

Internet Draft

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Power Ethernet (DTE Power via MDI) MIB

<[draft-ietf-hubmib-power-ethernet-mib-03.txt](#)>

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Abstract

This memo defines a portion of the Management Information Base (MIB) for use with network management protocols in the Internet community. The document proposes an extension to the Ethernet-like Interfaces MIB [[RFC2665](#)] with a set of objects for managing a power Ethernet Powered Device (PD) and/or Power Source Equipment (PSE).

Distribution of this memo is unlimited.

Table of Contents

Status of this Memo	1
Abstract	1
1 Introduction	2
2 The SNMP Management Framework	2

INTERNET DRAFT

Power Ethernet MIB

October 2002

3 Overview	3
4 MIB Structure	4
5 Evolution of the Document, Limitations and Future Work	4
6 Changes log	4
7 Definitions	9
8 References	24
9 Intellectual Property	26
10 Security Considerations	26
11 Authors Addresses	27
A Full Copyright Statement	27

## 1. Introduction

This memo defines a portion of the Management Information Base (MIB) for use with network management protocols in the Internet community. In particular, it defines a set of MIB objects to manage a Power Ethernet (DTE Power via MDI) Powered Device (PD) and/or power Source Equipment (PSE).

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [[RFC2863](#)].

## 2. The SNMP Management Framework

The SNMP Management Framework presently consists of five major components:

- o An overall architecture, described in [RFC 2571](#) [[RFC2571](#)].
- o Mechanisms for describing and naming objects and events for the purpose of management. The first version of this Structure of Management Information (SMI) is called SMIV1 and described in STD 16, [RFC 1155](#) [[RFC1155](#)], STD 16, [RFC 1212](#) [[RFC1212](#)] and [RFC 1215](#) [[RFC1215](#)]. The second version, called SMIV2, is described in STD 58, [RFC 2578](#) [[RFC2578](#)], STD 58, [RFC 2579](#) [[RFC2579](#)] and STD 58, [RFC 2580](#) [[RFC2580](#)].
- o Message protocols for transferring management information. The first version of the SNMP message protocol is called SNMPv1 and described in STD 15, [RFC 1157](#) [[RFC1157](#)]. A second version of the SNMP message protocol, which is not an Internet standards track protocol, is called SNMPv2c and described in [RFC 1901](#)

[[RFC1901](#)] and [RFC 1906](#) [[RFC1906](#)]. The third version of the message protocol is called SNMPv3 and described in [RFC 1906](#) [[RFC1906](#)], [RFC 2572](#) [[RFC2572](#)] and [RFC 2574](#) [[RFC2574](#)].

- o Protocol operations for accessing management information. The

first set of protocol operations and associated PDU formats is described in STD 15, [RFC 1157](#) [[RFC1157](#)]. A second set of protocol operations and associated PDU formats is described in [RFC 1905](#) [[RFC1905](#)].

- o A set of fundamental applications described in [RFC 2573](#) [[RFC2573](#)] and the view-based access control mechanism described in [RFC 2575](#) [[RFC2575](#)].

A more detailed introduction to the current SNMP Management Framework can be found in [RFC 2570](#) [[RFC2570](#)].

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. Objects in the MIB are defined using the mechanisms defined in the SMI.

This memo specifies a MIB module that is compliant to the SMIV2. A MIB conforming to the SMIV1 can be produced through the appropriate translations. The resulting translated MIB must be semantically equivalent, except where objects or events are omitted because no translation is possible (use of Counter64). Some machine readable information in SMIV2 will be converted into textual descriptions in SMIV1 during the translation process. However, this loss of machine readable information is not considered to change the semantics of the MIB.

### [3.](#) Overview

The emergence of IP telephony as an application that allows for voice applications to be run over the same infrastructure as data applications led to the emergence of Ethernet IP phones, with similar functions and characteristics as the traditional phones. Powering a phone is one of these functions that are being taken as granted. The IEEE 802.3 Working Group initiated a standard work on this subject, currently known as the IEEE 802.3af work [[IEEE-802.3af](#)].

The IEEE 802.3af WG will not define a full management interface, but only the hardware registers that will allow for a management interfaces to be built for a powered Ethernet device. The MIB module defined in this document extends the Ethernet-like Interfaces MIB [[RFC2665](#)] with the management objects required for the management of the powered Ethernet devices and ports.

