

## Power Ethernet MIB

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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 with a set of objects for managing a Power Source Equipment (PSE).

Distribution of this memo is unlimited.

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## **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 [[IEEE-802.3af](#)] 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 [[RFC2119](#)].

## **2. The Internet-Standard Management Framework**

For a detailed overview of the documents that describe the current Internet-Standard Management Framework, please refer to [section 7 of RFC 3410](#) [[RFC3410](#)].

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. MIB objects are generally accessed through the Simple Network Management Protocol (SNMP). Objects in the MIB are defined using the mechanisms defined in the Structure of Management Information (SMI). This memo specifies a MIB module that is compliant to the SMIV2, which is described in STD 58, [RFC 2578](#) [[RFC2578](#)], STD 58, [RFC 2579](#) [[RFC2579](#)] and STD 58, [RFC 2580](#) [[RFC2580](#)].

## **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 did 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 three MIB groups.

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 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 pethNotificationControlTable includes objects that control the transmission of notifications by the agent to a management application.

#### **5. Definitions**

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

```
IMPORTS
```

```
    MODULE-IDENTITY, mib-2, OBJECT-TYPE, Integer32,
    Gauge32, Counter32, NOTIFICATION-TYPE
        FROM SNMPv2-SMI
    TruthValue
        FROM SNMPv2-TC
    MODULE-COMPLIANCE, OBJECT-GROUP, NOTIFICATION-GROUP
        FROM SNMPv2-CONF
```



SnmpAdminString  
FROM SNMP-FRAMEWORK-MIB;

powerEthernetMIB MODULE-IDENTITY

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ORGANIZATION "IETF Ethernet Interfaces and Hub MIB  
Working Group"

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#### DESCRIPTION

"The MIB module for managing 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:

Group - A recommended, but optional, entity 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.

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-- RFC Ed.: replace yyyy with the actual RFC number & remove this notice.  
"

REVISION "200306220000Z" -- June 22, 2003  
DESCRIPTION "Initial version, published as RFC yyyy."  
-- RFC Ed.: replace yyyy with actual RFC number & remove this notice  
  
 ::= { mib-2 XXX }  
-- RFC Ed.: replace XXX with IANA-assigned number & remove this notice

pethNotifications OBJECT IDENTIFIER ::= { powerEthernetMIB 0 }  
pethObjects OBJECT IDENTIFIER ::= { powerEthernetMIB 1 }  
pethConformance OBJECT IDENTIFIER ::= { powerEthernetMIB 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 power Ethernet ports on a Power Source Entity (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,
    pethPsePortInvalidSignatureCounter
        Counter32,
    pethPsePortPowerDeniedCounter
        Counter32,
    pethPsePortOverLoadCounter
        Counter32,
    pethPsePortShortCounter
        Counter32,
    pethPsePortType
        SnmpAdminString,
    pethPsePortPowerClassifications
        INTEGER
}
```

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 MUST be used for non-modular devices. Furthermore, the same value MUST be used in this variable, pethMainPseGroupIndex, and pethNotificationControlGroupIndex to refer to a given box in a stack or module in the 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 which can provide the PSE functions.

false(2) The interface will act as it would if it had no PSE function."

REFERENCE

"IEEE Std 802.3af [Section 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 PethPsePortAdminEnabe attribute."

REFERENCE

"IEEE Std 802.3af [Section 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 writable.

A value of signal(1) menas 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 802.3af [Section 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 802.3af Table 33-5 tlim).

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 802.3af [Section 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 802.3af [Section 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 802.3af [Section 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 802.3af [Section 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 802.3af [Section 30.9.1.1.8](#)  
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 802.3af [Section 30.9.1.1.9](#)  
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 802.3af Section 30.9.1.1.10
```

```
    aPSEShortCounter"
```

```
::= { pethPsePortEntry 14 }
```

```
-- 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 boxes 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 MUST be
        used for non-modular devices. Furthermore, the same
        value MUST 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 MUST be used for non-modular devices. Furthermore,
            the same value MUST 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 must 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 must 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 must elapse between notifications being
      emitted by the same object instance."
  ::= { pethNotifications 3 }

--
-- 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
    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  
}

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

## 6. Acknowledgements

This document is the product of the Ethernet Interfaces and Hub MIB WG. The authors would like to recognize the special contributions of C.M. Heard and David Law.

## 7. Normative References

- [RFC2026] Bradner, S., "The Internet Standards Process - Revision 3", [BCP 9](#), [RFC 2026](#), October 1996.
- [RFC2578] McCloghrie, K., Perkins, D., Schoenwaelder, J., Case, J., Rose, M. and S. Waldbusser, "Structure of Management Information Version 2 (SMIv2)", STD 58, [RFC 2578](#), April 1999.
- [RFC2579] McCloghrie, K., Perkins, D., Schoenwaelder, J., Case, J., Rose, M. and S. Waldbusser, "Textual Conventions for SMIv2", STD 58, [RFC 2579](#), April 1999.
- [RFC2580] McCloghrie, K., Perkins, D., Schoenwaelder, J., Case, J., Rose, M. and S. Waldbusser, "Conformance Statements for SMIv2", STD 58, [RFC 2580](#), April 1999.
- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.
- [RFC2665] Flick, J., and J. Johnson, "Definitions of Managed Objects for the Ethernet-like Interface Types", [RFC 2665](#), August 1999.

NOTE - This RFC is under revision by the WG, and may be obsolete by the time of the publication. The RFC editor should replace it with





the revised version, if available.

[RFC3411] Harrington, D., Presuhn, R. and B. Wijnen, "An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks", [RFC 3411](#), December 2002.

[IEEE-802.3af] IEEE 802.3 Working Group, "Data Terminal Equipment (DTE)Power via Media Dependent Interface (MDI)", publication date TBD

NOTE - This normative reference will be replaced with the IEEE 802.3af Standard as soon as the IEEE will ratify it (expected date - July 2003)

## **8. Informative References**

[RFC3410] Case, J., Mundy, R., Partain, D. and B. Stewart, "Introduction and Applicability Statements for Internet-Standard Management Framework", [RFC 3410](#), December 2002

## **9. Intellectual Property**

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## **10. Security Considerations**

There are a number of management objects defined in this MIB module with a MAX-ACCESS clause of read-write. 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.

Setting the following object to incorrect values can result in improper operation of the PSE, including the possibility that the PD does not receive power from the PSE port:

```
pethPsePortAdminEnable
pethPsePortPowerPairs
pethPsePortPowerPriority
pethPsePortType
```

Setting the following objects to incorrect values can result in an excessive number of traps being sent to network management stations:

```
pethMainPseUsageThreshold
pethNotificationControlEnable
```

Some of the readable objects in this MIB module (i.e., objects with a MAX-ACCESS other than not-accessible) may be considered sensitive or vulnerable in some network environments. These are:

```
pethPsePortPowerPairsControlAbility
pethPsePortPowerPriority
pethPsePortPowerClassifications
```

It is thus important to control even GET and/or NOTIFY access to these objects and possibly to even encrypt their values when sending them over the network via SNMP.

SNMP versions prior to SNMPv3 did not include adequate security. 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 module.

It is RECOMMENDED that implementers consider the security features as provided by the SNMPv3 framework (see [\[RFC3410\]](#), [section 8](#)), including full support for the SNMPv3 cryptographic mechanisms (for authentication and privacy).

Further, deployment of SNMP versions prior to SNMPv3 is NOT RECOMMENDED. Instead, it is RECOMMENDED to deploy SNMPv3 and to enable cryptographic security. It is then a customer/operator responsibility to ensure that the SNMP entity giving access to an instance of this MIB module 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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