-To remove the unchanged parts for shorter document before final submission.

Comment #55, #56, #57, #63, #70, #104, #105, #106, #107, #117, #120, #121, #122, #126, #128, #326, #327, #399, (TDL #268, #269, #358, #143 from D2.2)

Single-signature DLL state machines:

1. From comment #155 D2.2, the assignment 'pd_dll_power_type <= parameter_type' in the INITIALIZE state is not required (Figure 145-44, PD DLL state machine) and was already implemented in D2.3. Removing it also from Table 145-39.
2. From comment #167 D2.2, the assignment 'pse_dll_power_type <= pse_power_type' in the INITIALIZE state is not required (Figure 145-43, PSE DLL state machine) and was already implemented in D2.3. Removing it also from Table 145-39.
3. Removing pse_dll_power_type from the variable list. It is not used by the state machines Figures 145-43 and Figure 145-44.
4. Removing pse_power_type from the variable list. It is not used by the state machines Figures 145-43 and Figure 145-44.
5. pd_dll_single_or_dual was removed the entire draft due to the following reasons: (a) PD knows if it is a single-signature or dual-signature. (b) This information is in the TLVs fields anyway. As a result PD will use the correct DLL state machine.
6. pse_dll_single_or_dual was replaced with the variable sig_type which already exists and generated but the connection check function. It is needed for PSE DLL state machine only.

Dual-signature DLL state machines:

7. The suffix "(M)" was replace with "(X)" to prevent confusion with the Mode word.
8. The use of "Alternative" in a variable name was replaced with "Alt" for having shorter variable names.
9. PD DLL state machine variables must use variable names with the suffix XXX_mode~~(M)~~(X) (e.g. PDRequestedPowerValue_mode(X)) and their attributes need to use XXX**A** and XXX**B** (e.g. aLldpXdot3LocPDRequestedPowerValue**A** and aLldpXdot3LocPDRequestedPowerValue**B** without the suffix "Mode" or "Alt" due to the fact that the same attribute may be used in PSE or PD and using PSE attribute with the suffix "Mode" is confusing.
10. PSE DLL state machine variables must use variable names with the suffix XXX_Alt(X) (e.g. PSEAllocatedPowerValue_Alt(X) and their attributes need to use XXXA and XXXB (e.g. aLldpXdot3LocPSEAllocatedPowerValue**A** and aLldpXdot3LocPSEAllocatedPowerValue**A** without the suffix "Mode" or "Alt" due to the fact that the same attribute may be used in PSE or PD and using PSE attribute with the suffix "Mode" is confusing.
11. From comment #167 D2.2, the assignment 'pse_dll_power_type <= pse_power_type' in the INITIALIZE state is not required (Figure 145-47, PSE DLL state machine). Removing pse_dll_power_type from the variable list. It is not used by the state machines Figures 145-47 and Figure 145-48.
12. From comment #155 D2.2, the assignment 'pd_dll_power_type <= parameter_type' in the INITIALIZE state is not required (Figure 145-48, PD DLL state machine). Removing pse_power_type from the variable list. It is not used by the state machines Figures 145-47 and Figure 145-48.
13. Removing the variables pd_dll_power_type and pse_dll_power_types from Table 145-40.
14. In PSE_POWER_REVIEW state, the local_system_change_Alt~~(M)~~(X) was reset to prevent it from being stuck in endless loop (set to local_system_change_Alt~~(M)~~(X) < == FALSE). This is done according to Clause 21.5.2, "Once set, variables retain their values as long as succeeding blocks contain no references to them." As a result, we need to explicitly change it in the state when needed. Other option would be to treat the exit from RUNNING state to PSE_POWER_REVIEW as a triggering pulse but in this case we need to define this behavior in the local_system_change_Alt~~(M)~~(X) variable definition. Same issues with the MIRROR_UPDATE state for pse_power_update_Alt~~(M)~~(X) <= True. Both methods where simulated and work. I choose the first one which is simple and covered by Clause 21.5.2.
15. Missing "_mode~~(M)~~(X)" or "_Alt~~(M)~~(X)" in some of the parameters
16. Adding missing dual-signature variables to clause 30 and updating clause 79 Tables.

Proposed Remedy:

Implement the following baseline with the proposed additions, deletions and changes.

Proposed Baseline starts here

Make the following changes (insertion, deletions etc.) to 145.5

145.5 Data Link Layer classification

Additional control and classification functions are supported using Data Link Layer classification using frames based on the IEEE 802.3 Organizationally Specific TLVs defined in Clause 79. Single-signature PDs advertising a Class 4 signature or higher and dual-signature PDs support Data Link Layer classification (see 145.3.6). Data Link Layer classification is optional for all other devices. All reserved fields in transmitted Power via MDI TLVs shall contain zero, and all reserved fields in received Power via MDI TLVs shall be ignored.

145.5.1 TLV frame definition

Implementations that support Data Link Layer classification shall comply with all mandatory parts of IEEE Std 802.1AB-2016; shall support the Power via MDI Type, Length, Value (TLV) defined in 79.3.2 and may support the Power via MDI Measurements TLV defined in 79.3.8; and shall support the control state diagrams defined in 145.5.3.

145.5.2 Data Link Layer classification timing requirements

PSEs shall send an LLDPDU containing a Power via MDI TLV within 10 seconds of Data Link Layer classification being enabled in the PSE as indicated by the variable pse_dll_enabled (145.2.5.4, 145.5.3.3).

PDs shall set the state variable pd_dll_ready within 5 minutes of Data Link Layer classification being enabled in a PD as indicated by the variable pd_dll_enabled (145.3.3.4, 145.3.3.9, and 145.5.3.3).

Under normal operation, an LLDPDU containing a Power via MDI TLV with an updated value for the "PSE allocated power value" field shall be sent within 10 seconds of receipt of an LLDPDU containing a Power via MDI TLV where the "PD requested power value" field is different from the previously communicated value.

Under normal operation, an LLDPDU containing a Power via MDI TLV with an updated value for the "PD requested power value" field shall be sent within 10 seconds of receipt of an LLDPDU containing a Power via MDI TLV where the "PSE allocated power value" field is different from the previously communicated value.

145.5.3 Power control state diagrams

The power control state diagrams for PSEs and PDs specify the externally observable behavior of a PSE and PD Data Link Layer classification respectively.

Data Link Layer classification of PSEs connected to a single-signature PD, shall provide the behavior in the state diagram defined in Figure 145–43 ~~and Figure 145–45~~. Data Link Layer classification of PSEs connected to a dual-signature PD, shall provide the behavior in the state diagram defined in Figure 145–47 .

Single-signature PD Data Link Layer classification shall provide the behavior of the state diagram defined in Figure 145–~~46~~ 44 ~~and Figure 145–44~~. Dual-signature PD Data Link Layer classification shall provide the behavior of the state diagram defined in Figure 145–48.

145.5.3.1 Conventions

The body of this subclause is comprised of state diagrams, including the associated definitions of variables, constants, and functions. Should there be a discrepancy between a state diagram and descriptive text, the state diagram prevails.

The notation used in the state diagrams follows the conventions of state diagrams as described in 145.2.5.2.

-Editor to splits the constants, variable and function list into one for PSE and one for PD.

145.5.3.2 Single-signature system Constants

Variables PD_DLLMAX_VALUE, PD_INITIAL_VALUE, and PSE_INITIAL_VALUE, are quantized to fit the available resolution. Additional information on power levels for Classes 6 and 8 may be found in 145.3.8.2.1.

PD_DLLMAX_VALUE

This value is derived from pd_max_power variable (145.3.3.4) described as follows:

pd_max_power	PD_DLLMAX_VALUE
0	130
1	39
2	65
3	130
4	255
5	400
6	600
7	620
8	999

PD_INITIAL_VALUE

This value is derived as follows from the pd_max_power (145.3.3.4) variable used in the PD state Diagrams; defined in Figure 145–26:

pd_max_power	PD_INITIAL_VALUE
0	≤ 130
1	≤ 39
2	≤ 65
3	≤ 130
4	≤ 255
5	≤ 400
6	≤ 600
7	≤ 620
8	≤ 900

PSE_INITIAL_VALUE

This value is derived as follows from pd_allocated_pwr, as defined in 145.2.5.4, which is used in the PSE state diagrams in 145.2.5.7:

pd_allocated_power	PSE_INITIAL_VALUE
1	130
1	39
1	65
1	130
1	130
2	255
3	400
3	600
4	620
4	900

145.5.3.3 Single-signature system Variables

The PSE power control state diagram (Figure 145–43) and PD power control state diagram (Figure 145–44) use the following variables:

MirroredPDAutoclassRequest

The copy of the PD Autoclass request field in the Power via MDI TLV that the PSE receives from the remote system. This variable is mapped from aLldpXdot3RemPDAutoclassRequest (30.12.3.1.18o).

Values:

FALSE: The PD does not request an Autoclass measurement to be performed.
TRUE: The PD requests an Autoclass measurement to be performed.

MirroredPDRequestedPowerValue

The copy of the PD Requested Power Value field in the Power Via MDI TLV that the PSE receives from the remote system in units of 0.1 W. This variable is mapped from the aLldpXdot3RemPDRequestedPowerValue attribute (30.12.3.1.17).

Values: 1 through 999

MirroredPDRequestedPowerValueEcho

The copy of the PD Requested Power Value field in the Power Via MDI TLV that the PD receives from the remote system. This variable is mapped from the aLldpXdot3RemPDRequestedPowerValue attribute (30.12.3.1.17).