The following abbreviations are defined in [[IEEE-802.3af](#)] and will be used with the same significance in this document:

PSE - Power Sourcing Equipment;

PD - Powered Device

#### [4.](#) MIB Structure

This MIB objects are included in four MIB groups - three of them include MIB tables, and the fourth scalar objects

The pethPsePortTable defines the objects used for the configuration and describing the status of ports on a PSE device. Examples of PSE devices are Ethernet switches that support power Ethernet and mid-span boxes.

The pethPdPortTable defines the objects used for the configuration and describing the status of ports on a PD device. Examples of PD devices are Ethernet phones.

The pethMainPseObjects MIB group defines the management objects for a managed main power source in a PSE device. Ethernet switches are one example of boxes that would support these objects.

The pethTrapsControlTable includes objects that control the transmission of traps by the agent to a management application.

#### [5.](#) Evolution of the Document, Limitations and Future Work

The IEEE 802.3af is at this stage work in progress. The scope of this document is to do the standards work in the IETF in parallel with the

IEEE standardization activity, in order to allow for the publication of a standard track document containing an SNMP MIB simultaneously or close to the date of the publication of the IEEE revised standard. It is possible that changes may be brought to the IEEE proposal, and the Ethernet MIB Working Group will work in order to ensure consistency between the two standards proposals.

## 6. Changes Log

The following changes were introduced relative to the first proposal for a Power Ethernet MIB [[PWR-MIB](#)]

- a. pethPsePortTable has to index pethPsePortGroupIndex & pethPsePortIndex
- b. pethPsePortIndex INTEGER instead of InterfaceIndex
- c. Name change pethPsePortStatus insted of pethPsePortFaultError

- d. Name change pethPsePortStatusClear instead of pethPsePortFaultErrorClear
- e. DESCRIPTION update for pethPsePortPowerDetectionStatus test(3)
- f. DESCRIPTION update pethPsePortDetectionOperStatus off(2)
- g. Adding to pethPsePortStatus one more item both(4)
- h. Adding pethMainPseTable with a pethMainPseGroupIndex
- i. Deletting to objects pethMainPseMaxVoltage & pethMainPseMinVoltage
- j. Change SYNTAX of pethMainPseUsagePower form INTEGER to Gauge32
- k. Change SYNTAX of pethMainPseUsageCurrent form INTEGER to Gauge32
- l. Adding pethMainPseBackupActivated & pethMainPseBackupPresent
- m. Adding Traps Control Objects
- n. Adding Notifications Section (5 notifications )

- o. Adding pethTrapsControlGroup to Conformance Section
- p. Adding pethPsePortPowerClassifications to pethPsePortTable Class 1-5
- q. Adding pethPsePortPowerClassifications to pethPsePortGroup
- r. Change in pethPsePortStatus none(1) to ok(1)
- s. Change in DESCRIPTION of pethMainPseUsagePower from mW to Watt
- t. Change pethMainPseUsagePower to pethMainPseConsumptionPower
- u. Delete of pethMainPseUsageCurrent

The following changes were introduced between [draft-ietf-hubmib-power-ethernet-mib-00.txt](#) and [draft-ietf-hubmib-power-ethernet-mib-01.txt](#):

1. change pethMainPowerUsageTrap to pethMainPowerUsageOnTrap
2. add pethMainPowerUsageOffTrap
3. change pethMainPowerTrapGroup

4. change pethPsePorPowerEnable to pethPsePortAdminEnable
5. pethPsePortPowerIdPairsControl to pethPsePortPowerPairsControlAbility
6. pethPsePortPowerIdPairs to pethPsePortPowerPairs
7. delete both from pethPsePortPowerPairs object
8. change pethPsePortPowerDetectionStatus to pethPsePortPowerDetectionControl
9. delete from pethPsePortPowerDetectionControl off , and change test to 2

