPECascadePortPriority Unsigned32,
            lldpXdot1PeRemPEAddress             MacAddress,
            lldpXdot1PeRemPECSPAddress          MacAddress
}

lldpXdot1PeRemPECascadePortPriority OBJECT-TYPE
    SYNTAX      Unsigned32 (0..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "The cascade port priority."
    REFERENCE
            "D.8"
    ::= { lldpXdot1PeRemPortExtensionEntry 1 }

lldpXdot1PeRemPEAddress OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "This object contains the MAC address that
            uniquely identifies the Port Extender."
    REFERENCE
            "D.8"
    ::= { lldpXdot1PeRemPortExtensionEntry 2 }

lldpXdot1PeRemPECSPAddress OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "This object contains the MAC address to be used
            for the Port Extension Control and Status Protocol."
    REFERENCE
            "D.8"
    ::= { lldpXdot1PeRemPortExtensionEntry 3 }

-----------------------------------------------------------------------
-- IEEE 802.1 - Port Extension Conformance Information
-----------------------------------------------------------------------

lldpXdot1PeConformance OBJECT IDENTIFIER ::= { lldpV2Xdot1MIB 8 }

lldpXdot1PeCompliances
    OBJECT IDENTIFIER ::= { lldpXdot1PeConformance 1 }
lldpXdot1PeGroups OBJECT IDENTIFIER ::= { lldpXdot1PeConformance 2 }

--
-- Port Extension - Compliance Statements
--

lldpXdot1PeCompliance MODULE-COMPLIANCE
    STATUS        current
    DESCRIPTION
         "A compliance statement for SNMP entities that implement
         the IEEE 802.1 organizationally defined Port Extension
```

```
            LLDP extension MIB.

            This group is mandatory for agents that implement the
            Port Extension peSet TLV set."
        MODULE        -- this module
            MANDATORY-GROUPS  { lldpXdot1PeGroup,
                                ifGeneralInformationGroup }
        ::= { lldpXdot1PeCompliances 1 }

--
-- Port Extension - MIB groupings
--

lldpXdot1PeGroup  OBJECT-GROUP
    OBJECTS {
        lldpXdot1PeConfigPortExtensionTxEnable,
        lldpXdot1PeLocPECascadePortPriority,
        lldpXdot1PeLocPEAddress,
        lldpXdot1PeLocPECSPAddress,
        lldpXdot1PeRemPECascadePortPriority,
        lldpXdot1PeRemPEAddress,
        lldpXdot1PeRemPECSPAddress
    }
    STATUS  current
    DESCRIPTION
        "The collection of objects that support the
        Port Extension peSet TLV set."
    ::= { lldpXdot1PeGroups 1 }

