

```

IEEE8023-POWER-ETHERNET-MIB DEFINITIONS ::= BEGIN

IMPORTS
    MODULE-IDENTITY, OBJECT-TYPE, Integer32,
    Gauge32, Counter32, NOTIFICATION-TYPE, org
        FROM SNMPv2-SMI
    TruthValue
        FROM SNMPv2-TC
    MODULE-COMPLIANCE, OBJECT-GROUP, NOTIFICATION-GROUP
        FROM SNMPv2-CONF

    SnmpAdminString
        FROM SNMP-FRAMEWORK-MIB;

ieee8023powerEthernetMIB MODULE-IDENTITY

    LAST-UPDATED "201304110000Z" -- April 11, 2013
    ORGANIZATION
        "IEEE 802.3 working group"
    CONTACT-INFO
        "WG-URL: http://www.ieee802.org/3/index.html
        WG-EMail: STDS-802-3-MIB@LISTSERV.IEEE.ORG

        Contact: Howard Frazier
        Postal: 3151 Zanker Road
                San Jose, CA 95134
                USA
        Tel:    +1.408.922.8164
        E-mail: hfrazier@broadcom.com"

    DESCRIPTION
        "The MIB module for managing Power Source Equipment
        (PSE) specified in IEEE Std 802.3 Clause 33."

    REVISION    "201304110000Z" -- April 11, 2013
    DESCRIPTION
        "Revision, based on an earlier version in IEEE Std 802.3.1-2011."

    REVISION    "201102020000Z" -- February 2, 2011
    DESCRIPTION
        "Initial version, based on an earlier version published
        as RFC 3621."

    ::= { org ieee(111) standards-association-numbers-series-standards(2)
        lan-man-stds(802) ieee802dot3(3) ieee802dot3dot1mibs(1) 8 }

pethNotifications OBJECT IDENTIFIER ::= { ieee8023powerEthernetMIB 0 }
pethObjects       OBJECT IDENTIFIER ::= { ieee8023powerEthernetMIB 1 }
pethConformance  OBJECT IDENTIFIER ::= { ieee8023powerEthernetMIB 2 }

-- PSE Objects

pethPsePortTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF PethPsePortEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A table of objects that display and control the power
        characteristics of power Ethernet ports on a Power Source
        Equipment (PSE) device. This group will be implemented in
        managed power Ethernet switches and mid-span devices.
        Values of all read-write objects in this table are
        persistent at restart/reboot."
    ::= { pethObjects 1 }

pethPsePortEntry OBJECT-TYPE
    SYNTAX      PethPsePortEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A set of objects that display and control the power
        characteristics of a power Ethernet PSE port."
    INDEX      { pethPsePortGroupIndex , pethPsePortIndex }

```

```

 ::= { pethPsePortTable 1 }

PethPsePortEntry ::= SEQUENCE {
    pethPsePortGroupIndex      Integer32,
    pethPsePortIndex           Integer32,
    pethPsePortAdminEnable     TruthValue,
    pethPsePortPowerPairsControlAbility TruthValue,
    pethPsePortPowerPairs      INTEGER,
    pethPsePortDetectionStatus INTEGER,
    pethPsePortPowerPriority    INTEGER,
    pethPsePortMPSAbsentCounter Counter32,
    pethPsePortType            SnmpAdminString,
    pethPsePortPowerClassifications INTEGER,
    pethPsePortInvalidSignatureCounter Counter32,
    pethPsePortPowerDeniedCounter Counter32,
    pethPsePortOverLoadCounter Counter32,
    pethPsePortShortCounter    Counter32,
    pethPsePortActualPower     Integer32,
    pethPsePortPowerAccuracy    Integer32,
    pethPsePortCumulativeEnergy Counter32
}

pethPsePortGroupIndex OBJECT-TYPE
    SYNTAX      Integer32 (1..2147483647)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This variable uniquely identifies the group
        containing the port to which a power Ethernet PSE is
        connected. Group means box in the stack, module in a
        rack and the value 1 shall be used for non-modular devices.
        Furthermore, the same value shall be used in this variable,
        pethMainPseGroupIndex, and pethNotificationControlGroupIndex
        to refer to a given box in a stack or module in a rack."
 ::= { pethPsePortEntry 1 }

pethPsePortIndex OBJECT-TYPE
    SYNTAX      Integer32 (1..2147483647)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This variable uniquely identifies the power Ethernet PSE
        port within group pethPsePortGroupIndex to which the
        power Ethernet PSE entry is connected."
 ::= { pethPsePortEntry 2 }

pethPsePortAdminEnable OBJECT-TYPE
    SYNTAX TruthValue
    MAX-ACCESS read-write
    STATUS current
    DESCRIPTION
        "true (1) An interface that can provide the PSE functions.
        false(2) The interface will act as it would if it had no PSE
        function."

REFERENCE
    "IEEE Std 802.3, 30.9.1.1.2-aPSEAdminState"
 ::= { pethPsePortEntry 3 }

pethPsePortPowerPairsControlAbility OBJECT-TYPE
    SYNTAX TruthValue
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "Describes the capability of controlling the power pairs
        functionality to switch pins for sourcing power.
        The value true indicate that the device has the capability
        to control the power pairs. When false the PSE Pinout
        Alternative used cannot be controlled through the
        PethPsePortAdminEnable attribute."

REFERENCE
    "IEEE Std 802.3, 30.9.1.1.3"