Values: 1 through 999

MirroredPSEAllocatedPowerValue

The copy of the PSE Allocated Power Value field in the Power Via MDI TLV that the PD receives from the remote system in units of 0.1 W. This variable is mapped from the aLldpXdot3RemPSEAllocatedPowerValue attribute (30.12.3.1.18).

Values: 1 through 999

MirroredPSEAllocatedPowerValueEcho

The copy of the PSE Allocated Power Value field in the Power Via MDI TLV that the PSE receives from the remote system. This variable is mapped from the aLldpXdot3RemPSEAllocatedPowerValue attribute (30.12.3.1.18).

Values: 1 through 999

MirroredPSEAutoclassCompleted

The copy of the PSE Autoclass completed field in the Power via MDI TLV that the PD receives from the remote system. This variable is mapped from the aLldpXdot3RemPSE-AutoclassCompleted (30.12.3.1.18i) attribute.

Values:

FALSE: The PSE has not completed the Autoclass measurement, or it is not performing a Autoclass measurement.
TRUE: The PSE has completed the Autoclass measurement.

MirroredPSEAutoclassSupport

The copy of the PSE Autoclass support field in the Power via MDI TLV that the PSE receives from the remote system. This variable is mapped from the aLldpXdot3RemPSEAutoclassSupport (30.12.3.1.18m) attribute.

Values:

FALSE: The PSE does not support Autoclass
TRUE: The PSE supports Autoclass

PDAutoclassRequest

A boolean that indicates if the PD requests Autoclass in the PD. This variable is mapped from aLldpXdot3LocPDAutoclassRequest (30.12.2.1.18o).

Values:

FALSE: The PD does not request an Autoclass measurement to be performed.
TRUE: The PD requests an Autoclass measurement to be performed.

PDMaxPowerValue

Integer that indicates the actual PD power value of the local system in units of 0.1 W. The actual PD power value for a PD is the maximum input average power (see 145.3.8.2) the PD ever draws under the current power allocation.

PDRequestedPowerValue

Integer that indicates the PD requested power value in the PD in units of 0.1 W. The value is the maximum input average power (see 145.3.8.2) the PD requests. This variable is mapped from the aLldpXdot3LocPDRequestedPowerValue attribute (30.12.2.1.17).

Values:

1 through PD_DLLMAX_VALUE

PDRequestedPowerValueEcho

This variable is updated by the PSE state diagram. This variable maps into the aLldpXdot3LocPDRequestedPowerValue attribute (30.12.2.1.17).

Values: 1 through 999

PSEAllocatedPowerValue

Integer that indicates the PSE allocated power value in the PSE in units of 0.1 W. The value is the maximum input average power (see 145.3.8.2) the PD ever draws. This variable maps to the aLldpXdot3LocPSEAllocated-PowerValue attribute (30.12.2.1.18).

Values: 1 through 999

PSEAllocatedPowerValueEcho

This variable is updated by the PD state diagram. This variable maps into the aLldpXdot3LocPSEAllocatedPowerValue attribute (30.12.2.1.18).

Values: 1 through 999

PSEAutoclassCompleted

A boolean that indicates the PSE has completed the PD Autoclass request. This variable is mapped from the aLldpXdot3LocPSEAutoclassCompleted (30.12.2.1.18n) attribute.

Values:

FALSE: The PSE has not completed the Autoclass measurement, or it is not performing a Autoclass measurement.

TRUE: The PSE has completed the Autoclass measurement.

PSEAutoclassSupport

A boolean control variable that indicates if the PSE supports Autoclass in the PSE. This variable is mapped from the aLldpXdot3LocPSEAutoclassSupport (30.12.2.1.18m) attribute.

Values: FALSE: The PSE does not support Autoclass

TRUE: The PSE supports Autoclass

TempVar

A temporary variable used to store Power Value in units of 0.1 W.

Values: 1 through 999

local_system_change

An implementation-specific control variable that indicates that the local system wants to change the allocated power value. In a PSE, this indicates it is going to change the power allocated to the PD. In a PD, this indicates it is going to request a new power allocation from the PSE.

Values:

FALSE: The local system does not wants to change the power allocation.

TRUE: The local system wants to change the power allocation.

pd_autoclass

A control variable output by the PSE state diagram indicating whether the PSE has observed an Autoclass measurement request during Physical Layer Classification. See 145.2.5.4.

Values:

FALSE: The PSE does not observe an Autoclass measurement request.

TRUE: The PSE observes an Autoclass measurement request.

pd_dll_enabled

A variable output by the PD state diagram (Figure 145–26) to indicate if the PD Data Link Layer classification mechanism is enabled.

Values:

FALSE: PD Data Link Layer classification is not enabled.

TRUE: PD Data Link Layer classification is enabled.

pd_dll_ready

An implementation-specific control variable that indicates that the PD has initialized Data Link Layer classification. This variable maps into the aLldpXdot3LocReady attribute (30.12.2.1.20).

Values:

FALSE: Data Link Layer classification has not completed initialization.

TRUE: Data Link Layer classification has completed initialization.

~~pd_dll_single_or_dual~~

~~A variable in the PD power control state diagram, defined in Figure 145-44, that indicates if the PD is a single-signature PD or a dual-signature PD. Values: single: A single-signature PD configuration is connected to the PI. dual: A dual-signature PD configuration is connected to the PI.~~

pd_full_power

A boolean control variable used in the PD Autoclass control state diagram that indicates if the PD should be in a mode where it consumes the amount of power it wants to be budgeted for.

Values:

FALSE: No requirement on PD power consumption.

TRUE: The PD consumes the maximum amount of power it wants to be budgeted for.

pse_dll_enabled

A variable output by the PSE state diagram (Figure 145-13) to indicate if the PSE Data Link Layer classification mechanism is enabled.

Values:

FALSE: PSE Data Link Layer classification is not enabled.

TRUE: PSE Data Link Layer classification is enabled.

~~pse_dll_power_type~~

~~A control variable output by the PD power control state diagram, defined in Figure 33–49, that indicates the PSE Type as 1 or 2, see 79.3.2.4.1.~~

~~Values:~~

~~1: The PSE is a Type 1 PSE, for a Type 1 PSE~~

~~2: The PSE is a Type 2 PSE, for Type 2, Type 3, or Type 4PSEs~~

pse_dll_ready

An implementation-specific control variable that indicates that the PSE has initialized Data Link Layer classification. This variable maps into the aLldpXdot3LocReady attribute (30.12.2.1.20).

Values:

FALSE: Data Link Layer classification has not completed initialization.

TRUE: Data Link Layer classification has completed initialization.

sig_type

~~pse_dll_single_or_dual~~

A variable ~~in the PSE power control state diagram defined in Figure 145-43 (~~generated from the ~~do_cxn_check~~ do_cxn_chk function of the ~~Type 3 and Type 4 PSE state diagram in Figure 145-13)~~ which indicates if the PSE is connected to a single-signature PD or dual-signature PD.

Values:

Invalid: Neither single-signature PD nor dual-signature PD connection check signature has been found. This include an open circuit condition.

single: A single-signature PD configuration is connected to the PI.

dual: A dual-signature PD configuration is connected to the PI.

~~pse_power_type~~

~~A control variable that indicates to the PD the type of PSE by which it is being powered.~~

~~Values:~~

~~1: The PSE is a Type 1 PSE.~~

~~2: The PSE is a Type 2, Type 3, or Type 4 PSE.~~

trigger_autoclass

A control variable used in the PD to trigger a new Autoclass measurement request to the PSE.

Values:

FALSE: The PD does not want to trigger a new Autoclass measurement.

TRUE: The PD wants to trigger a new Autoclass measurement.

A summary cross-references between the DTE Power via MDI classification local and remote object class attributes and the PSE and PD power control state diagrams, including the direction of the mapping, is provided in Table 145–39.

145.5.3.4 Timers

tautoclass_timeout

A timer used to detect the timeout of a pending Autoclass request by the PD. The value of this timer may be set to any value greater than 30 seconds.

145.5.3.5 Functions

do_autoclass_measure

A function defined in the PSE state diagram, which measures PAutoclass as defined in 145.2.7.2. This function returns the following variables:

P_AUTOCLASS:

The maximum power measured by the PSE, PAutoclass.

pse_power_review

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

PSE_NEW_VALUE:

The new maximum power value that the PSE expects the PD to draw in units of 0.1 W.

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 value. The function returns the following variables:

PD_NEW_VALUE:

The new maximum power value that the PD wants to draw in units of 0.1 W.

Remove from Table 145-39 the variables pd_dll_power_type and pse_dll_power_type.

