Add new PSE MIB (Before 30.9.1.1.17) and reflect same in Table 30-4

aReceivedDLLPDRequestedPowerValue

ATTRIBUTE

APPROPRIATE SYNTAX:

INTEGER

BEHAVIOUR DEFINED AS:

A GET attribute that returns the PD requested power value received from the remote system. The requested power value is the new maximum input average power (see 33.3.7.2) the remote system will ever draw under this power allocation if it is accepted. The requested power value is encoded according to Equation (33–16), where *X* is the decimal value of aReceivedDLLPDRequestedPowerValue.

Change definition of PSE MIB (30.9.1.1.17) and reflect same in Table 30-4

aMirroredDLLPDRequestedPowerValue

ATTRIBUTE

APPROPRIATE SYNTAX:

INTEGER

BEHAVIOUR DEFINED AS:

A GET attribute that returns the PD requested power value that local system mirrors back to the remote system. The definition for requested power value is same as described in (Prev Section). The requested power value is encoded according to Equation (33–16), where *X* is the decimal value of aMirroredDLLPDRequestedPowerValue.

Add new PSE MIB (After 30.9.1.1.18) and reflect same in Table 30-4

aEchoedDLLPSEAllocatedPowerValue

ATTRIBUTE

APPROPRIATE SYNTAX:

INTEGER

BEHAVIOUR DEFINED AS:

A GET attribute that returns the PSE allocated power value received from the remote system. The definition for allocated power value is same as described in (Prev Section). The power value is encoded according to equation Equation (33–16), where *X* is the decimal value of aEchoedDLLPSEAllocatedPowerValue.

Add new PD MIB (Before 30.9.2.1.8) and reflect same in Table 30-4

aReceivedDLLPSEAllocatedPowerValue

ATTRIBUTE

APPROPRIATE SYNTAX:

INTEGER

BEHAVIOUR DEFINED AS:

A GET attribute that returns the PSE allocated power value received from the remote system. The allocated power value is the maximum input average power (see 33.3.7.2) the remote system expects the PD to ever draw under this power allocation if accepted. The power value is encoded according to equation Equation (33–16), where *X* is the decimal value of aReceivedDLLPSEAllocatedPowerValue.

Change definition of PD MIB (30.9.2.1.8) and reflect same in Table 30-4

aMirroredDLLPSEAllocatedPowerValue

ATTRIBUTE

APPROPRIATE SYNTAX:

INTEGER

BEHAVIOUR DEFINED AS:

A GET attribute that returns the PSE allocated power value that local system mirrors back to the remote system. The power value is encoded according to equation Equation (33–16), where *X* is the decimal value of aMirroredDLLPSEAllocatedPowerValue.

Add new PD MIB (After 30.9.2.1.8) and reflect same in Table 30-4

aEchoedDLLPDRequestedPowerValue

ATTRIBUTE

APPROPRIATE SYNTAX:

INTEGER

BEHAVIOUR DEFINED AS:

A GET attribute that returns the PD requested power value received from the remote system. The requested power value is the new maximum input average power (see 33.3.7.2) the remote system will ever draw under this power allocation if it is accepted. The power value is encoded according to equation Equation (33–16), where *X* is the decimal value of aMirroredDLLPDRequestedPowerValue.

Add the following state variables (33.7.6.2)

ReceivedPDRequestedPowerValue

The copy of PDRequestedPowerValue that the PSE receives from remote system. This variable is mapped from the aReceivedDLLPDRequestedPowerValue attribute (MIB reference).
Values: 0 through 295.

EchoedPSEAllocatedPowerValue

The copy of PDRequestedPowerValue that the PSE receives from remote system. This variable is mapped from the aEchoedDLLPSEAllocatedPowerValue attribute (MIB reference).

ReceivedPSEAllocatedPowerValue

The copy of PSEAllocatedPowerValue that the PD receives from remote system. This variable is mapped from the aReceivedDLLPSEAllocatedPowerValue attribute (MIB reference).
Values: 0 through 295.

PDMaxPowerValue

Integer that indicates the actual PD power value of the local system. The actual PD power value for a PD is the maximum input average power (see 33.3.7.2) the PD will ever draw under the current power allocation.

TempVar

A temporary variable used to store Power Value.

Change following variable definition (33.7.6.2)

MirroredPSEAllocatedPowerValue

This variable is updated by the PD state machine. This variable maps into aMirroredDLLPSEAllocatedPowerValue attribute (MIB reference).

MirroredPDRequestedPowerValue

This variable is updated by the PSE state machine. This variable maps into aMirroredDLLPDRequestedPowerValue attribute (MIB reference).