```

~~"aPSEPowerPairsControlAbility"~~

::= { pethPsePortEntry 4 }

pethPsePortPowerPairs OBJECT-TYPE

```
SYNTAX INTEGER {
    signal(1),
    spare(2)
}
```

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"Describes or controls the pairs in use. If the value of pethPsePortPowerPairsControl is true, this object is writeable.

A value of signal(1) means that the signal pairs only are in use.

A value of spare(2) means that the spare pairs only are in use."

REFERENCE

"IEEE Std 802.3, 30.9.1.1.4-~~aPSEPowerPairs~~"

::= { pethPsePortEntry 5 }

pethPsePortDetectionStatus OBJECT-TYPE

```
SYNTAX INTEGER {
    disabled(1),
    searching(2),
    deliveringPower(3),
    fault(4),
    test(5),
    otherFault(6)
}
```

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Describes the operational status of the port PD detection.

A value of disabled(1)- indicates that the PSE State diagram is in the state DISABLED.

A value of deliveringPower(3) - indicates that the PSE State diagram is in the state POWER\_ON for a duration greater than tlim max (see IEEE Std 802.3, Table 33-11).

A value of fault(4) - indicates that the PSE State diagram is in the state TEST\_ERROR.

A value of test(5) - indicates that the PSE State diagram is in the state TEST\_MODE.

A value of otherFault(6) - indicates that the PSE State diagram is in the state IDLE due to the variable error\_conditions.

A value of searching(2)- indicates the PSE State diagram is in a state other than those listed above."

REFERENCE

"IEEE Std 802.3, 30.9.1.1.5"

~~"aPSEPowerDetectionStatus"~~

::= { pethPsePortEntry 6 }

pethPsePortPowerPriority OBJECT-TYPE

```
SYNTAX INTEGER {
    critical(1),
    high(2),
    low(3)
}
```

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"This object controls the priority of the port from the point of view of a power management algorithm. The priority that is set by this variable could be used by a control mechanism that prevents over current situations by disconnecting first ports with lower power priority. Ports that connect devices critical to the operation of the network - like the E911 telephones ports - should be set to higher priority."