10. change pethPsePortDetectionOperStatus to pethPsePortDetectionStatus
11. change pethPsePortDetectionStatus to:
  - disabled(1),
  - searching(2),
  - detected(3),
  - deliveringPower(4),
  - fault(5),
  - invalidPD(6),
  - test(7),
  - denyLowPriority(8)
12. change description for pethPsePortPowerClassifications
13. change pethPsePortStatus to pethPsePortCurrentStatus
14. Update description for pethPsePortCurrentStatus
15. change pethPsePortStatusClear to pethPsePortCurrentStatusClear
16. change pethPdPortDetectionOperStatus to pethPdPortDetectionStatus
17. change in description of pethPdPortPowerPairs
18. change in pethPdPortDetectionStatus description
19. delete pethPdPortPowerClassifications object
20. change in pethPsePortGroup
21. change in pethPdPortGroup

22. change pethPsePortOnOffTrap with pethPsePortDetectionStatus object
23. change pethPsePortStatusTrap to pethPsePortCurrentStatusTrap
24. change pethPsePortTrapGroup

The following changes were introduced between [draft-ietf-hubmib-](#)

[power-ethernet-mib-01.txt](#) and [draft-ietf-hubmib-power-ethernet-mib-02.txt](#):

1. change pethMainPsePower SYNTAX Integer32 (0..65535) to (1..65535)
  2. change pethTrapsControlGroupIndex SYNTAX Integer32 (0..65535) to (1..65535)
  3. change int pethMainPseBackUpActivatedTrap pethPsePortGroupIndex to pethMainPseGroupIndex
  4. change int pethMainPowerUsageOnTrap pethPsePortGroupIndex to pethMainPseGroupIndex
  5. change int pethMainPowerUsageOffTrap pethPsePortGroupIndex to pethMainPseGroupIndex
  6. change pethMainPseGroupIndex MAX-ACCESS to read-only
- updates from IEEE Draft P802.3af/D3.1, June 5, 2002
7. remove from pethPsePortPowerClassifications class5
  8. remove from pethPsePortCurrentStatus both(4) and description
  9. add pethPsePortUnderCurrentCounter object
  10. add pethPsePortOverCurrentCounter object
  11. remove pethPsePortCurrentStatusClear object
  12. change pethPsePortType OID to end with 13
  13. change pethPsePortPowerClassifications OID to end with 14
  14. update pethPsePortGroup OBJECT-GROUP
  15. change reference to new IEEE Draft
  16. change pethPdCompliance description.

The following changes were introduced between [draft-ietf-hubmib-](#)



[power-ethernet-mib-02.txt](#) and [draft-ietf-hubmib-power-ethernet-mib-03.txt](#):

1. remove pethPsePortGroupIndex and pethPsePortIndex from pethPsePortOnOffTrap and pethPsePortCurrentStatusTrap
2. change pethPsePortGroupIndex and pethPsePortIndex MAX-ACCESS to not-accessible
3. remove pethMainPseGroupIndex from pethMainPseBackUpActivatedTrap
4. replace pethMainPseGroupIndex with pethMainPseConsumptionPower in pethMainPowerUsageOnTrap and pethMainPowerUsageOffTrap
5. change pethMainPseGroupIndex MAX-ACCESS to not-accessible
6. move pethPsePortTrapGroup NOTIFICATION-GROUP and pethMainPowerTrapGroup NOTIFICATION-GROUP to the Conformance [Section 7](#).
7. update the discription of pethPsePortOnOffTrap
8. add pethPsePortPowerDetectionControl to pethPsePortGroup
9. change reference to IEEE Draft P802.3af/D3.3 October 2002
10. delete enumeration pethPsePortDetectionStatus detected(3) and invalidPD(6)
11. change pethPsePortCurrentStatus to pethPsePortPowerMaintenanceStatus
- 12 . change pethPsePortUnderCurrentCounter to pethPsePortMPSAbsentCounter
13. add pethPdPortAdminEnable object.
14. replace Trap with Notification.
15. update pethPsePortOnOffNotification description.
16. update pethPsePortDetectionStatus description.
17. remove pethPdPortPowerPairs object.
18. remove pethPdPortDetectionStatus object.
19. remove pethPdPortType object.

20. change pethPdPortAdminEnable OID.