Add the following function (33.7.6.2)

pse_power_review

This function evaluates the power allocation/budget of the PSE based on local system changes.
The function returns the following variables

PSE_NEW_VALUE : The new max power value that the PSE expects the PD to draw

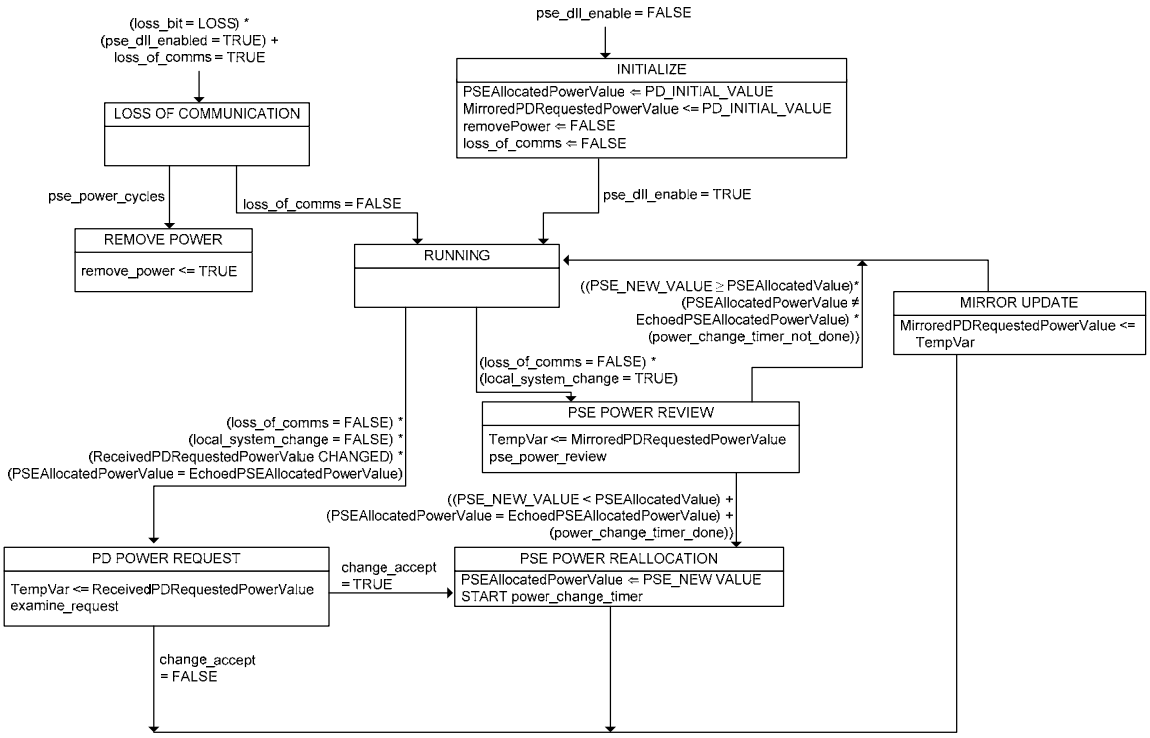
pd_power_review

This function evaluates the power requirements of the PD based on local system changes and/or changes in the PSE allocated power values.