Table 145–39—Attribute to state diagram variable cross-reference

Entity	Attribute	Mapping	State diagram variable
oLldpXdot3LocSystemsGroup Object Class			
PSE	aLldpXdot3LocPDRequestedPowerValue	←	PDRequestedPowerValueEcho
	aLldpXdot3LocPSEAllocatedPowerValue	←	PSEAllocatedPowerValue
	aLldpXdot3LocReady	←	pse_dll_ready
	aLldpXdot3LocPSEAutoclassSupport	←	PSEAutoclassSupport
	aLldpXdot3LocAutoclassCompleted	←	PSEAutoclassCompleted
PD	aLldpXdot3LocPDRequestedPowerValue	←	PDRequestedPowerValue
	aLldpXdot3LocPSEAllocatedPowerValue	←	PSEAllocatedPowerValueEcho
	aLldpXdot3LocReady	←	pd_dll_ready
	aLldpXdot3LocAutoclassRequest	←	PDAutoclassRequest
oLldpXdot3RemSystemsGroup Object Class			
PSE	aLldpXdot3RemPDRequestedPowerValue	→	MirroredPDRequestedPowerValue
	aLldpXdot3RemPSEAllocatedPowerValue	→	MirroredPSEAllocatedPowerValueEcho
	~~aLldpXdot3RemPowerType Value[1]~~ ~~11~~ ~~01~~	 → →	~~pd_dll_power_type Value[1]~~ ~~01~~ ~~10~~
	aLldpXdot3RemPSEAutoclassSupport	→	MirroredPSEAutoclassSupport
	aLldpXdot3RemAutoclassCompleted	→	MirroredPSEAutoclassCompleted
PD	aLldpXdot3RemPSEAllocatedPowerValue	→	MirroredPSEAllocatedPowerValue
	aLldpXdot3RemPDRequestedPowerValue	→	MirroredPDRequestedPowerValueEcho
	~~aLldpXdot3RemPowerType Value[1]~~ ~~10~~ ~~00~~	 → →	~~pse_dll_power_type Value[1]~~ ~~01~~ ~~10~~
	aLldpXdot3RemAutoclassRequest	→	MirroredPDAutoclassRequest

~~[1]Other value combinations mapping from aLldpXdot3RemPowerType_mode(M) to pd_dll_power_type or pse_dll_power_type are not possible.~~

145.5.3.6 State diagrams

The general state change procedure for PSEs is shown in Figure 145–43.

Make the following changes in Figure 145-43:

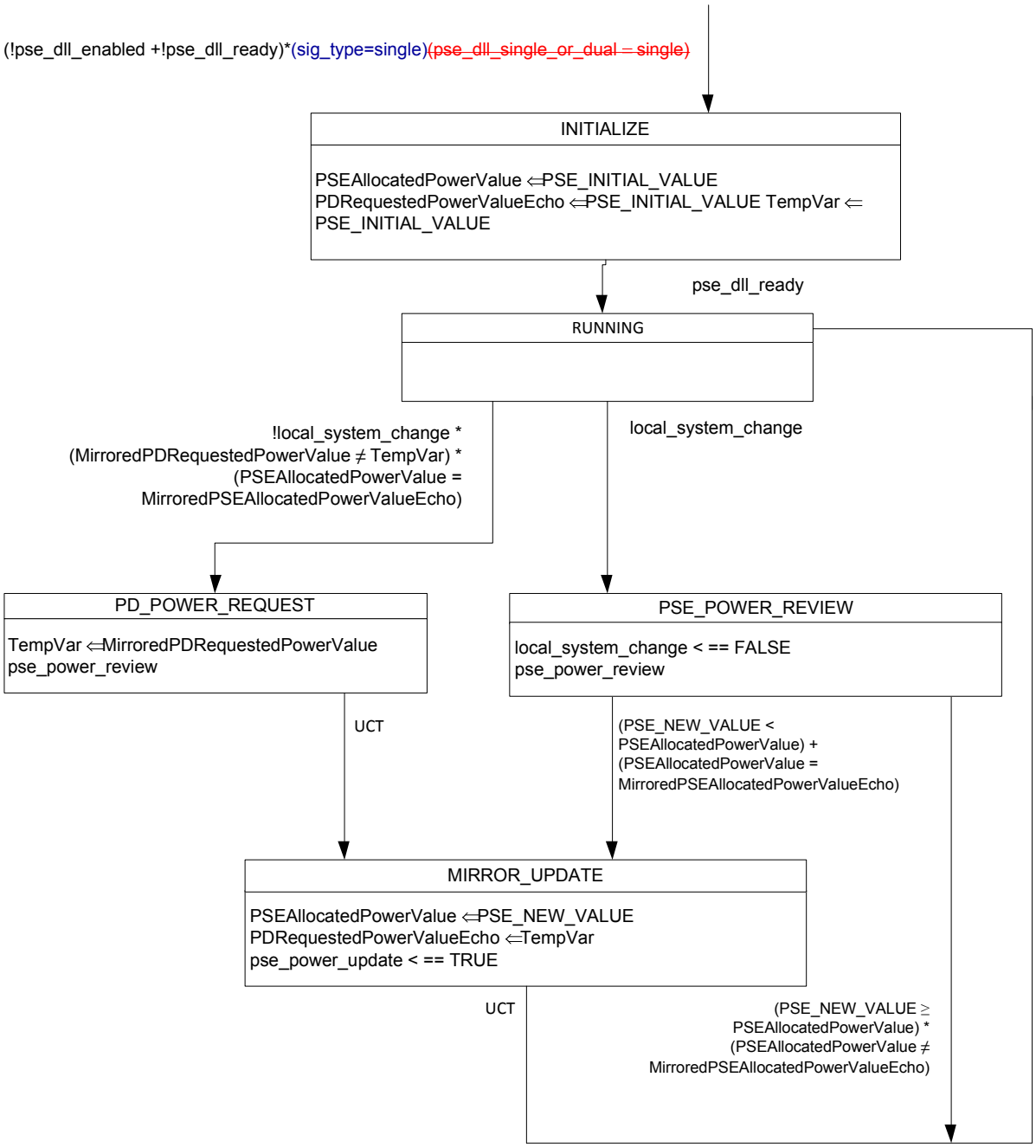

Figure 145–43—PSE power control state diagram

The general state change procedure for PDs is shown in Figure 145–44.

Make the following changes in Figure 145-44:

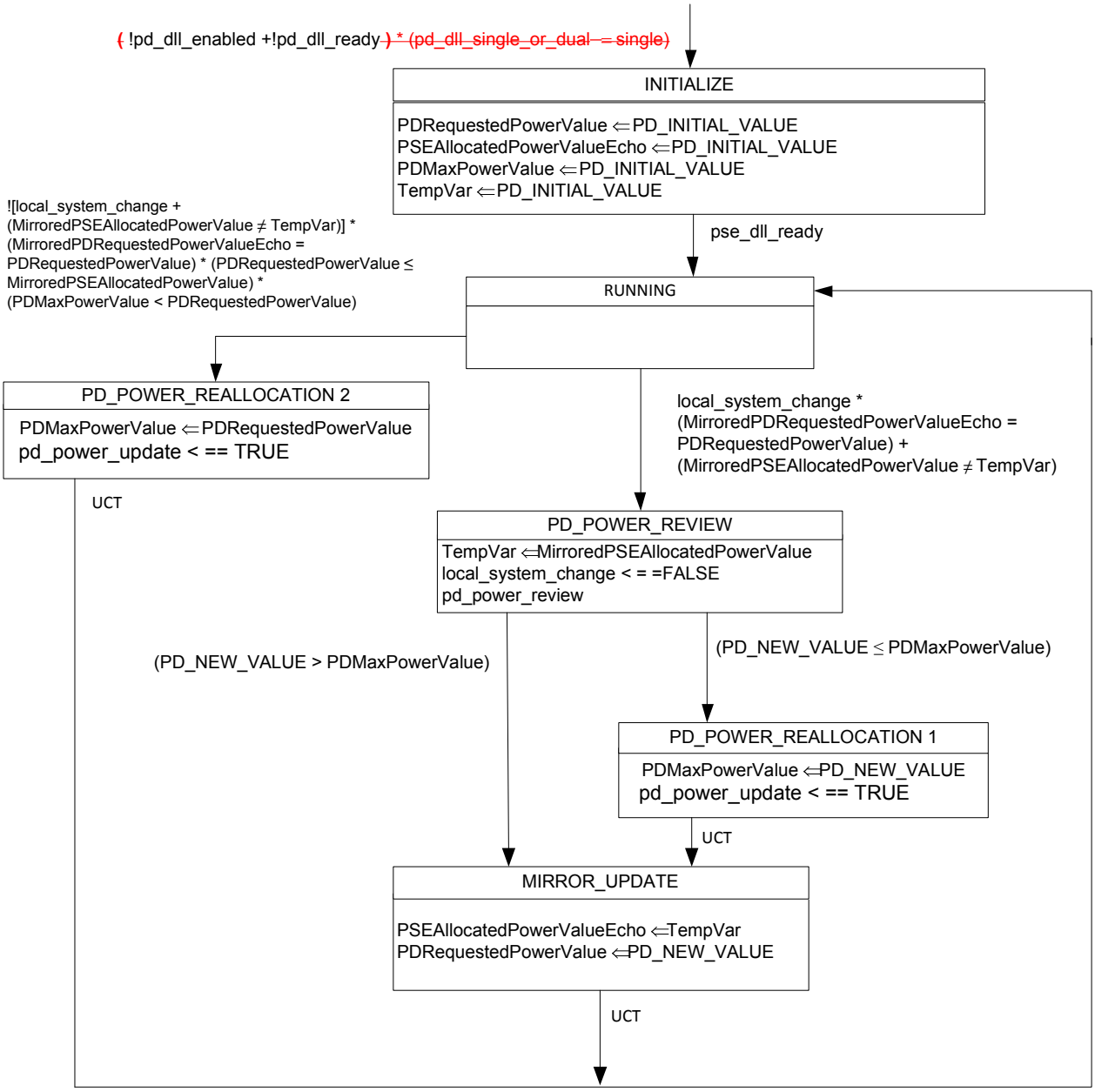

Figure 145–44—PD power control state diagram

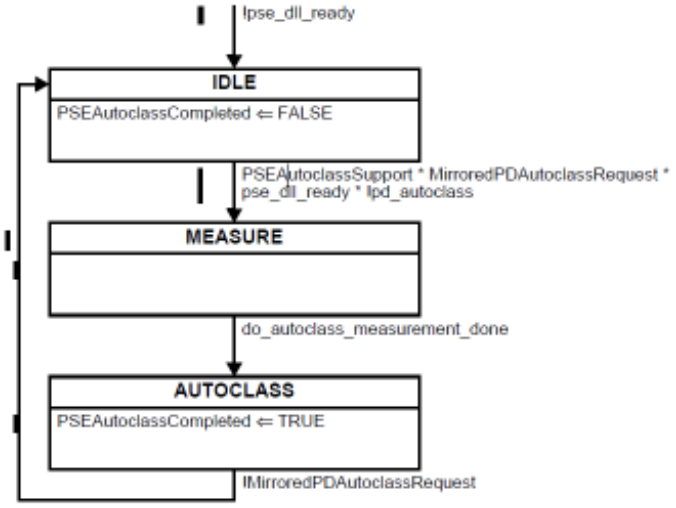

Figure 145–45—PSE DLL Autoclass control state diagram

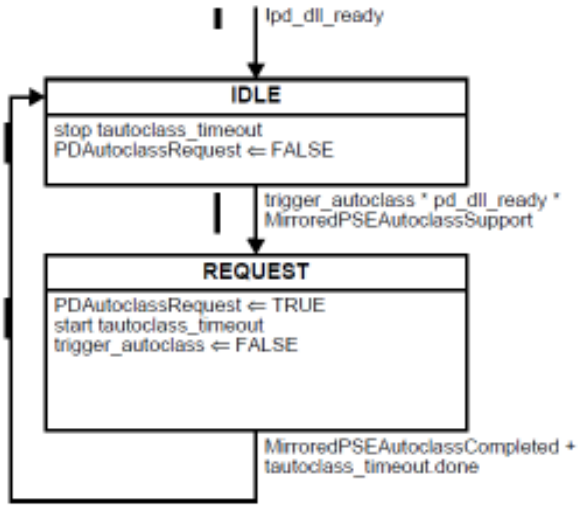

Figure 145–46—PD Autoclass control state diagram

145.5.3.7 Dual-signature system constants

Editing Instructions

1. *The DLL state machines for dual-signature PSE and PD where edited to have separate constants, variables and functions for each state machine.*
2. *PSE state machine variables and constants have "_Alt(X)" suffix and PD constants and variables have "_mode(X)" suffix. Editor to verify implementation of this rule.*
3. *Attributes names have been updated and are not contain "Alternative", "Mode" they are ended only with "A" or "B" to indicate ModeA or ModeB or AltA or ALTB. Editor to verify implementation for clause 145.3, 30, 79.*
4. *Editor to update subclause numbers.*
5. *Editor to implement yseboodt_04_0317.pdf if accepted (regarding the constants) and make the necessary changes for dual-signature DLL SM.*

145.5.3.7 Dual-signature ~~system~~ constants – PSE state diagram

Variable~~s PD_DLLMAX_VALUE_M), PD_INITIAL_VALUE, and~~ PSE_INITIAL_VALUE_Alt(X), ~~are~~is quantized to fit the available resolution. Additional information on power level~~s~~ for Class 5~~Classes 6 and 8~~ may be found in 145.3.8.2.1.

This is not part of the base line
The following items: PD_DLLMAX_VALUE_mode(X), PD_INITIAL_VALUE_mode(X) MirroredPSEAllocatedPowerValue_mode(X), PDMaxPowerValue_mode(X), PDRequestedPowerValue_mode(X), PSEAllocatedPowerValueEcho_mode(X) pd_dll_enabled pd_dll_ready pd_power_review_mode(X) were updated with _mode(X) and moved to dual-signature DLL PD state machine section.

~~PD_DLLMAX_VALUE_mode(M)~~

~~This value is derived from pd_max_power_(M) variable (145.3.3.9) described as follows:~~

~~pd_max_power~~	~~PD_DLLMAX_VALUE_mode(M)~~
~~1~~	~~39~~
~~2~~	~~65~~
~~3~~	~~130~~
~~4~~	~~255~~
~~5~~	~~355~~

~~PD_INITIAL_VALUE_mode(M)~~

~~This value is derived as follows from the pd_max_power_mode(M) variable (145.3.3.9) used in the PD state diagram (Figure 145-29):~~

~~pd_max_power_mode(M)~~	~~PD_INITIAL_VALUE_mode(M)~~
~~1~~	~~≤39~~
~~2~~	~~≤ 65~~
~~3~~	~~≤ 130~~
~~4~~	~~≤255~~
~~5~~	~~≤355~~

PSE_INITIAL_VALUE~~_mode(M)~~_Alt(X)

This value is derived as follows from pd_allocated_pwr_pri or pd_allocated_pwr_sec, as defined in 145.2.5.4, which is used in the state diagrams in 145.2.5.7:

pd_allocated_pwr_pri pd_allocated_pwr_sec	PSE_INITIAL_VALUE~~_mode(M)~~_Alt(X)
1	39
2	65
3	130
4	255
5	355

[single_or_dual is not used by the state machine]

~~single_or_dual~~

~~This variable indicates if the connected PD is a single-signature PD or a dual-signature PD.~~

~~Values: single: A single-signature PD configuration is connected to the PI. dual: A dual-signature PD~~

~~configuration is connected to the PI.~~

145.5.3.8 Dual-signature ~~system~~ Variables– PSE state diagram

The PSE power control state diagram (Figure 145-~~43~~47) ~~and PD power control state diagram (Figure 145-44)~~ use the following variables:

MirroredPDRequestedPowerValue_Alt(X)~~mode(M)~~

The copy of the PD Requested Power Value field for Alternative~~mode(M)~~ (X) in the Power Via MDI TLV that the PSE receives from the remote system in units of 0.1 W. This variable is mapped from the aLldpXdot3RemPDRequestedPowerValueA and aLldpXdot3RemPDRequestedPowerValueB attributes (30.12.3.1.18a and 30.12.3.1.18b).

When a PD mode is not active, the value is set to zero.

MirroredPDRequestedPowerValueEcho_Alt(X)~~mode(M)~~

The copy of the PD Requested Power Value filed for Alternative~~mode(M)~~ (X) in the Power Via MDI TLV that the PD receives from the remote system. This variable is mapped from the aLldpXdot3RemPDRequestedPowerValueA and aLldpXdot3RemPDRequestedPowerValueB attributes (30.12.3.1.18a and 30.12.3.1.18b).

Values: 0 through 499.

When a PD mode is not active, the value is set to zero.

~~MirroredPSEAllocatedPowerValue_mode(M)~~

~~The copy of the PSE Allocated Power Value field for mode)M) in the Power Via MDI TLV that the PD receives from the remote system in units of 0.1 W. This variable is mapped from the aLldpXdot3RemPSEAllocatedPowerValue attribute ().~~

~~Values: 0 through 499~~

~~When a PD mode is not active, the value is set to zero.~~

MirroredPSEAllocatedPowerValueEcho~~_mode(M)~~_Alt(X)

The copy of the PSE Allocated Power Value field for mode~~(M)~~(X) in the Power Via MDI TLV that the PSE receives from the remote system. This variable is mapped from the aLldpXdot3RemPSEAllocatedPowerValueA and aLldpXdot3RemPSEAllocatedPowerValueB attributes (30.12.3.1.18c and 30.12.3.1.18d).

Values: 0 through 499

When a PD mode is not active, the value is set to zero.

PDRequestedPowerValueEcho_Alt(X)~~mode(M)~~

This variable is updated by the PSE state diagram. This variable maps into the aLldpXdot3LocPDRequestedPowerValueA and aLldpXdot3LocPDRequestedPowerValueB attribute (30.12.2.1.~~17~~18a and 30.12.2.1.18b).

Values: 0 through 499

When a PD mode is not active, the value shall be set to zero.

~~PDMaxPowerValue_mode(M)~~

~~Integer that indicates the actual PD power value of the local system in units of 0.1 W. The actual PD power value for a PD is the maximum input average power (see 145.3.8.2) the PD ever draws under the current power allocation.~~

~~Values: 0 through 499~~

~~When a PD mode is not active, the value shall be set to zero.~~

~~PDRequestedPowerValue_mode(M)~~

~~Integer that indicates the actual PD power value of the local system in units of 0.1 W. The actual PD power value for a PD is the maximum input average power (see 145.3.8.2) the PD ever draws under the current power allocation.~~

~~Values: 0 through 499 When a PD mode is not active, the value shall be set to zero.~~

PSEAllocatedPowerValue~~_mode(M)~~_Alt(X)

Integer that indicates the PSE allocated power value in the PSE in units of 0.1 W. The value is the maximum input average power (see 145.3.8.2) the PD ever draws. This variable maps to the aLldpXdot3LocPSEAllocatedPowerValueA and aLldpXdot3LocPSEAllocatedPowerValueB attribute (**30.12.2.1.18c and 30.12.2.1.18d**).

Values: 0 through 499

When a PD mode is not active, the value shall be set to zero.

~~PSEAllocatedPowerValueEcho_mode(M)~~

~~This variable is updated by the PD state diagram. This variable maps into the~~

aLldpXdot3LocPSEAllocatedPowerValue attribute ().
Values: 0 through 499.
When a PD mode is not active, the value shall be set to zero.