## 7. Definitions

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

```
IMPORTS
```

```
    MODULE-IDENTITY, OBJECT-TYPE, Integer32 , Gauge32,Counter32,
    NOTIFICATION-TYPE
        FROM SNMPv2-SMI
    dot3
        FROM EtherLike-MIB
    TruthValue
        FROM SNMPv2-TC
    MODULE-COMPLIANCE, OBJECT-GROUP ,NOTIFICATION-GROUP
        FROM SNMPv2-CONF;
```

```
powerEthernetMIB MODULE-IDENTITY
```

```
    LAST-UPDATED "200210190000Z" -- October 19, 2002
    ORGANIZATION "IETF Ethernet Interfaces and Hub MIB
        Working Group"
```

```
    CONTACT-INFO
    "
```

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```

```
    "
```

```
DESCRIPTION
```

```
    "The MIB module for for managing Powered Devices (PD) or
    Power Source Equipment (PSE) working according to the IEEE
    802.af Powered Ethernet (DTE Power via MDI) standard.
```

```
    The following terms are used throughout this
    MIB module. For complete formal definitions,
    the IEEE 802.3 standards should be consulted
    wherever possible:
```

defined by the IEEE 802.3 management standard, in order to support a modular numbering scheme. The classical example allows an implementor to represent field-replaceable units as groups of ports, with the port numbering matching the modular hardware implementation.

Port - This entity identifies the port within the group for which this entry contains information. The numbering scheme for ports is implementation specific."

::= { dot3 20 }

pethObjects OBJECT IDENTIFIER ::= { powerEthernetMIB 1 }  
pethNotifications OBJECT IDENTIFIER ::= { powerEthernetMIB 2 }  
pethConformance OBJECT IDENTIFIER ::= { powerEthernetMIB 3 }

-- 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 power Ethernet ports on a Power Source Entity (PSE) device. This group will be implemented in managed power Ethernet switches and mid-span devices."  
::= { 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
        INTEGER,
    pethPsePortIndex
        INTEGER,
    pethPsePortAdminEnable
        INTEGER,
    pethPsePortPowerPairsControlAbility

```

```

    TruthValue,
    pethPsePortPowerPairs
        INTEGER,
    pethPsePortPowerDetectionControl
        INTEGER,
    pethPsePortDetectionStatus
        INTEGER,
    pethPsePortPowerPriority
        INTEGER,
    pethPsePortPowerMaintenanceStatus
        INTEGER,
    pethPsePortMPSAbsentCounter
        Counter32,
    pethPsePortOverCurrentCounter
        Counter32,
    pethPsePortType
        INTEGER,
    pethPsePortPowerClassifications
        INTEGER
}

```

```

pethPsePortGroupIndex OBJECT-TYPE
    SYNTAX      INTEGER (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
    MUST be used for non-modular devices .

```

```

    pethPseMidSpanGroupCapacity is the number of Mid-Span PSE

```

```
        groups that can be contained within the Mid-Span PSE."
 ::= { pethPsePortEntry 1 }
```

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

```
pethPsePortAdminEnable OBJECT-TYPE
SYNTAX INTEGER {
```

```
        enable(1),
        disable(2)
    }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Enables power supply on this port.
         Setting this object at a value enable(1) enables power
         and detection mechanism for this port.
         Setting this object at a value disable(2) disables power
         for this port."
 ::= { 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"
 ::= { 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
    writable.
    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."
 ::= { pethPsePortEntry 5 }

    pethPsePortPowerDetectionControl OBJECT-TYPE
SYNTAX INTEGER {
    auto(1),
    test(2)
}
MAX-ACCESS read-write
STATUS current

```

```

DESCRIPTION
    "Controls the power detection mechanism of the port.
    Setting the value auto(1) enables the power detection
    mechanism of the port.
    Setting the value test(2) puts the port in a
    testmode: force continuous discovery without applying
    power regardless of whether PD detected."
 ::= { pethPsePortEntry 6 }

    pethPsePortDetectionStatus OBJECT-TYPE
SYNTAX INTEGER {
    disabled(1),
    searching(2),
    deliveringPower(4),
    fault(5),
    test(7),
    denyLowPriority(8)
}

```

```

}
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 IDLE
    A value of searching(2)- indicates that the PSE State diagram is in
    the state DETECTION, CLASSIFICATION, SIGNATURE_INVALID or BACKOFF.
    A value of deliveringPower(4) - indicates that the PSE State diagram
    is in the state POWER_UP, POWER_ON or POWER_OFF.
    A value of fault(5) - indicates that the PSE State diagram is in the
    state TEST_ERROR or the state IDLE due to the variable error
    condition.
    Faults detected are vendor specific.
    A value of test(7) - indicates that the PSE State diagram is in the
    state TEST_MODE.
    A value of denyLowPriority(8) indicates that the port was
    disabled by the power management system, in order to keep
    active higher priority ports.
    "
 ::= { pethPsePortEntry 7 }

