IEEE 803.af Management clause 30

Table 30–4—PSE and PD Capabilities

			PSE Recommended Package (Mandatory)	PSE Recommended Package (Optional)	PD Basic Package (Mandatory)	PD Recommended Package (Optional)
oPSE managed object class (30.9.1)						
aPSEID	ATTRIBUTE	GET	X			
aPSEPowerEnable	ATTRIBUTE	GET-SET	X			
aPSEPowerPairsControlAbility	ATTRIBUTE	GET		X		
aPSEPowerPairs	ATTRIBUTE	GET-SET		X		
aPSEPowerDetectionControl	ATTRIBUTE	GET-SET		X		
aPSEPowerDetectionStatus	ATTRIBUTE	GET		X		
aPSEPowerCurrentStatus	ATTRIBUTE	GET		X		
aPSEPowerVoltageStatus	ATTRIBUTE	GET		X		
aPSEPowerUsagePowert	ATTRIBUTE	GET		X		
aPSEPowerUsageCurrent	ATTRIBUTE	GET		X		
aPSEPowerUsageVoltage	ATTRIBUTE	GET		X		
aPSEPowerClassifications	ATTRIBUTE	GET		X		
acPSEPoweCurrentStatusClear	ACTION			X		
acPSEPoweVoltageStatusClear	ACTION			X		
oPD managed object class (30.9.2)						
aPDID	ATTRIBUTE	GET			X	
aPDPowerStatus	ATTRIBUTE	GET				X
aPDPowerPairs	ATTRIBUTE	GET				X
aPDPowerClassifications	ATTRIBUTE	GET				X

30.9 Management for Power Sourcing Equipment (PSE) and Powered Device (PD)

30.9.1 PSE managed object class
This subclause formally defines the behaviours for the oPSE managed object class, attributes and actions.

30.9.1.1 PSE attributes

30.9.1.1.1 aPSEID
    ATTRIBUTE
    APPROPRIATE SYNTAX:
        INTEGER
    BEHAVIOUR DEFINED AS:

The value of aPSEID is assigned so as to uniquely identify a PSE among the subordinate managed objects of the containing object.;

30.9.1.1.2 aPSEPowerEnable
ATTRIBUTE
APPROPRIATE SYNTAX:
An ENUMERATED VALUE that has one of the following entries:
auto   PSE function enabled
off   PSE function disabled

enable   enables power and detection mechanism for this port.
disable disables power for this port.

BEHAVIOUR DEFINED AS:
A read-write value that identifies the operational state of the PSE.A GET operation returns the current operational state of the PSE.A SET operation changes the current operational state of the PSE to the indicated value. An interface which can provide the PSE functions specified in Clause 33 will be enabled to do so when this attribute has the enumeration "enable". When this attribute has the enumeration "disable" the interface will act as it would if it had no PSE function. If a Clause 22 MII or Clause 35 GMII is present, then this will map to the Power Enable bit specified in 33.22.1.1.8.

30.9.1.1.3 aPSEPowerPairsControlAbility
ATTRIBUTE
APPROPRIATE SYNTAX:
BOOLEAN
BEHAVIOUR DEFINED AS:
Indicates the ability to control which PSE Pinout Alternative (see 33.2.1)is used for PD detection and power. When "true" the PSE Pinout Alternative used can be controlled through the aPSEPowerPairs attribute. When "false" the PSE Pinout Alternative used cannot be controlled through the aPSEPowerPairs attribute. If a Clause 22 MII or Clause 35 GMII is present, then this will map to the Pair Control Ability bit specified in 33.22.1.1.7.;