TempVar (M) Alt(X)
A temporary variable used to store a Power Value in units of 0.1 W.
Values: 0 through 499.
When a PD mode is not active, the value shall be set to zero.

local_system_change Alt(X)
An implementation-specific control variable that indicates that the local system wants to change the allocated power value. In a PSE, this indicates it is going to change the power allocated to the PD over Alternative X. In a PD, this indicates it is going to request a new power allocation from the PSE.
Values:
FALSE: The local system does not wants to change the power allocation.
TRUE: The local system wants to change the power allocation.

pd_dll_enabled
A variable output by the PD state diagram (Figure 145-26) to indicate if the PD Data Link Layer classification mechanism is enabled.
Values:
FALSE: PD Data Link Layer classification is not enabled.
TRUE: PD Data Link Layer classification is enabled.

pd_dll_power_type
A Type 1 and Type 2 PSE state diagram control variable that indicates the Type of PD that is connected to the PSE as advertised through Data Link Layer classification. Type 3 and Type 4 PSE state diagrams do not use this variable.
Values:
1: PD is a Type 1 PD (default).
2: PD is a Type 2 PD.

pd_dll_ready
An implementation specific control variable that indicates that the PD has initialized Data Link Layer classification. This variable maps into the aLldpXdot3LocReady attribute (30.12.2.1.20).
Values:
FALSE: Data Link Layer classification has not completed initialization.
TRUE: Data Link Layer classification has completed initialization.

pse_dll_enabled
A variable output by the PSE state diagram (Figure 145-13) to indicate if the PSE Data Link Layer classification mechanism is enabled.
Values:
FALSE: PSE Data Link Layer classification is not enabled.
TRUE: PSE Data Link Layer classification is enabled.

pse_dll_power_type
A control variable output by the PD power control state diagram, defined in Figure 145-44, that indicates the PSE Type as 1 or 2, see 79.3.2.4.1.
Values:
1: The PSE is a Type 1 PSE, for a Type 1 PSE.
2: The PSE is a Type 2 PSE, for a Type 2, 3 and, 4 PSEs

pse_dll_ready_Alt(X)

An implementation-specific control variable that indicates that the PSE has initialized Data Link Layer classification over Alternative (X). This variable maps into the aLldpXdot3LocReady attribute (30.12.2.1.20).

Values:

FALSE: Data Link Layer classification has not completed initialization.

TRUE: Data Link Layer classification has completed initialization.

~~pse_power_type~~

~~A control variable that indicates to the PD the type of PSE by which it is being powered.~~

~~Values:~~

~~1: The PSE is a Type 1 PSE.~~

~~2: The PSE is a Type 2, Type 3, or Type 4 PSE.~~

~~pd_dll_single_or_dual~~

~~A control variable output by PD power control state diagram, defined in Figure 145-44, that indicates if the PD is a single-signature PD or a dual-signature PD. Type 3 and Type 4 PD state dia-grams do not use this variable.~~

~~Values:~~

~~single: A single-signature PD configuration is connected to the PI.~~

~~dual: A dual-signature PD configuration is connected to the PI.~~

sig_type

A variable generated from the do_cxn_chk function in Figure 145-13 which indicates if the PSE is connected to a single-signature PD or dual-signature PD.

Values:

Invalid: Neither single-signature PD nor dual-signature PD connection check signature has been found. This include an open circuit condition.

single: A single-signature PD configuration is connected to the PI.

dual: A dual-signature PD configuration is connected to the PI.

~~pse_dll_single_or_dual~~

~~A control variable output by PSE power control state diagram defined in Figure 145-43 (generated from the do_cxn_check function of the Type 3 and Type 4 PSE state diagram inFigure 145-13 which indicates if the PSE is connected to a single-signature PD or dual-signature PD.~~

~~Values:~~

~~invalid: Neither a single-signature PD nor a dual-signature PD connection check signa-ture has been found. This includes an open circuit condition.~~

~~Single: A single-signature PD configuration is connected to the PI.~~

~~dual: A dual-signature PD configuration is connected to the PI.~~

~~**145.5.3.9 Dual-signature system Functions**~~

145.5.3.9 Dual-signature Functions – PSE state diagram

pse_power_review_Alt(X)

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

PSE_NEW_VALUE_Alt(X):

The new maximum power value that the PSE expects the PD to draw in units of 0.1 W.

~~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 value. The function returns the following variables:~~

~~PD_NEW_VALUE:~~

~~The new maximum power value that the PD wants to draw in units of 0.1 W.~~

145.5.3.X1 Dual-signature constants – PD state diagram

Variables PD_DLLMAX_VALUE_mode(X) and PD_INITIAL_VALUE_mode(X), are quantized to fit the available resolution. Additional information on power level for Class 5may be found in 145.3.8.2.1.

PD_DLLMAX_VALUE_mode(X)

This value is derived from pd_max_power_mode(X) variable (145.3.3.9) described as follows:

pd_max_power_mode(X)	PD_DLLMAX_VALUE_mode(X)
1	39
2	65
3	130
4	255
5	355

PD_INITIAL_VALUE_mode(X)

This value is derived as follows from the pd_max_power_mode(X) variable (145.3.3.9) used in the PD state diagram (Figure 145-29):

pd_max_power_mode(X)	PD_INITIAL_VALUE_mode(X)
1	≤39
2	≤ 65
3	≤ 130
4	≤255
5	≤355

145.5.3.X2 Dual-signature Variables – PD state diagram

The PD power control state diagram (Figure 145-48) use the following variables:

MirroredPDRequestedPowerValueEcho_mode(X)

The copy of the PD Requested Power Value filed for mode(X) in the Power Via MDI TLV that the PD receives from the remote system. This variable is mapped from the aLldpXdot3RemPDRequestedPowerValueModeA and aLldpXdot3RemPDRequestedPowerValueModeB attributes (30.12.3.1.18a and 30.12.3.1.18b).

Values: 0 through 499.

When a PD mode is not active, the value is set to zero.

MirroredPSEAllocatedPowerValue_mode(X))

The copy of the PSE Allocated Power Value field for mode(X) in the Power Via MDI TLV that the PD receives from the remote system in units of 0.1 W. This variable is mapped from the aLldpXdot3RemPSEAllocatedPowerValueA and aLldpXdot3RemPSEAllocatedPowerValueB attributes (30.12.3.1.18c and 30.12.3.1.18d).

Values: 0 through 499

When a PD mode is not active, the value is set to zero.

PDMaxPowerValue_mode(X)

Integer that indicates the actual PD power value of the local system in units of 0.1 W. The actual PD power value for a PD is the maximum input average power (see 145.3.8.2) the PD ever draws under the current power allocation.

Values: 0 through 499

When a PD mode is not active, the value shall be set to zero.

PDRequestedPowerValue_mode(X)

Integer that indicates the actual PD power value of the local system in units of 0.1 W. The actual PD power value for a PD is the maximum input average power (see 145.3.8.2) the PD ever draws under the current power allocation.

Values: 0 through 499

When a PD mode is not active, the value shall be set to zero.

PSEAllocatedPowerValue_mode(X)

Integer that indicates the PSE allocated power value in the PSE in units of 0.1 W. The value is the maximum input average power (see 145.3.8.2) the PD ever draws. This variable maps to the aLldpXdot3LocPSEAllocatedPowerValueA and aLldpXdot3LocPSEAllocatedPowerValueB attribute (**30.12.2.1.18c and 30.12.2.1.18d**).

Values: 0 through 499

When a PD mode is not active, the value shall be set to zero.

PSEAllocatedPowerValueEcho_mode(X)

This variable is updated by the PD state diagram. This variable maps into the aLldpXdot3LocPSEAllocatedPowerValueA and aLldpXdot3LocPSEAllocatedPowerValueB attribute (**30.12.2.1.18c and 30.12.2.1.18d**).

Values: 0 through 499.

When a PD mode is not active, the value shall be set to zero.

TempVar_mode(X)

A temporary variable used to store a Power Value in units of 0.1 W.

Values: 0 through 499.

~~When a PD mode is not active, the value shall be set to zero.~~

local_system_change_mode(X)

An implementation-specific control variable that indicates that the local system wants to change the requested power value. In a PD, this indicates it is going to change the power requested by the PD over mode X.

Values:

FALSE: The local system does not want to change the requested power.

TRUE: The local system wants to change the requested power.

pd_dll_enabled_mode(X)

A variable output by the PD state diagram (Figure 145–26) to indicate if the PD Data Link Layer classification mechanism is enabled over mode (X).

Values:

FALSE: PD Data Link Layer classification is not enabled.

TRUE: PD Data Link Layer classification is enabled.

pd_dll_ready_mode(X)

An implementation-specific control variable that indicates that the PD has initialized Data Link Layer classification over mode (X). This variable maps into the aLldpXdot3LocReady attribute (30.12.2.1.20).

Values:

FALSE: Data Link Layer classification has not completed initialization.

TRUE: Data Link Layer classification has completed initialization.

145.5.3.X3 Dual-signature Functions – PD state diagram

pd_power_review_mode(X)

This function evaluates the power requirements of the PD based on local system changes and/or changes in the PSE allocated power value. The function returns the following variables:

PD_NEW_VALUE_mode(X):

The new maximum power value that the PD wants to draw in units of 0.1 W.

Make the following changes to Table 145-40:

This is not part of the base line

1. New variables where added to clause 145.5, clause 30 and clause 79 to support dual-signature DLL state machine and related TLVs per the following concept based on single-signature DLL state machine with the relevant changes for dual signature. The concept used for single signature is based on the following example:

State diagram variable e.g. PDRequestedPowerValueEcho from Figure 145-43 PSE DLL state diagram is shown in Table 145-39.
Table 145-39 shows that PDRequestedPowerValueEcho is mapped to aLldpXdot3LocPDRequestedPowerValue
PDRequestedPowerValueEcho is defined in the variable list of the state diagram.
aLldpXdot3LocPDRequestedPowerValue is defined in clause 30 and in clause 79.