    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 8 }

```

```

pethPsePortPowerMaintenanceStatus OBJECT-TYPE
SYNTAX INTEGER {
    ok(1),
    underCurrent(2),
    mPSAbsent(3)
}
MAX-ACCESS read-only
STATUS current
DESCRIPTION
    "The value ok(1) indicates the Power Maintenance
    Signature is present and the overcurrent condition has not been
    detected.
    The value overCurrent (2) indicates an overcurrent condition
    has been detected.
    The value mPSAbsent(3) indicates that the Power Maintenance
    Signature is absent."

REFERENCE "[IEEE Draft P802.3af/D3.3, October, 2002, 30.9.1.1.8
aPSEPowerMaintenanceStatus]"
::= { pethPsePortEntry 10 }

```

```

pethPsePortMPSAbsentCounter OBJECT-TYPE
SYNTAX Counter32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
    "Counts the number of times that the
    pethPsePortPowerMaintenanceStatus attribute changes from any
    value to the value mPSAbsent(3)."
```

```

REFERENCE "[IEEE Draft P802.3af/D3.3, October, 2002, object 30.9.1.1.
aPSEUnderCurrentCounter]"
::= { pethPsePortEntry 11 }

```

```

pethPsePortOverCurrentCounter OBJECT-TYPE
SYNTAX Counter32
MAX-ACCESS read-only

```

```

STATUS current
DESCRIPTION
    "Counts the number of times that the aPSEPowerCurrentStatus
    attribute changes from any value to the value overCurrent(2)."
```



REFERENCE "[IEEE Draft P802.3af/D3.3, October, 2002, object 30.9.1.1.1  
aPSEOverCurrentCounter]"  
 ::= { pethPsePortEntry 12 }

pethPsePortType OBJECT-TYPE

SYNTAX INTEGER {  
    other(1),  
    telephone(2),  
    webcam(3),  
    wireless(4)  
}

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"A manager will set the value of this variable to a value that indicates the type of the device that is connected to theport. This value can be the result of the mapping the address of the station connected to the port and of the value of the pethPdPortType of the respective PD port."

::= { pethPsePortEntry 13 }

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 value is only valid while a valid PD is being detected as indicated by the attribute pethPsePortDetectionStatus reporting the value or deliveringPower(4)."

REFERENCE "[IEEE Draft P802.3af/D3.3, October , 2002,  
object 30.9.1.1.7 aPSEPowerClassification]"

::= { pethPsePortEntry 14 }

-- PD Port table

pethPdPortTable OBJECT-TYPE

SYNTAX SEQUENCE OF PethPdPortEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A table of objects that display and control the power characteristics power Ethernet ports on a Powered Device(PD) device. This group will be implemented in managed powered and mid-span devices."

::= { pethObjects 2 }

pethPdPortEntry OBJECT-TYPE

SYNTAX PethPdPortEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A set of objects that display and control the power characteristics of a Powered Device port."

INDEX { pethPdPortIndex }

::= { pethPdPortTable 1 }

PethPdPortEntry ::= SEQUENCE {

pethPdPortIndex

INTEGER,

pethPdPortAdminEnable

INTEGER

}

pethPdPortIndex OBJECT-TYPE

SYNTAX INTEGER (0..65535)

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An index value that uniquely identifies an interface to a PD device. The interface identified by a particular value of this index is the same interface as identified by the same value of ifIndex. The mapping between the ifIndex values and the numbering of the port on the device is an implementation issue."

::= { pethPdPortEntry 1 }

INTERNET DRAFT

Power Ethernet MIB

October 2002

pethPdPortAdminEnable OBJECT-TYPE

SYNTAX INTEGER {  
    enable(1),  
    disable(2)

}

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"This value identifies the operational state of the PD functions.  
An interface which can provide the PD functions will be enable  
to do so when this attribute has the value enable. When this  
attribute has the value disable the interface will act  
as it would if it had no PD function."

::= { pethPdPortEntry 2 }

-- 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 the Main power  
on a PSE device. Example - an Ethernet switch midspan device can  
control an Ethernet port and the Main Power supply unit's."

::= { 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
        INTEGER,
    pethMainPsePower
        Integer32,
    pethMainPseOperStatus
        INTEGER,
    pethMainPseConsumptionPower
```

```
        Gauge32,
    pethMainPseBackupPresent
        INTEGER,
    pethMainPseBackupActivated
        TruthValue,
    pethMainPseUsageThreshold
        INTEGER,
    pethMainPseMaximumDcPower
        INTEGER
}
pethMainPseGroupIndex OBJECT-TYPE
    SYNTAX      INTEGER (0..65535)
    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 MUST be used for non-modular
        devices "
    ::= { pethMainPseEntry 1 }

pethMainPsePower OBJECT-TYPE
    SYNTAX      Integer32 (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 }