::= { pethPsePortEntry 7 }

```

pethPsePortMPSAbsentCounter OBJECT-TYPE
SYNTAX Counter32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
    "This counter is incremented when the PSE state diagram
    transitions directly from the state POWER_ON to the

    state IDLE due to tmpdo_timer_done being asserted."
REFERENCE
    "IEEE Std 802.3, 30.9.1.1.11"
    "aPSEMPSAbsentCounter"
 ::= { pethPsePortEntry 8 }

pethPsePortType OBJECT-TYPE
SYNTAX SnmpAdminString
MAX-ACCESS read-write
STATUS current
DESCRIPTION
    "A manager will set the value of this variable to indicate
    the type of powered device that is connected to the port.
    The default value supplied by the agent if no value has
    ever been set should be a zero-length octet string."
 ::= { pethPsePortEntry 9 }

pethPsePortPowerClassifications OBJECT-TYPE
SYNTAX INTEGER {
    class0(1),
    class1(2),
    class2(3),
    class3(4),
    class4(5)
}
MAX-ACCESS read-only
STATUS current
DESCRIPTION
    "Classification is a way to tag different terminals on the
    Power over LAN network according to their power consumption.
    Devices such as IP telephones, WLAN access points and others,
    will be classified according to their power requirements.

    The meaning of the classification labels is defined in the
    IEEE specification.

    This variable is valid only while a PD is being powered,
    that is, while the attribute pethPsePortDetectionStatus
    is reporting the enumeration deliveringPower."
REFERENCE
    "IEEE Std 802.3, 30.9.1.1.6"
    "aPSEPowerClassification"
 ::= { pethPsePortEntry 10 }

pethPsePortInvalidSignatureCounter OBJECT-TYPE
SYNTAX Counter32
MAX-ACCESS read-only
STATUS current

DESCRIPTION
    "This counter is incremented when the PSE state diagram
    enters the state SIGNATURE_INVALID."
REFERENCE
    "IEEE Std 802.3, 30.9.1.1.7"
    "aPSEInvalidSignatureCounter"
 ::= { pethPsePortEntry 11 }

pethPsePortPowerDeniedCounter OBJECT-TYPE
SYNTAX Counter32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
    "This counter is incremented when the PSE state diagram
    enters the state POWER_DENIED."
REFERENCE

```

```

    "IEEE Std 802.3, 30.9.1.1.14"
    "aPSEPowerDeniedCounter"
    ::= { pethPsePortEntry 12 }

pethPsePortOverLoadCounter OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "This counter is incremented when the PSE state diagram
        enters the state ERROR_DELAY_OVER."
    REFERENCE
        "IEEE Std 802.3, 30.9.1.1.17"
    "aPSEOverLoadCounter"
    ::= { pethPsePortEntry 13 }

pethPsePortShortCounter OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "This counter is incremented when the PSE state diagram
        enters the state ERROR_DELAY_SHORT."
    REFERENCE
        "IEEE Std 802.3, 30.9.1.1.10"
    "aPSEShortCounter"
    ::= { pethPsePortEntry 14 }

pethPsePortActualPower OBJECT-TYPE
    SYNTAX Integer32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "See IEEE Std 802.3, 30.9.1.1.12 aPSEActualPower."
    REFERENCE
        "IEEE Std 802.3, 30.9.1.1.12 aPSEActualPower."23"
    ::= { pethPsePortEntry 15 }

pethPsePortPowerAccuracy OBJECT-TYPE
    SYNTAX Integer32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "See IEEE Std 802.3, 30.9.1.1.13 aPSEPowerAccuracy."
    REFERENCE
        "IEEE Std 802.3, 30.9.1.1.13 aPSEPowerAccuracy."24"
    ::= { pethPsePortEntry 16 }

pethPsePortCumulativeEnergy OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "See IEEE Std 802.3, 30.9.1.1.14 aPSECumulativeEnergy."
    REFERENCE
        "IEEE Std 802.3, 30.9.1.1.14 aPSECumulativeEnergy."25"
    ::= { pethPsePortEntry 17 }

```

-- Main PSE Objects

```

pethMainPseObjects OBJECT IDENTIFIER ::= { pethObjects 3 }

pethMainPseTable OBJECT-TYPE
    SYNTAX SEQUENCE OF PethMainPseEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "A table of objects that display and control attributes
        of the main power source in a PSE device. Ethernet

```

switches are one example of devices that would support these objects.