END
```

D.5.3 Major capabilities and options

Insert the following TLV at the end of the table in D.5.3:

Item	Feature	Status	References	Support
dot1peSet	Is the IEEE 802.1 Organizationally Specific TLV peSet implemented?	O.3	D.1, Table D.1	Yes []
dot1petlv	Is each TLV in the IEEE 802.1 Organizationally specific TLV peSet implemented? Port Extension TLV	 peSet: M	 D.2.15	 Yes [] No []

Annex Z (informative)

COMMENTARY

<<Editor's Note: This is a temporary Annex intended to record issues/resolutions thereof as the project proceeds. It will be removed prior to Sponsor ballot, and should be ignored for the purpose of TG/WG ballot.>>

Z.1 Length of M-TAG

The M-TAG currently contains a 16-bit reserved field for the purpose of creating a tag that is eight octet in length. The contents of this tag could fit in a six octet field; however, many expressed a strong desire to make the tags multiples of four octets in length to facilitate the internal bus sizes within ASICs. During the March 2010 plenary meeting, concern was raised that 32-bits of reserved field was excessive and could cause issues in the future. No consensus was reached, therefore the tag continues to be specified as eight octets for now.

Update for draft 0.3: Since no comments were received on this issue during the ballot of the 0.2 draft, the editor believes this issue closed.

Update for draft 0.4: There was strong consensus that keeping the tag length a multiple of four bytes is desirable.

Update for draft 0.5: This item is now currently moot since the M-TAG was removed. The new E-TAG has a similar issue which is discussed in Z.7.

Z.2 Determination of the M-channel identifier.

During the March 2010 meeting there was discussion regarding the best way to integrate determination of the MCID into the filtering database. At that time, it was the editors opinion that adding this field to the existing tables within the filtering database was the best solution. Paul Congdon suggested that a better approach would be to create a separate table that uses the “pattern” of the Ports to which a frame is to be forwarded as a key to look-up the MCID. After some thought, the editor concurs with this approach.

The one downside of this approach is that it makes the implementation appear to be much more complex than it actually is. In most real implementations, the various filtering tables described in this specification are reduced to a single forwarding table. In general, for a frame that requires multicast, the forwarding table refers to a bit mask of Ports to which the frame is to be forwarded. The MCID may simply be added to this table.

The editor solicits additional commentary on this issue and possible alternatives.

Update for draft 0.3: Paul’s approach was integrated into draft 0.2 One comment was received during the ballot of draft 0.2 suggesting that the MCID could be determined based on the lookup of the VID/ MAC address. This approach is inconsistent with the way the filtering database is defined in the standard and was rejected. Since no other alternative methods were received during the ballot of the 0.2 draft, the editor believes this issue closed.

Update for draft 0.5: This was discussed during the ballot resolution of draft 0.4. The conclusion was to leave the mechanism as is, but to add a note that a MAC/FID implementation is also possible. This has been done in draft 0.5. Also, the MCID has been replaced with an E-VID in draft 0.5.

Z.3 New Parameters in the EM_UNITDATA.request indication

This specification places the generation of the M-TAG in the EISS consistent with the generation of other tags. The EISS requires information from the MAC Relay Entity to determine if the M-TAG should be generated and its contents. Two parameters are added to the EM_UNIDATA.request indication to support this: m-channel_identifier and source_s-vid. Concern was raised regarding the addition of these parameters. No definite alternatives were discussed; however, overloading existing parameters within this indication was mentioned as a possibility. The editor solicits additional commentary on the basis for this concern and possible alternatives.

Update for draft 0.3: The consensus from the ballot comment resolution of the 0.2 draft was to not create new parameters. Instead, the connection_identifier parameter will be used. The editor believes this issue closed.

Update for draft 0.5: with the creation of the E-component, it is no longer necessary to carry two parameters in connection_identifier. In this draft, the connection_identifier is used to carry the source E-VID and the vlan_identifier parameter is used to carry the VID.

Update for draft 1.0: The editor believes this issue is closed.

Update for draft 1.1: There was an error in draft 1.0. The connection_identifier is required to carry both the E-CID and Ingress_E-CID.

Update for draft 1.2: During the review of the comments for draft 1.1, the question was again raised if the E-CID and ingress_E-CID items should be part of the connection_identifier versus separate parameters. There seemed to be a lack of consensus to change it, so they remain part of the connection_identifier.

Z.4 C-VLAN tag processing by Port Extenders

Port Extenders need to do some limiting processing of C-VLAN tags. The priority and drop eligible bit needs to be reflected from the C-VLAN to the S-VLAN tag. If a C-VLAN tag is not present, then default values must be used. Potentially, it could be useful to have the Port Extender add a C-VLAN tag to an untagged frame. Finally, the Port Extender should be able to strip C-VLAN tags on egress if they are part of an untagged set. This is a little unnatural for a Port Extender since it is based on a Port-mapping S-VLAN component. The editor added a shim similar to that in 6.20 to perform these functions. Other methods are possible. The editor solicits additional commentary on the alternatives.

Update for draft 0.3: Since no comments were received on this issue during the ballot of the 0.2 draft, the editor believes this issue closed.

Update for draft 0.4: During the July, 2010 Plenary meeting in San Diego, additional comment was received regarding the possibility of using the mechanisms in 6.13 or 6.20.