30.9.1.1.4 aPSEPowerPairs
ATTRIBUTE
APPROPRIATE SYNTAX:
An ENUMERATED VALUE that has one of the following entries:
signal   PSE Pinout Alternative A
spare   PSE Pinout Alternative B.
BEHAVIOUR DEFINED AS:
A read-write value that identifies the supported PSE Pinout Alternative specified in 33.2.1.A GET operation returns the current PSE Pinout Alternative in use. A SET operation changes the PSE Pinout Alternative used to the indicated value only if the attribute aPSEPowerPairsControlAbility is "true". If the attribute PSEPowerPairsControlAbility is "false" a SET operation has no effect. The enumeration "signal" indicates that PSE Pinout Alternative A is used for PD detection and power. The enumeration "spare" indicates that PSE Pinout Alternative B is used for PD detection and power.. If a Clause 22 MII or Clause 35 GMII is present, then this will map to the PSE Pair Control bit specified in 33.22.1.1.6.;

Comments:
1 Is the behavior defined for the enumeration "both" correct as this is not clear from subcluase 33.2.1.

30.9.1.1.5 aPSEPowerDetectionControl
ATTRIBUTE
APPROPRIATE SYNTAX:

An ENUMERATED VALUE that has one of the following entries:
auto   PD Detection normal
test   PD Detection test mode

BEHAVIOUR DEFINED AS:

A read-write value that identifies the current mode of operation of the PD Detection function specified in 33.2.3.A GET operation returns the current mode of operation of the PD Detection function. A SET operation changes the mode of operation of the PD Detection function to the indicated value The enumeration "auto" indicates that the PD Detection function is enabled .The enumeration "test" indicates that the PD Detection function is enabled however power will not be supplied if a valid PD is detected. If a Clause 22 MII or Clause 35 GMII is present, then this will map to the Detection Control bits specified in 33.22.1.1.5.;

30.9.1.1.6 aPSEPowerDetectionStatus

ATTRIBUTE

APPROPRIATE SYNTAX:

An ENUMERATED VALUE that has one of the following entries:
off
searching
deliveringPower
fault
test
detected
noValidPD

BEHAVIOUR DEFINED AS:

A read-only value that indicates the current status of the PD Detection function specified in 33.2.3. The enumeration "off" indicates that the PSE function has been disabled. The enumeration "searching" indicates that PD Detection function is enabled but has not detected a valid PD. The enumeration "deliveringPower" indicates that PD Detection function is enabled, has detected a valid PD and is delivering power. The enumeration "fault" indicates that the PD Detection function is enabled but has detected a fault, faults reported are vendor-specific. The enumeration "test" indicates the PD is in test mode and power is not actually delivered. The enumeration "detect" indicates that a valid PD has been detected. The enumeration "noValidPD" indicates that a NOT valid PD has been detected.If a Clause 22 MII or Clause 35 GMII is present, then this will map to the Detection Status bits specified in 30.9.1.1.6.;

Comments:
1 There is no enumeration provided in aPSEPowerDetectionStatus to report the situation where aPSE-PowerDetectionControl is in the "test" state and the PD Detection function has detected a valid PD since in the "test" state power is not actually delivered. Also what about the condition where a valid PD has been detected yet the PSE chooses not to power it as it hasn't sufficient power supply capac-ity to power this additional port. Suggest an additional enumeration "detected" for these situations.

30.9.1.1.7 aPSEPowerCurrentStatus

ATTRIBUTE

APPROPRIATE SYNTAX:

An ENUMERATED VALUE that has one of the following entries:
ok   current normal
underCurrent   under current condition has been detected
overCurrent   over current condition has been detected
both   under current and over current conditions have been detected

BEHAVIOUR DEFINED AS:

A read-only value that indicates the current status of the PD Power Supply function specified in 33.?.?.The enumeration "ok" indicates neither a under current or over current condition has been detected since the attribute was last cleared. The enumeration "underCurrent" indicates a under current condition has been detected since the attribute was last cleared. The enumeration "overCurrent" indicates a over

current condition has been detected since the attribute was last cleared. The enumeration "both" indicates that both a under current and over current condition has been detected since the attribute was last cleared. This attribute is cleared through the acPSEPowerCurrentStatusClear action. A under current condition is detected when the current drawn from the PSE at the MDI is less than Off mode current 2 for a duration greater that the Under load time limit.A over current condition is detected when the current drawn from the PSE at the MDI is greater than Over load current limit

for a duration greater that the Over load time limit. The values Over load current limit,Over load time limit, Off mode current 2 and Under load time limit are specified in Table 33-5.If a Clause 22 MII or Clause 35 GMII is present, then this will map to the Under Current and Over Current bits specified in 33.22.1.1.3 and 33.22.1.1.2.;