2. In Table 145-40 the column **Attribute** doesn't have "mode" or "Alt" designation due to shared use in PSE and PD. See Lennart comment marked as mode_Alt_shared.

Table 145–40—Attribute to state diagram variable cross-reference

Entity	Attribute	Mapping	State diagram variable
oLldpXdot3LocSystemsGroup Object Class			
PSE	aLldpXdot3LocPDRequestedPowerValueA	<==	PDRequestedPowerValueEcho_~~mode~~ALT(~~M~~X=A)
	aLldpXdot3LocPDRequestedPowerValueB	<==	PDRequestedPowerValueEcho_ALT(X=B)
	aLldpXdot3LocPSEAllocatedPowerValueA	<==	PSEAllocatedPowerValue_~~mode(M)~~_Alt(X=A)
	aLldpXdot3LocPSEAllocatedPowerValueB	<==	PSEAllocatedPowerValue_Alt(X=B)
	aLldpXdot3LocReady	<==	pse_dll_ready
PD	aLldpXdot3LocPDRequestedPowerValueA	<==	PDRequestedPowerValue_mode(~~M~~X=A)
	aLldpXdot3LocPDRequestedPowerValueB		PDRequestedPowerValue_mode(X=B)
	aLldpXdot3LocPSEAllocatedPowerValueA	<==	PSEAllocatedPowerValueEcho_mode(~~M~~X=A)
	aLldpXdot3LocPSEAllocatedPowerValueB		PSEAllocatedPowerValueEcho_mode(X=B)
	aLldpXdot3LocReady	<==	pd_dll_ready
oLldpXdot3RemSystemsGroup Object Class			
PSE	aLldpXdot3RemPDRequestedPowerValueA	→	MirroredPDRequestedPowerValue_~~mode~~ALT(~~M~~X=A)
	aLldpXdot3RemPDRequestedPowerValueB		MirroredPDRequestedPowerValue_ALTe(X=A)
	aLldpXdot3RemPSEAllocatedPowerValueA	→	MirroredPSEAllocatedPowerValueEcho_~~mode(M)~~_Alt(X=A)
	aLldpXdot3RemPSEAllocatedPowerValueB		MirroredPSEAllocatedPowerValueEcho_Alt(X=B)
	~~aLldpXdot3RemPowerType Value[1]~~ ~~11~~ ~~01~~	 → →	~~pd_dll_power_type Value[1]~~ ~~01~~ ~~10~~
PD	aLldpXdot3RemPSEAllocatedPowerValueA	→	MirroredPSEAllocatedPowerValue_mode(X=A)
	aLldpXdot3RemPSEAllocatedPowerValueB		MirroredPSEAllocatedPowerValue_mode(X=B)
	aLldpXdot3RemPDRequestedPowerValueA	→	MirroredPDRequestedPowerValueEcho_mode(X=A)
	aLldpXdot3RemPDRequestedPowerValueB		MirroredPDRequestedPowerValueEcho_mode(X=B)
	~~aLldpXdot3RemPowerType Value[1]~~ ~~10~~ ~~00~~	 → →	~~pse_dll_power_type Value[1]~~ ~~01~~ ~~10~~

[1] ~~Other value combinations mapping from aLldpXdot3RemPowerType_mode(M) to pd_dll_power_type or pse_dll_power_type are not possible.~~

Update the following PSE state diagram Figure 145-47 per the following changes. In addition:
-Verify that all variable extensions are with "_Alt(X)" only.

145.5.3.10 Dual-signature State diagrams

The general state change procedure for PSEs is shown in Figure 145–47.

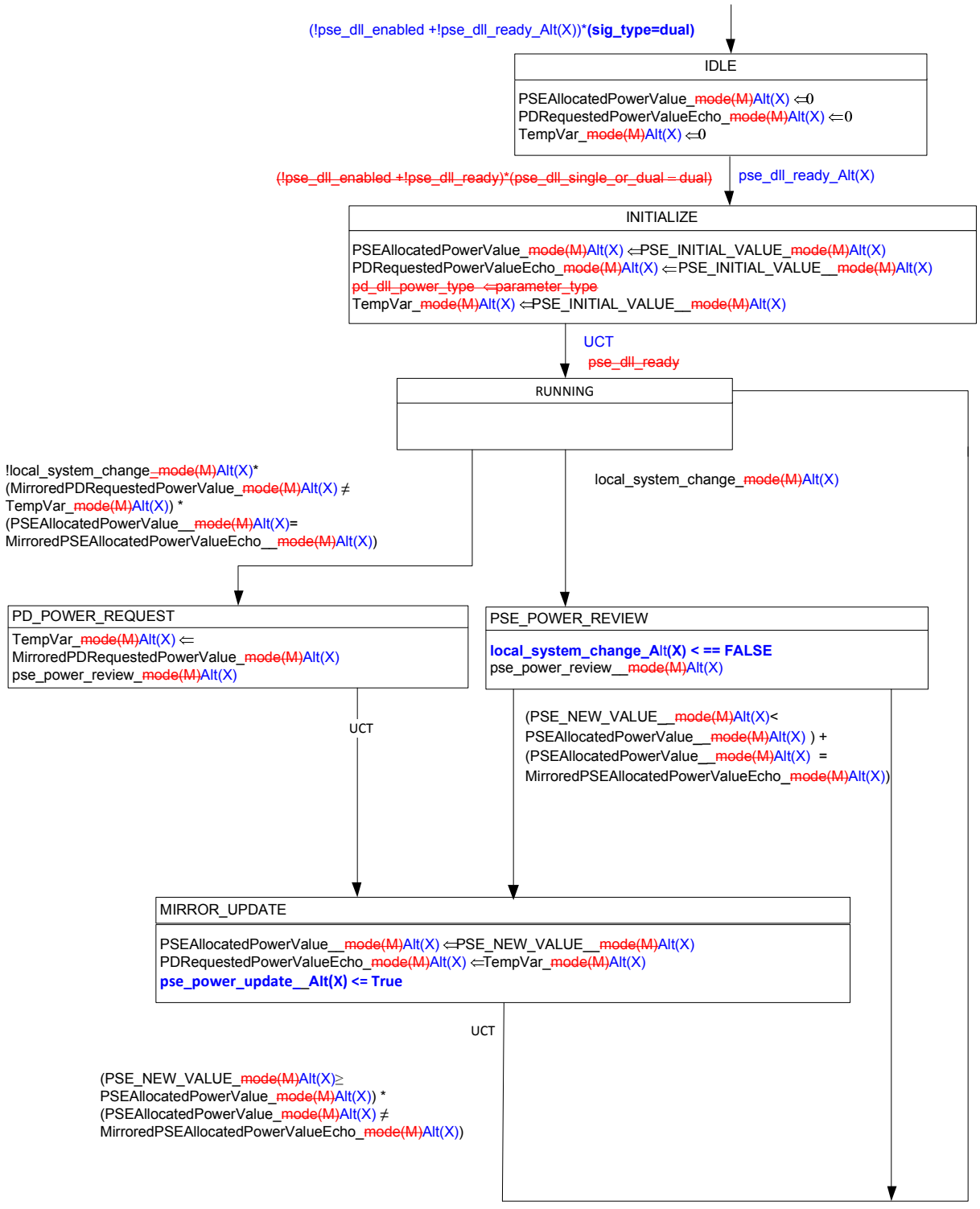

Figure 145–47—PSE power control state diagram Alternative (X) when connected to a dual-signature PD mode (X)

Update the following PSE state diagram Figure 145-48. In addition:
-Verify that all variable extensions are with "_mode(X)" only.

The general state change procedure for PDs is shown in Figure 145–48.