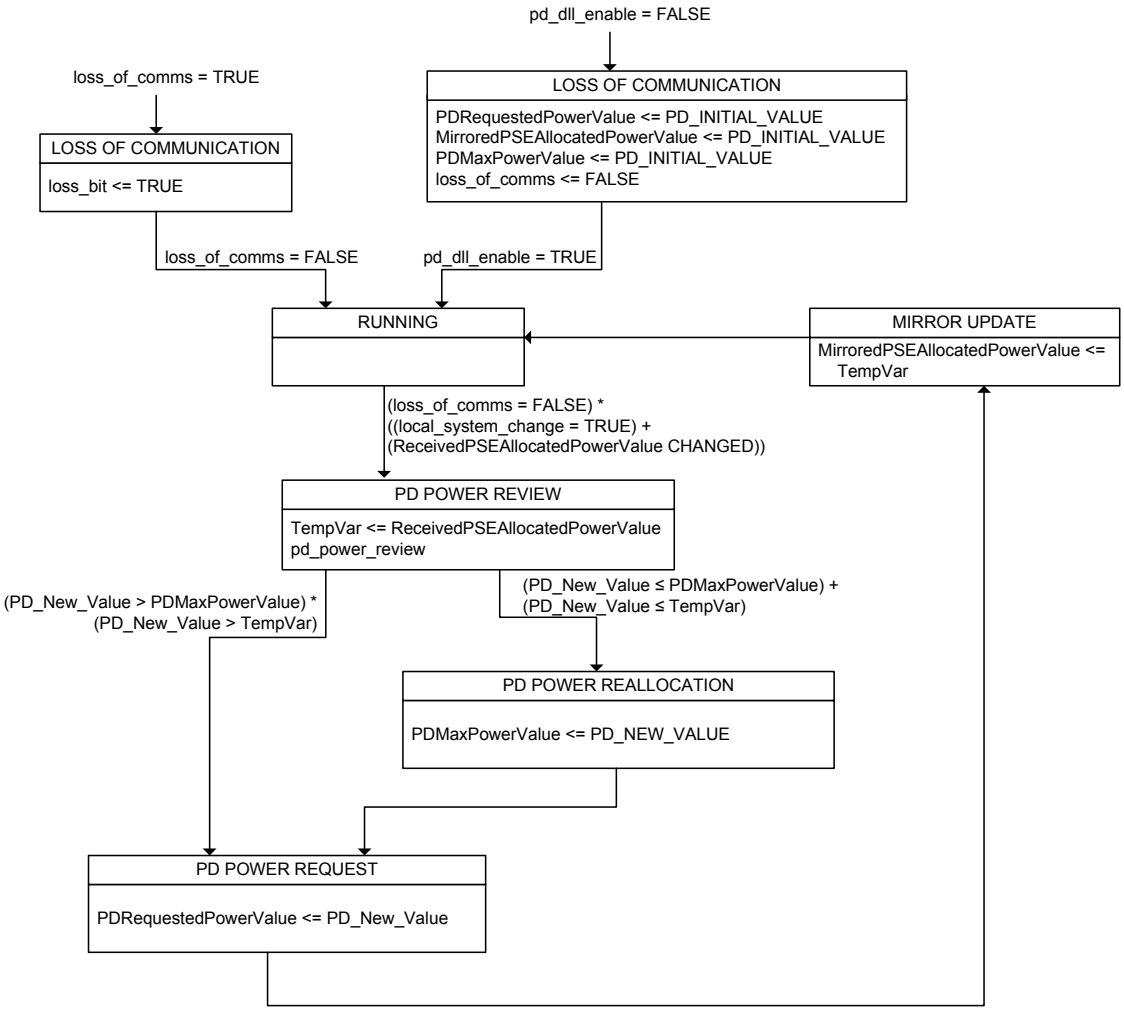
The function returns the following variables

PD_NEW_VALUE : The new max power value that the PD wants to draw

Change the PSE state diagram to the following:



Change the PD state diagram to the following:



Replace Section 33.7.7

The PSE and PD utilize the LLDP mechanism to advertise their various attributes to the other entity.

The PD may request a new power value through the aDLLPDRequestedPowerValue (30.9.2.1.7) attribute in the DTE Power via MDI classification PD object class. The request appears to the PSE as a change to the aReceivedDLLPDRequestedPowerValue (Reference) attribute in the DTE Power via MDI classification PSE object class. The PSE responds to a PD's request through the aDLLPSEAllocatedPowerValue (Reference) attribute in the DTE Power via MDI classification PSE object class. The PSE also copies the value of

aReceivedDLLPDRequestedPowerValue (Reference) attribute in the DTE Power via MDI classification PSE object class to aMirroredDLLPDRequestedPowerValue (Reference) attribute in the DTE Power via MDI classification PSE object class. This appears to the PD as a change to the aEchoedDLLPSEAllocatedPowerValue (Reference) attribute in the DTE Power via MDI classification PD object class.

The PSE may allocate a new power value through the aDLLPSEAllocatedPowerValue (Reference) attribute in the DTE Power via MDI classification PSE object class. The request appears to the PD as a change to the aReceivedDLLPSEAllocatedPowerValue (Reference) attribute in the DTE Power via MDI classification PD object class. The PD responds to a PSE's request through the aDLLPDRequestedPowerValue (Reference) attribute in the DTE Power via MDI classification PD object class. The PD also copies the value of aReceivedDLLPSEAllocatedPowerValue (Reference) attribute in the DTE Power via MDI classification PD object class to aMirroredDLLPSEAllocatedPowerValue (Reference) attribute in the DTE Power via MDI classification PD object class. This appears to the PSE as a change to the aEchoedDLLPSEAllocatedPowerValue (Reference) attribute in the DTE Power via MDI classification PD object class.

The state machines describe the behaviour above.

Replace Section 33.7.7.1

During normal operation the PSE machine is in the RUNNING state. If the PSE wants to initiate a change in the PD allocation, the local_system_change is asserted and the PSE enters the PSE POWER REVIEW state in the machine where a new power allocation value PSE_NEW_VALUE is generated. It then enters PSE POWER REALLOCATION state which causes the PSEAllocatedPowerValue to be updated to PSE_NEW VALUE. The machine then updated the MirroredPDRequestedPowerValue in the MIRROR UPDATE state and then returns to the RUNNING state.

If the PSE machine sees a change to the previously stored ReceivedPDRequestedPowerValue, it recognizes a request by the PD to change its power allocation. The PSE examines the request by entering into the PD POWER REQUEST state. The PSE may decide to ignore the request, in which case it returns to the RUNNING state or it may decide to change the PD allocation by entering the PSE POWER REALLOCATION state and behaves as described above.