Comments:

1 What is the exact intent of the "ok" enumeration. Should this be returned only when a valid PD has been detected and the current being supplied between the values underCurrent and overCurrent.In this case when no PD is attached this attribute would return the enumeration "underCurrent". It could be possible to say that the enumeration "ok" should be returned when no PD was detected but what then is the definition of when to return the "underCurrent" enumeration, maybe something like a cur-rent less than Off mode current 2 but greater than some leakage current value.

2 In addition the intent of the "underCurrent" enumeration seems slightly unclear when compared to the "overCurrent" enumeration. The "underCurrent" enumeration will be set for normal operation,t hat is a PD being disconnected or powered down. The "overCurrent" enumeration seems to only occur when there is a fault condition.

3 It is assumed that the definition of the under current condition and the over current condition given above is correct. In addition it would be better if these definitions where moved to the body of the DTE Power Clause.

30.9.1.1.8 aPSEPowerVoltageStatus

ATTRIBUTE
APPROPRIATE SYNTAX:

An ENUMERATED VALUE that has one of the following entries:
ok   voltage normal
underVoltaget   under voltage condition has been detected
overVoltage   over voltage condition has been detected
both   under voltage and over voltage conditions have been detected

BEHAVIOUR DEFINED AS:

The enumeration "ok" indicates neither a under voltage or over voltage condition has been detected since the attribute was last cleared. The enumeration "underVoltaget" indicates a under voltage condition has been detected since the attribute was last cleared. The enumeration "overVoltage" indicates a over current condition has been detected since the attribute was last cleared. The enumeration "both" indicates that both a under voltage and over voltage condition has been detected since the attribute was last cleared. This attribute is cleared through the acPSEPowerVoltageStatusClear action.If a Clause 22 MII or Clause 35 GMII is present, then this will map to the Under Current and Over Current bits specified in 33.22.1.1.3 and 33.22.1.1.2.;

30.9.1.1.9 aPSEPowerUsagePower

ATTRIBUTE
APPROPRIATE SYNTAX:
INTEGER
BEHAVIOUR DEFINED AS:
A read-only value indicates the measured usage power expressed in Watts for a specific port ..

30.9.1.1.10 aPSEPowerUsageCurrent

ATTRIBUTE
APPROPRIATE SYNTAX:
INTEGER
BEHAVIOUR DEFINED AS:

A read-only value indicates the measured usage current expressed in mA for a specific port .

30.9.1.1.11 aPSEPowerUsageVoltage

ATTRIBUTE

APPROPRIATE SYNTAX:

INTEGER

BEHAVIOUR DEFINED AS:

A read-only value indicates the measured usage voltage expressed in mV for a specific port .

30.9.1.1.12 aPSEPowerClassifications

ATTRIBUTE

APPROPRIATE SYNTAX:

An ENUMERATED VALUE that has one of the following entries:

class0 - Default , indicates that the max Power levels at output of PSE 0.5 - 15.0 W

class1 - Optional ,indicates that the max Power levels at output of PSE 0.5 - 4.0 W

class2 - Optional, indicates that the max Power levels at output of PSE 4.0 - 7.0 W

class3 - Optional, indicates that the max Power levels at output of PSE 7.0 - 15.0 W

class4 - Optional, Future Use

class5 - Optional, Future Use

BEHAVIOUR DEFINED AS:

A read-only register describes different terminals on The Power over MDI network according to their power Consumption. Devices such as IP telephones, WLAN access points and others ,will be classified according to their power requirements.