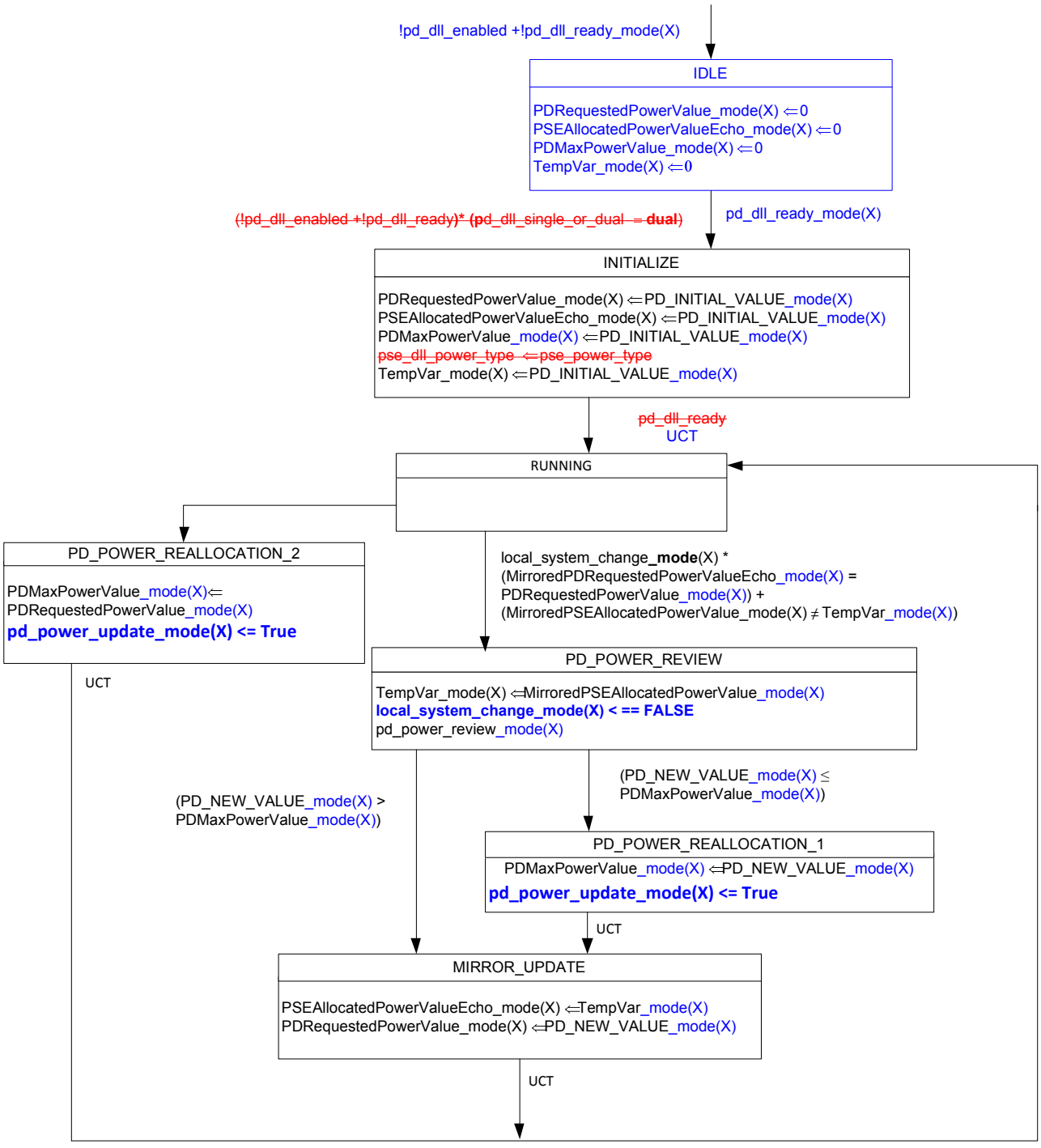

Figure 145–48—Dual-signature PD power control state diagram mode(X)

145.5.4 State change procedure across a link (single-signature)

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

The PD may request a new power value through the aLldpXdot3LocPDRequestedPowerValue (30.12.2.1.17) attribute in the oLldpXdot3LocSystemsGroup object class. The request appears to the PSE as a change to the aLldpXdot3RemPDRequestedPowerValue (30.12.3.1.17) attribute in the oLldpXdot3RemSystemsGroup object class.

The PSE responds to the PD's request through the aLldpXdot3LocPSEAllocatedPowerValue (30.12.2.1.18) attribute in the oLldpXdot3LocSystemsGroup object class. The PSE also copies the value of the aLldpXdot3RemPDRequestedPowerValue (30.12.3.1.17) in the oLldpXdot3RemSystemsGroup object class to the aLldpXdot3LocPDRequestedPowerValue (30.12.2.1.17) in the oLldpXdot3LocSystemsGroup object class. This appears to the PD as a change to the aLldpXdot3RemPSEAllocatedPowerValue (30.12.3.1.18) attribute in the oLldpXdot3RemSystemsGroup object class.

The PSE may allocate a new power value through the aLldpXdot3LocPSEAllocatedPowerValue (30.12.2.1.18) attribute in the oLldpXdot3LocSystemsGroup object class. The request appears to the PD as a change to the aLldpXdot3RemPSEAllocatedPowerValue (30.12.3.1.18) attribute in the oLldpXdot3RemSystemsGroup object class. The PD responds to a PSE's request through the aLldpXdot3LocPDRequestedPowerValue (30.12.2.1.17) attribute in the oLldpXdot3LocSystemsGroup object class. The PD also copies the value of the aLldpXdot3RemPSEAllocatedPowerValue (30.12.3.1.18) attribute in the oLldpXdot3RemSystemsGroup object class to the aLldpXdot3LocPSEAllocatedPowerValue (30.12.2.1.18) attribute in the oLldpXdot3LocSystemsGroup object class. This appears to the PSE as a change to the aLldpXdot3RemPDRequestedPowerValue (30.12.3.1.17) attribute in the oLldpXdot3RemSystemsGroup object class.

The state diagrams describe the behavior above.

145.5.4.1 PSE state change procedure across a link (single-signature)

A PSE is considered to be in sync with the PD when the value of PSEAllocatedPowerValue matches the value of MirroredPSEAllocatedPowerValueEcho. When the PSE is not in sync with the PD, the PSE is allowed to change its power allocation.

During normal operation, the PSE 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, where a new power allocation value, PSE_NEW_VALUE, is computed. If the PSE is in sync with the PD or if PSE_NEW_VALUE is smaller than PSEAllocatedPowerValue, it enters the MIRROR_UPDATE state where PSE_NEW_VALUE is assigned to PSEAllocatedPowerValue. It also updates PDRequestedPowerValueEcho and returns to the RUNNING state.

If the PSE's previously stored MirroredPDRequestedPowerValue changes, a request by the PD to change its power allocation is recognized. It entertains this request only when it is in sync with the PD. The PSE examines the request by entering the PD_POWER_REQUEST state. A new power allocation value, PSE_NEW_VALUE, is computed. It then enters the MIRROR_UPDATE state where PSE_NEW_VALUE is assigned to PSEAllocatedPowerValue. It also updates PDRequestedPowerValueEcho and returns to the RUNNING state.

145.5.4.2 PD state change procedure across a link (single-signature)

A PD is considered to be in sync with the PSE when the value of PDRequestedPowerValue matches the value of MirroredPDRequestedPowerValueEcho. The PD is not allowed to change its maximum power draw or the requested power value when it is not in sync with the PSE.

During normal operation, the PD is in the RUNNING state. If the PD's previously stored MirroredPSEAllocatedPowerValue is changed or local_system_change is asserted by the PD so as to change its power allocation, the PD enters the PD_POWER_REVIEW state. In this state, the PD evaluates the change and generates an updated power value called PD_NEW_VALUE. If PD_NEW_VALUE is less than PDMaxPowerValue, it updates PDMaxPowerValue in the PD_POWER_REALLOCATION1 state. The PD then finally enters the MIRROR_UPDATE state where PD_NEW_VALUE is assigned to PDRequestedPowerValue. It also updates PSEAllocatedPowerValueEcho and returns to the RUNNING state.

In the above flow, if PD_NEW_VALUE is greater than PDMaxPowerValue, the PD waits until it is in sync with the PSE and the PSE grants the higher power value. When this condition arises, the PD enters the PD POWER_REALLOCATION2 state. In this state, the PD assigns PDMaxPowerValue to PDRequestedPowerValue and returns to the RUNNING state.

-Make the following changes:

-In addition verify the following:

1. Replace whenever applicable from index "M" to index "X".
2. PSE State machine variable e.g. PSEAllocatedPowerValue_Alt(X) will have only _Alt(X) extension and not _mode(X) extension.
3. PD State machine variable e.g. PDMaxPowerValue_mode(X), will have only _mode(X) extension and not _Alt(X) extension or anything else.
4. Attributes e.g. aLldpXdot3LocPDRequestedPowerValueX will appear without the "Mode" or "mode" or "Alt" or "Alternative" extensions e.g. aLldpXdot3LocPDRequestedPowerValueA or aLldpXdot3LocPDRequestedPowerValueB etc.

145.5.5 State change procedure across a link (dual-signature)

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

The PD may request a new power value through the aLldpXdot3LocPDRequestedPowerValueA or aLldpXdot3LocPDRequestedPowerValueB (**30.12.2.1.18a and 30.12.2.1.18b**) attribute in the oLldpXdot3LocSystemsGroup object class. The request appears to the PSE as a change to the aLldpXdot3RemPDRequestedPowerValueA and aLldpXdot3RemPDRequestedPowerValueB (30.12.3.1.18a and 30.12.3.1.18b) attribute in the oLldpXdot3RemSystemsGroup object class.

The PSE responds to the PD's request through the aLldpXdot3LocPSEAllocatedPowerValueA and aLldpXdot3LocPSEAllocatedPowerValueB (**30.12.2.1.18c and 30.12.2.1.18d**) attribute in the oLldpXdot3LocSystemsGroup object class. The PSE also copies the value of the aLldpXdot3RemPDRequestedPowerValueA and aLldpXdot3RemPDRequestedPowerValueB (30.12.3.1.18a and 30.12.3.1.18b) in the oLldpXdot3RemSystemsGroup object class to the aLldpXdot3LocPDRequestedPowerValueA and aLldpXdot3LocPDRequestedPowerValueB (**30.12.2.1.Z1 and 30.12.2.1.Z2**) in the oLldpXdot3LocSystemsGroup object class. This appears to the PD as a change to the aLldpXdot3RemPSEAllocatedPowerValueA and aLldpXdot3RemPSEAllocatedPowerValueB (30.12.3.1.18c and 30.12.3.1.18d) attribute in the oLldpXdot3RemSystemsGroup object class.