Values of all read-write objects in this table are persistent at restart/reboot."

```
::= { pethMainPseObjects 1 }
```

```
pethMainPseEntry OBJECT-TYPE
```

```
SYNTAX PethMainPseEntry
```

```
MAX-ACCESS not-accessible
```

```
STATUS current
```

```
DESCRIPTION
```

```
"A set of objects that display and control the Main power of a PSE."
```

```
INDEX { pethMainPseGroupIndex }
```

```
::= { pethMainPseTable 1 }
```

```
PethMainPseEntry ::= SEQUENCE {
```

```
  pethMainPseGroupIndex
```

```
    Integer32,
```

```
  pethMainPsePower
```

```
    Gauge32 ,
```

```
  pethMainPseOperStatus
```

```
    INTEGER,
```

```
  pethMainPseConsumptionPower
```

```
    Gauge32,
```

```
  pethMainPseUsageThreshold
```

```
    Integer32
```

```
}
```

```
pethMainPseGroupIndex OBJECT-TYPE
```

```
SYNTAX Integer32 (1..2147483647)
```

```
MAX-ACCESS not-accessible
```

```
STATUS current
```

```
DESCRIPTION
```

```
"This variable uniquely identifies the group to which power Ethernet PSE is connected. Group means (box in the stack, module in a rack) and the value 1 shall be used for non-modular devices. Furthermore, the same value shall be used in this variable, pethPsePortGroupIndex, and pethNotificationControlGroupIndex to refer to a given box in a stack or module in a rack."
```

```
::= { pethMainPseEntry 1 }
```

```
pethMainPsePower OBJECT-TYPE
```

```
SYNTAX Gauge32 (1..65535)
```

```
UNITS "Watts"
```

```
MAX-ACCESS read-only
```

```
STATUS current
```

```
DESCRIPTION
```

```
"The nominal power of the PSE expressed in Watts."
```

```
::= { pethMainPseEntry 2 }
```

```
pethMainPseOperStatus OBJECT-TYPE
```

```
SYNTAX INTEGER {
```

```
  on(1),
```

```
  off(2),
```

```
  faulty(3)
```

```
}
```

```
MAX-ACCESS read-only
```

```
STATUS current
```

```
DESCRIPTION
```

```
"The operational status of the main PSE."
```

```
::= { pethMainPseEntry 3 }
```

```
pethMainPseConsumptionPower OBJECT-TYPE
```

```
SYNTAX Gauge32
```

```
UNITS "Watts"
```

```
MAX-ACCESS read-only
```

```
STATUS current
```

```
DESCRIPTION
```

```
"Measured usage power expressed in Watts."
```

```
::= { pethMainPseEntry 4 }
```

```
pethMainPseUsageThreshold OBJECT-TYPE
```

```

SYNTAX      Integer32 (1..99)
UNITS       "%"
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "The usage threshold expressed in percents for
    comparing the measured power and initiating
    an alarm if the threshold is exceeded."
 ::= { pethMainPseEntry 5 }

-- Notification Control Objects

pethNotificationControl          OBJECT IDENTIFIER ::= { pethObjects 4 }

pethNotificationControlTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF PethNotificationControlEntry
    MAX-ACCESS  not-accessible

    STATUS      current
    DESCRIPTION
        "A table of objects that display and control the
        Notification on a PSE device.
        Values of all read-write objects in this table are
        persistent at restart/reboot."
    ::= { pethNotificationControl 1 }

pethNotificationControlEntry OBJECT-TYPE
    SYNTAX      PethNotificationControlEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A set of objects that control the Notification events."
    INDEX      { pethNotificationControlGroupIndex }
    ::= { pethNotificationControlTable 1 }

PethNotificationControlEntry ::= SEQUENCE {
    pethNotificationControlGroupIndex
        Integer32,
    pethNotificationControlEnable
        TruthValue
}

pethNotificationControlGroupIndex OBJECT-TYPE
    SYNTAX      Integer32 (1..2147483647)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This variable uniquely identifies the group. Group
        means box in the stack, module in a rack and the value
        1 shall be used for non-modular devices. Furthermore,
        the same value shall be used in this variable,
        pethPsePortGroupIndex, and
        pethMainPseGroupIndex to refer to a given box in a
        stack or module in a rack."
    ::= { pethNotificationControlEntry 1 }

pethNotificationControlEnable OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "This object controls, on a per-group basis, whether
        or not notifications from the agent are enabled. The
        value true(1) means that notifications are enabled; the
        value false(2) means that they are not."
    ::= { pethNotificationControlEntry 2 }

--
-- Notifications Section
--
--

pethPsePortOnOffNotification NOTIFICATION-TYPE
    OBJECTS      { pethPsePortDetectionStatus }
    STATUS      current