30.9.1.2 PSE actions

30.9.1.2.1 acPSEPoweCurrentStatusClear

ACTION
APPROPRIATE SYNTAX:
 None required
BEHAVIOUR DEFINED AS:
 This action provides a means to clear aPSEPowerCurrentStatus.

Comments:
1 There has been some discussion in the IEEE P802.3ae project about the use of latching function in the MIB as SNMP can have multiple management accessing the same MIB. This means that two managers can be observing this attribute for a single port. One manager decides he has read the information they need so they clear the attribute through the acPSEPowerStatusClear action, the other mandatory has now lost the information and will read this attribute as if no events have occurred. Normally within IEEE P802.3, and this is what was decided for IEEE P802.3ae,a live bit is provided for the event and then a counter to count how may times it has happened, a good example is in subcluase 30.5.1.1.6 aJabber.

30.9.1.2.2 acPSEPoweVoltageStatusClear

ACTION
APPROPRIATE SYNTAX:
 None required
BEHAVIOUR DEFINED AS:
 This action provides a means to clear aPSEPowerVoltageStatus.

30.9.2 PD managed object class
This subclause formally defines the behaviours for the oPD managed object class and attributes.

30.9.2.1 PD attributes

30.9.2.1.1 aPDID
ATTRIBUTE
APPROPRIATE SYNTAX:
INTEGER
BEHAVIOUR DEFINED AS:
The value of aPDID is assigned so as to uniquely identify a PD among the
subordinate managed objects of the containing object.

30.9.2.1.2 aPDPowerStatus
ATTRIBUTE
APPROPRIATE SYNTAX:
An ENUMERATED VALUE that has one of the following entries:
off   PD not receiving Power
receivingPower   PD receiving Power
BEHAVIOUR DEFINED AS:
A read-only value that indicates the current status of the PD??? function specified in
33.?.?. The enumeration "off" indicates that the PD is drawing a current less than I
Port as specified in Table 33-10.The enumeration "receivingPower" indicates that the
PD is drawing a current greater than I Port as specified in Table 33-10.If a Clause 22
MII or Clause 35 GMII is present, then this will map to the PD Power Status bits
specified in 33.22.1.2.3.;

30.9.2.1.3 aPDPowerPairs
ATTRIBUTE
APPROPRIATE SYNTAX:
An ENUMERATED VALUE that has one of the following entries:
signal   PD Pinout Mode A
spare   PD Pinout Mode B
both   PD Pinout Mode A and
BEHAVIOUR DEFINED AS:
A read-only value that indicates the supported PD Pinout Mode as specified in 33.3.1.
The enumeration "signal" indicates that only PD Pinout Mode A is supported by the
PD. The enumeration "spare" indicates that only PD Pinout Mode B is supported by
the PD. The enumeration "both" indicates that both PD Pinout Mode A and are
supported by the PD. If a Clause 22 MII or Clause 35 GMII is present,t hen this will
map to the PD Pair Control bits specified in 30.9.2.1.3.;

30.9.2.1.4 aPDPowerClassifications
ATTRIBUTE
APPROPRIATE SYNTAX:
An ENUMERATED VALUE that has one of the following entries:
class0   - Default , indicates that the max Power levels at input of PD
                       0.44 -12.95 Watts
class1   - Optional ,indicates that the max Power levels at input of PD
                        0.44 -3.84 Watts
class2   - Optional, indicates that the max Power levels at input of PD
                       3.84 to 6.49 Watts
class3   - Optional, indicates that the max Power levels at input of PD
                       6.49 to 12.95 Watts
class4   - Not allowed, Future Use
class5   - Not allowed, Future Use
BEHAVIOUR DEFINED AS:
A read-only value describes different terminals on the Power over MDI network
according to their power consumption. Devices such as IP telephones, WLAN access
points and others, will be classified according to their power requirements.