```

pethMainPseBackupPresent OBJECT-TYPE

```

    SYNTAX    INTEGER    {
                                present(1),
                                notPresent(2),
                                faulty(3)
                            }

```

```

    MAX-ACCESS    read-only
    STATUS        current

```

```

    DESCRIPTION
        "reflects the presence of a backup PSE ."
    ::= { pethMainPseEntry 5 }

```

pethMainPseBackupActivated OBJECT-TYPE

```

    SYNTAX        TruthValue
    MAX-ACCESS    read-only
    STATUS        current

```

```

    DESCRIPTION
        "- reflects the activation status of the backup PSE .
        The value true Backup is activated."
    ::= { pethMainPseEntry 6 }

```

pethMainPseUsageThreshold OBJECT-TYPE  
SYNTAX INTEGER (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 7 }

pethMainPseMaximumDcPower OBJECT-TYPE  
SYNTAX INTEGER  
UNITS "Watts"  
MAX-ACCESS read-write  
STATUS current  
DESCRIPTION  
"Describes the maximum available power in  
Watt to be supplied by the DC backup source to this  
device."  
::= { pethMainPseEntry 8 }

-- 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."  
::= { 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
        INTEGER,
    pethNotificationControlEnable
        INTEGER
}

pethNotificationControlGroupIndex OBJECT-TYPE
    SYNTAX      INTEGER (1..65535)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This variable uniquely identifies the group. Group means
        box in the stack, module in a rack and it is RECOMENDED
        that the value 1 be used for non-modular devices "
    ::= { pethNotificationControlEntry 1 }

pethNotificationControlEnable OBJECT-TYPE
    SYNTAX      INTEGER
        {
            enable(1),
            disable(2)
        }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION

```

```

        "Enable Notification from Agent"
    ::= { 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."

::= { pethNotifications 1 }

pethPsePortPowerMaintenanceStatusNotification NOTIFICATION-TYPE

OBJECTS { pethPsePortPowerMaintenanceStatus }

STATUS current

DESCRIPTION

" This Notification indicates a Port Change Status and it SHOULD be sent on every status change."

::= { pethNotifications 2 }

pethMainPseBackUpActivatedNotification NOTIFICATION-TYPE

OBJECTS { pethMainPseBackupActivated }

STATUS current

DESCRIPTION

" This Notification indicate BackUp is Activated or BackUp is released."

::= { pethNotifications 3 }

pethMainPowerUsageOnNotification NOTIFICATION-TYPE

OBJECTS { pethMainPseConsumptionPower }

STATUS current

DESCRIPTION

" This Notification indicate PSE Threshold usage indication on, the usage power is above the threshold."

::= { pethNotifications 4 }

pethMainPowerUsageOffNotification NOTIFICATION-TYPE

OBJECTS { pethMainPseConsumptionPower }

STATUS current

DESCRIPTION

" This Notification indicate PSE Threshold usage indication off, the usage power is below the threshold."