The mechanism in 6.13 does not perform the needed function. It is necessary for a Port Extender to process the C-VLAN member and untagged sets in the same manner as a customer bridge. The mechanism in 6.13 would require that external devices signal priority using an S-TAG. This is not consistent with how customer bridges operate.

The mechanism in 6.20 simply allows for the recognition of a priority tagged frame. A Port Extender needs to handle a C-tagged frame.

Consequently, the editor retained the shim in 6.21 and made some simplifications to the wording.

Update for draft 0.5: The functionality of the shim has been greatly reduced. It is assumed that the functionality removed will be performed by the VLAN-aware bridge component to which the E-component is attached.

Update for draft 1.0: The editor believes this issue is closed

Update for draft 1.1: The functionality of this shim has been moved from Clause 6 to Clause 45.

Update for draft 2.0: This has been moved to 802.1BR

Z.5 Support of Port Extension by Provider Bridges

During the joint session between DCB and Internetworking during the May, 2010 Interim meeting in Geneva, Switzerland, interest was expressed in supporting Port Extension on Provider Bridges. As currently specified, this is problematic since the S-TAG is used both by provider bridges and in Port Extension. There seems to be four options:

1) Do nothing. Port Extension is not supported on the provider interfaces of provider bridges.
2) Stack S-TAGs. This option was perceived to be quite unpopular
3) Create a new tag that is just like an S-TAG except with a new ethertype. This new tag would be used in place of the S-TAG in Port Extension. This also implies the creation of a new component much like the Port-mapping S-VLAN component except that it uses this new tag (or possibly its an option of the Port-mapping S-VLAN component.
4) Use M-TAGs for Port Extension. Extend the M-TAG to provide the S-TAG functionality in Port Extension. This could be done simply by adding a bit to the M-TAG to indicate that the M-TAG is carrying a unicast channel identifier rather than a multicast channel identifier.

Update for draft 0.4: During the July, 2010 Plenary meeting in San Diego, it appeared that consensus was growing that Port Extension should work with any bridge type. This may be accomplished by using a tag type different from the S-TAG. Additionally, it may be possible to combine the function of an S-TAG and an M-TAG into a single tag. There was some concern regarding the impact to this amendment to incorporate these changes. The editor believes these changes to be minor and will present a summary at the September, 2010 interim in York. Given that additional discussion is required on this topic, the editor made no effort to incorporate this into the current (0.4) draft.

The editor solicits commentary on these or other options.

Update for draft 0.5: The functionality of Port Extension has been extended to provider bridges. This was accomplished by eliminating the use of the S-TAG. The M-TAG was renamed to E-TAG and it is used for both unicast and remote replication.

Update for draft 1.0: The editor believes this issue is closed.

Update for draft 1.2: A comment was raised against draft 1.1 that there was insufficient description of how this works for provider bridges. Some additional explanation was added to the beginning of clause 45 that explains that Port Extension is transparent to the type of bridge.

Z.6 Determination of Upstream Port

This document currently states that if more than one Port on a Port Extender is capable of becoming the Upstream Port, the method by which Port becomes the Upstream Port is beyond the scope of the

specification. During the May, 2010 Interim and in response to comments, it is desired to make this in scope. Using a method similar to root bridge selection (i.e. use a MAC address, priority combination) was suggested. The editor agreed to put this into the specification. However, after additional reflection, this seems problematic. A bridge may change root bridges as it discovers new bridges. It seems undesirable to have a Port Extender change Upstream Ports, and therefore Controlling Bridges, as Ports are discovered. Thus, this method may not be appropriate.

The editor solicits additional thoughts on this issue.

Update for draft 0.5: A mechanism has been proposed to select the upstream Port based on the peer Ports' priority and MAC address as determined by EDP.

Update for draft 1.0: EDP was replaced with a LLDP TLV. The editor believes this issue is closed.

Update for draft 2.0: This functionality is now in 802.1BR

Z.7 Reserved bits in E-TAG

The E-TAG currently has 18 reserved bits. 16 of these is to keep the E-TAG a multiple of four octets which is strongly desired. There is concern that these reserved bits may result in issues in the future.

Update for draft 1.0: The consensus is consistently to keep the E-TAG a multiple of four octets. The editor believes this issue is closed.

Update for draft 2.0: This functionality has been moved to 802.1BR.

Z.8 Use of PBB TE as the foundation for Port Extension

During the May meeting in Santa Fe, Paul Bottorff, et. al., presented a proposal to utilize PBB TE as the basis for defining a Port Extender and to change the current tag scheme to a MAC-in-MAC scheme. The proposal was debated. Consensus was not achieved to include this proposal in the draft standard. Some detail relating to the changes required to the draft standard to implement this change may be found in ballot comment #943 of the draft 2.0 comment dispositions available here:

http://www.ieee802.org/1/files/private/bh-drafts/d2/802-1bh-d2-0-pdis.pdf

The proposal may be found here:

http://www.ieee802.org/1/files/public/docs2011/bh-bottorff-PE-PBB-TE-0511-v3.pdf

Additional supporting material may be found at the following links:

http://www.ieee802.org/1/files/public/docs2011/bh-bottorff-cl05-0511-v2.pdf
http://www.ieee802.org/1/files/public/docs2011/bh-bottorff-cl06-0511-v1.pdf
http://www.ieee802.org/1/files/public/docs2011/bh-bottorff-cl3-0511-v1.pdf

Z.9 Decomposition of LLDP MIB module

During the balloting of draft 2.0, it was suggested that the LLDP MIB module be decomposed into separate MIB modules much like is done for the bridge MIB modules. This idea is equally applicable to P802.1Qbg.

Therefore, no action was taken in this regard on draft 2.1. However, once this is done in P802.1Qbg, this draft will be updated accordingly.