When the PSE enters the MIRROR UPDATE state it also re-starts a timer that may be used by the higher layer control function. For example, it may wait to see if the PD changes its request based on the reallocation. The use of the timer is outside the scope of this standard.

At any time, if the conditions of a loss of communication are met, the PSE enters the LOSS OF COMMUNICATIONS state.

Replace Section 33.7.7.2

During normal operation the PD machine is in the RUNNING state. If the PD state machine sees a change to the previously stored ReceivedPSEAllocatedPowerValue or it recognizes a command by the PD to change its power allocation, it enters the PD POWER REVIEW state in the machine. In this state the PD evaluates the change and generates an updated power value called PD_NEW_VALUE. Based on this value the PD transitions to the PD POWER REALLOCATION state and changes it current power draw if required. Ultimately it enters the PD POWER REQUEST state which causes the PDRequestedPowerValue to be updated to PD_NEW_VALUE. The machine then returns to the RUNNING state after updating the MirrorPSEAllocatedPowerValue in the MIRROR UPDATE state.

If the PD machine wants to initiate a request in its allocation, the local_system_change is asserted and the PD enters the PD POWER REQUEST state in the machine, which causes the PDRequestedAPowerValue to be updated to the new level the PD would like indicated by the PD_NEW VALUE. The machine then returns to the RUNNING state.

At any time, if the conditions of a loss of communication are met, the PD enters the LOSS OF COMMUNICATIONS state.

Other DLL Changes

Add new PSE MIB variable (after 30.9.1.1.20) and reflect the same in Table 30-4

aDLLPSEResponseTime
ATTRIBUTE
APPROPRIATE SYNTAX:
INTEGER
BEHAVIOUR DEFINED AS:
A GET attribute that returns the response time of the local system to update the MIB variable aDLLPSEAllocatedPowerValue when there is a change in aDLLReceivedPDRequestedPowerValue provided that the MIB variables aDLLPSEAllocatedPowerValue and aDLLEchoedPSEAllocatedPowerValue are equal.
The response time is encoded according to the following Table.

Bit	Function	Value/Meaning
15:0	PSE Response Time	ResponseTime = 1 x (decimal value of bits) ms. Valid values for these bits are decimal 0 through 10000

Add new PD MIB variable (after 30.9.2.1.10) and reflect the same in Table 30-4

aDLLPDResponseTime
ATTRIBUTE
APPROPRIATE SYNTAX:
INTEGER
BEHAVIOUR DEFINED AS:
A GET attribute that returns the response time of the local system to update the MIB variable aDLLPDRequestedPowerValue when there is a change in aDLLReceivedPSEAllocatedPowerValue.
The response time is encoded according to the above Table.

Replace Section 33.7.5 with:

An LLDPDU containing Power via MDI classification TLV shall be sent within 10 seconds of Data Link Layer classification being enabled in a PSE as indicated by the variable pse_dll_enabled (33.2.4.4, 33.7.6.2).

An LLDPDU containing Power via MDI classification TLV shall be sent within 5 minutes of Data Link Layer classification being enabled in a PD as indicated by the variable pd_dll_enabled (33.3.3.3, 33.7.6.2) if the pse_power_type (33.3.3.3) variable is set to 2 and the power draw exceeds 12.95W.

Under normal operation when the PSE MIB variables aDLLPSEAllocatedPowerValue and aDLLReceivedPDRequestedPowerValue are equal; an LLDPDU containing a DTE Power via MDI classification TLV with updated value for “Allocated PSE Power Value” field shall be sent within 10 seconds of an LLDPDU containing a DTE Power via MDI classification TLV being received where the “Requested PD Power Value” field is different from the previously communicated value.

Under normal operation an LLDPDU containing a DTE Power via MDI classification TLV with updated value for “Requested PD Power Value” field shall be sent within 10 seconds of an LLDPDU containing a DTE Power via MDI classification TLV being received where the “Allocated PSE Power Value” field is different from the previously communicated value.

Definition for TLV field “Requested PD Power Value” : Append to 33.7.2.2

For the PD, “Requested PD Power Value” is the maximum input average power (see 33.3.7.2) the PD wants to draw. For the PSE, “Requested PD Power Value” is the Requested PD power value received from the PD that is used to compute the power that the PSE wants to allocate to the PD.

Definition for TLV field “Allocated PSE Power Value” is missing (33.7.2.3)

The allocated power value field shall contain the PSE’s allocated power value defined in Table 33–2. For the PSE, “Allocated PSE Power Value” is the maximum input average power (see 33.3.7.2) the PSE expects the PD to ever draw. For the PD, “Allocated PSE Power Value” is the power value received from the PSE that is used to compute the maximum input average power that the PD wants to draw.