::= { pethNotifications 5 }



```

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

pethCompliance MODULE-COMPLIANCE
    STATUS current
    DESCRIPTION
        "Describes the requirements for conformance to the
        Power Ethernet MIB."
    MODULE -- this module
        GROUP pethPsePortGroup
        DESCRIPTION
            "The pethPsePortGroup is mandatory for systems which
            implement PSE ports."
        GROUP pethPdPortGroup
        DESCRIPTION
            "The pethPdPortGroup is mandatory for systems which
            implement PD Ports."
        GROUP pethMainPseGroup
        DESCRIPTION
            "The pethMainPseGroup is mandatory for systems which
            implement main power supply within a PSE Device."
        GROUP pethNotificationControlGroup
        DESCRIPTION
            "The pethNotificationControlGroup is mandatory for systems which
            implement PSE ports."
    ::= { pethCompliances 1 }

pethPseCompliance MODULE-COMPLIANCE
    STATUS current
    DESCRIPTION
        "Describes the requirements for conformance to the PSE and MID-
        Span."
    MODULE -- this module
    MANDATORY-GROUPS {pethPsePortGroup, pethMainPseGroup,pethNotificationCon
    ::= { pethCompliances 2 }

pethPdCompliance MODULE-COMPLIANCE

```

```

STATUS current
DESCRIPTION
    "Describes the requirements for conformance to the PD."
MODULE -- this module
MANDATORY-GROUPS {pethPdPortGroup}
 ::= { pethCompliances 3}

pethPsePortGroup OBJECT-GROUP
OBJECTS {
    pethPsePortAdminEnable,
    pethPsePortPowerPairsControlAbility,
    pethPsePortPowerDetectionControl,
    pethPsePortPowerPairs,
    pethPsePortDetectionStatus,
    pethPsePortPowerPriority,
    pethPsePortPowerMaintenanceStatus ,
    pethPsePortMPSAbsentCounter,
    pethPsePortOverCurrentCounter,
    pethPsePortType,
    pethPsePortPowerClassifications
}
STATUS current
DESCRIPTION
    "PSE Port Objects."
 ::= { pethGroups 1 }

pethPdPortGroup OBJECT-GROUP
OBJECTS {
    pethPdPortAdminEnable
}
STATUS current
DESCRIPTION
    "PD Port Objects."
 ::= { pethGroups 2 }

pethMainPseGroup OBJECT-GROUP
OBJECTS {
    pethMainPsePower,
    pethMainPseOperStatus,
    pethMainPseConsumptionPower,
    pethMainPseBackupPresent,
    pethMainPseBackupActivated,
    pethMainPseUsageThreshold,
    pethMainPseMaximumDcPower
}
STATUS current
DESCRIPTION
    "Main PSE Objects. "

```

INTERNET DRAFT

Power Ethernet MIB

October 2002

```
 ::= { pethGroups 3 }

pethNotificationControlGroup OBJECT-GROUP
OBJECTS {
    pethNotificationControlEnable
}
STATUS current
DESCRIPTION
    "Notification Control Objects. "
 ::= { pethGroups 4 }

pethPsePortNotificationGroup NOTIFICATION-GROUP
    NOTIFICATIONS { pethPsePortOnOffNotification,
                    pethPsePortPowerMaintenanceStatusNotification}
    STATUS current
    DESCRIPTION "Pse Notification indications"
 ::= { pethCompliances 4 }

pethMainPowerNotificationGroup NOTIFICATION-GROUP
    NOTIFICATIONS { pethMainPseBackUpActivatedNotification,
                    pethMainPowerUsageOnNotification,
                    pethMainPowerUsageOffNotification}
    STATUS current
    DESCRIPTION "Pse Notification indications"
 ::= { pethCompliances 5 }

END
```

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Ethernet MIB WG

Expires April 2003

[Page 25]

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INTERNET DRAFT

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October 2002

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## 10. Security Considerations

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

There are a number of managed objects in this MIB that may contain sensitive information. These are:

pethPsePortPowerPairsControlAbility  
pethPsePortPowerPriority  
pethPsePortPowerClassifications

It is thus important to control even GET access to these objects and possibly to even encrypt the values of these object when sending them over the network via SNMP. Not all versions of SNMP provide features for such a secure environment.

SNMPv1 by itself is not a secure environment. Even if the network itself is secure (for example by using IPSec), even then, there is no control as to who on the secure network is allowed to access and GET/SET (read/change/create/delete) the objects in this MIB.

It is RECOMMENDED that the implementers consider the security features as provided by the SNMPv3 framework. Specifically, the use of the User-based Security Model [[RFC2274](#)] and the View-based Access Control Model [[RFC2275](#)] is RECOMMENDED.

It is then a customer/user responsibility to ensure that the SNMP entity giving access to an instance of this MIB, is properly configured to give access to the objects only to those principals (users) that have legitimate rights to indeed GET or SET (change/create/delete) them.

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