```

```

DESCRIPTION
    "This Notification indicates if Pse Port is delivering or
    not power to the PD. This Notification should be sent on
    every status change except in the searching mode.
    At least 500 msec shall elapse between notifications
    being emitted by the same object instance."
    ::= { pethNotifications 1 }

pethMainPowerUsageOnNotification NOTIFICATION-TYPE
OBJECTS      { pethMainPseConsumptionPower }
STATUS       current
DESCRIPTION
    "This Notification indicate PSE Threshold usage
    indication is on, the usage power is above the
    threshold. At least 500 msec shall elapse between
    notifications being emitted by the same object
    instance."
    ::= { pethNotifications 2 }

pethMainPowerUsageOffNotification NOTIFICATION-TYPE
OBJECTS      { pethMainPseConsumptionPower }
STATUS       current
DESCRIPTION
    "This Notification indicates PSE Threshold usage indication
    off, the usage power is below the threshold.
    At least 500 msec shall elapse between notifications being
    emitted by the same object instance."
    ::= { pethNotifications 3 }

--
-- Conformance statements
--
pethCompliances OBJECT IDENTIFIER ::= { pethConformance 1 }
pethGroups      OBJECT IDENTIFIER ::= { pethConformance 2 }

-- Compliance statements

pethCompliance MODULE-COMPLIANCE
STATUS current
DESCRIPTION
    "Describes the requirements for conformance to the
    Power Ethernet MIB."

MODULE -- this module
MANDATORY-GROUPS { pethPsePortGroup,
                   pethPsePortNotificationGroup,
                   pethNotificationControlGroup
                 }
GROUP pethMainPseGroup
DESCRIPTION
    "The pethMainPseGroup is mandatory for PSE systems
    that implement a main power supply."
GROUP pethMainPowerNotificationGroup
DESCRIPTION
    "The pethMainPowerNotificationGroup is mandatory for
    PSE systems that implement a main power supply."
    ::= { pethCompliances 1 }

pethPsePortGroup OBJECT-GROUP
OBJECTS {
    pethPsePortAdminEnable,
    pethPsePortPowerPairsControlAbility,
    pethPsePortPowerPairs,
    pethPsePortDetectionStatus,
    pethPsePortPowerPriority,
    pethPsePortMPSAbsentCounter,
    pethPsePortInvalidSignatureCounter,
    pethPsePortPowerDeniedCounter,
    pethPsePortOverLoadCounter,
    pethPsePortShortCounter,
    pethPsePortType,
    pethPsePortPowerClassifications,
    pethPsePortActualPower,

```



```

        pethPsePortPowerAccuracy,
        pethPsePortCumulativeEnergy
    }
    STATUS current
    DESCRIPTION
        "PSE Port objects."
    ::= { pethGroups 1 }

pethMainPseGroup OBJECT-GROUP
    OBJECTS {
        pethMainPsePower,
        pethMainPseOperStatus,
        pethMainPseConsumptionPower,
        pethMainPseUsageThreshold
    }
    STATUS current
    DESCRIPTION
        "Main PSE Objects."
    ::= { pethGroups 2 }

pethNotificationControlGroup OBJECT-GROUP

    OBJECTS {
        pethNotificationControlEnable
    }
    STATUS current
    DESCRIPTION
        "Notification Control Objects."
    ::= { pethGroups 3 }

pethPsePortNotificationGroup NOTIFICATION-GROUP
    NOTIFICATIONS { pethPsePortOnOffNotification}
    STATUS current
    DESCRIPTION "Pse Port Notifications."
    ::= { pethGroups 4 }

pethMainPowerNotificationGroup NOTIFICATION-GROUP
    NOTIFICATIONS { pethMainPowerUsageOnNotification,
        pethMainPowerUsageOffNotification}
    STATUS current
    DESCRIPTION "Main PSE Notifications."
    ::= { pethGroups 5 }

END

```