The PSE may allocate a new power value through the aLldpXdot3LocPSEAllocatedPowerValueA and aLldpXdot3LocPSEAllocatedPowerValueB (**30.12.2.1.18c and 30.12.2.1.18d**) attribute in the oLldpXdot3LocSystemsGroup object class. The request appears to the PD as a change to the aLldpXdot3RemPSEAllocatedPowerValueA and aLldpXdot3RemPSEAllocatedPowerValueB (30.12.3.1.18c and 30.12.3.1.18d) attribute in the oLldpXdot3RemSystemsGroup object class. The PD responds to a PSE's request through the aLldpXdot3LocPDRequestedPowerValueA and aLldpXdot3LocPDRequestedPowerValueB (**30.12.2.1.18a and 30.12.2.1.18b**) attribute in the oLldpXdot3LocSystemsGroup object class. The PD also copies the value of the aLldpXdot3RemPSEAllocatedPowerValueA and aLldpXdot3RemPSEAllocatedPowerValueB (30.12.3.1.18c and 30.12.3.1.18d) attribute in the oLldpXdot3RemSystemsGroup object class to the aLldpXdot3LocPSEAllocatedPowerValueA and aLldpXdot3LocPSEAllocatedPowerValueB (**30.12.2.1.18c and 30.12.2.1.18d**) attribute in the oLldpXdot3LocSystemsGroup object class. This appears to the PSE as a change to the aLldpXdot3RemPDRequestedPowerValueA and aLldpXdot3RemPDRequestedPowerValueB (30.12.3.1.18a and 30.12.3.1.18b) attribute in the oLldpXdot3RemSystemsGroup object class.
The state diagrams describe the behavior above.

145.5.5.1 PSE state change procedure across a link (dual-signature)

A PSE is considered to be in sync with the PD when the value of PSEAllocatedPowerValue~~_mode(M)~~_Alt(X) matches the value of MirroredPSEAllocatedPowerValueEcho~~_mode(M)~~_Alt(X). When the PSE is not in sync with the PD, the PSE is allowed to change its power allocation.

During normal operation, the PSE is in the RUNNING state. If the PSE wants to initiate a change in the PD allocation, the local_system_change_Alt(X) ~~_mode(M)~~ is asserted and the PSE enters the PSE_POWER_REVIEW state, where a new power allocation value, PSE_NEW_VALUE_Alt(X)~~_mode(M)~~, is computed. If the PSE is in sync with the PD or if PSE_NEW_VALUE~~_mode(M)~~_Alt(X) is smaller than PSEAllocatedPowerValue~~_mode(M)~~_Alt(X), it enters the MIRROR_UPDATE state where PSE_NEW_VALUE~~_mode(M)~~_Alt(X) is assigned to PSEAllocatedPowerValue~~_mode(M)~~_Alt(X). It also updates PDRequestedPowerValueEcho_Alt(X)~~_mode(M)~~ and returns to the RUNNING state.

If the PSE's previously stored MirroredPDRequestedPowerValue_Alt(X) ~~_mode(M)~~ changes, a request by the PD to change its power allocation is recognized. It entertains this request only when it is in sync with the PD. The PSE examines the request by entering the PD_POWER_REQUEST state. A new power allocation value, PSE_NEW_VALUE~~_mode(M)~~_Alt(X), is computed. It then enters the MIRROR_UPDATE state where PSE_NEW_VALUE~~_mode(M)~~_Alt(X) is assigned to PSEAllocatedPowerValue~~_mode(M)~~_Alt(X). It also updates PDRequestedPowerValueEcho_Alt(X)~~_mode(M)~~ and returns to the RUNNING state.

~~145.5.4.4~~ 145.5.5.2 PD state change procedure across a link (dual-signature)

A PD is considered to be in sync with the PSE when the value of PDRequestedPowerValue_mode~~(M)~~(X) matches the value of MirroredPDRequestedPowerValueEcho_mode~~(M)~~(X). The PD is not allowed to change its maximum power draw or the requested power value when it is not in sync with the PSE.

During normal operation, the PD is in the RUNNING state. If the PD's previously stored MirroredPSEAllocatedPowerValue_mode(M) is changed or local_system_change_mode(~~M~~X) is asserted by the PD so as to change its power allocation, the PD enters the PD_POWER_REVIEW state. In this state, the PD evaluates the change and generates an updated power value called PD_NEW_VALUE_mode~~(M)~~(X). If PD_NEW_VALUE_mode~~(M)~~(X) is less than PDMaxPowerValue_mode~~(M)~~(X), it updates PDMaxPowerValue_mode~~(M)~~(X) in the PD_POWER_REALLOCATION1 state. The PD finally enters the MIRROR_UPDATE state where PD_NEW_VALUE_mode~~(M)~~(X) is assigned to PDRequestedPowerValue_mode~~(M)~~(X). It also updates PSEAllocatedPowerValueEcho_mode(~~M~~X) and returns to the RUNNING state.

In the above flow, if PD_NEW_VALUE_mode~~(M)~~(X) is greater than PDMaxPowerValue_mode~~(M)~~(X), the PD waits until it is in sync with the PSE and the PSE grants the higher power value. When this condition arises, the PD enters the PD_POWER REALLOCATION_2 state. In this state, the PD assigns PDMaxPowerValue_mode~~(M)~~(X) to PDRequestedPowerValue_mode~~(M)~~(X) and returns to the RUNNING state.

~~145.5.5~~ 145.5.6 Autoclass

A PSE can indicate it supports DLL Autoclass by means of the……..

Make the following changes to clause 79:

Table 79–9—IEEE 802.3 Organizationally Specific TLV/LLDP Local System Group managed object class cross references

TLV name	TLV variable	LLDP Local System Group managed object class attribute
Power via MDI	PD requested power value mode A~~(A)~~	aLldpXdot3LocPDRequestedPowerValueA~~ModeA~~
	PD requested power value mode B~~(B)~~	aLldpXdot3LocPDRequestedPowerValueB~~ModeB~~
	PSE allocated power value Alternative A	aLldpXdot3LocPSEAllocatedPowerValueA~~AlternativeA~~
	PSE allocated power value ~~Alternative A~~Alternative B	aLldpXdot3LocPSEAllocatedPowerValueB~~AlternativeB~~

Table 79–10—IEEE 802.3 Organizationally Specific TLV/LLDP Remote System Group managed object class cross references

TLV name	TLV variable	LLDP Remote System Group managed object class attribute
Power via MDI	PD requested power value mode A	aLldpXdot3RemPDRequestedPowerValueA~~ModeA~~
	PD requested power value mode B	aLldpXdot3RemPDRequestedPowerValueB~~ModeB~~
	PSE allocated power value Alternative A	aLldpXdot3RemPSEAllocatedPowerValueA~~AlternativeA~~
	PSE allocated power value ~~Alternative A~~Alternative B	aLldpXdot3RemPSEAllocatedPowerValueB~~AlternativeB~~

Add the following definitions to clause 30:

30.12.2.1.18a aLldpXdot3LocPDRequestedPowerValueA~~ModeA~~

ATTRIBUTE
APPROPRIATE SYNTAX:
INTEGER
BEHAVIOUR DEFINED AS:
A GET attribute that returns the PD requested power value for the Mode A pairset in units of 0.1 W.~~, as defined in Equation (79–1), where aLldpXdot3LocPDRequestedPowerValueModeA is *X*).~~ For a PD, it is the power value that the PD has currently requested from the remote system for the Mode A pairset. For a PSE, it is the power value for the ~~Mode~~ Alternative A pairset that the PSE mirrors back to the remote system.;

30.12.2.1.18b aLldpXdot3LocPDRequestedPowerValueB~~ModeB~~

ATTRIBUTE
APPROPRIATE SYNTAX:
INTEGER
BEHAVIOUR DEFINED AS:
A GET attribute that returns the PD requested power value for the Mode B pairset in units of 0.1 W.~~, as defined in Equation (79–1), where aLldpXdot3LocPDRequestedPowerValueModeB is *X*).~~ For a PD, it is the power value that the PD has currently requested from the remote system for the Mode B pairset. For a PSE, it is the power value for the Alternative~~Mode~~ B pairset that the PSE mirrors back to the remote system.;

30.12.2.1.18c aLldpXdot3LocPSEAllocatedPowerValueA

ATTRIBUTE
APPROPRIATE SYNTAX:
INTEGER
BEHAVIOUR DEFINED AS:
A GET attribute that returns the PSE allocated power value for the Alternative A pairset in units of 0.1 W.~~, as defined in Equation (79–2), where aLldpXdot3LocPSEAllocatedPowerValueAlternativeA is *X*).~~ For a PSE, it is the power value for the Alternative A pairset that the PSE has currently allocated to the remote system. For a PD, it is the power value for the ~~Alternative~~ mode A pairset that the PD mirrors back to the remote system.;

30.12.2.1.18d aLldpXdot3LocPSEAllocatedPowerValueB~~AlternativeB~~

ATTRIBUTE

APPROPRIATE SYNTAX:

INTEGER

BEHAVIOUR DEFINED AS:

A GET attribute that returns the PSE allocated power value for the Alternative B pairset in units of 0.1 W~~, as defined in Equation (79–2), where aLldpXdot3LocPSEAllocatedPowerValueAlternativeB is *X*).~~ For a PSE, it is the power value for the Alternative B pairset that the PSE has currently allocated to the remote system. For a PD, it is the power value for the ~~Alternative~~ mode B pairset that the PD mirrors back to the remote system.;

30.12.3.1.18a aLldpXdot3RemPDRequestedPowerValueA~~ModeA~~

ATTRIBUTE

APPROPRIATE SYNTAX:

INTEGER

BEHAVIOUR DEFINED AS:

A GET attribute that returns the PD requested power value for the Mode A pairset that was used by the remote system to compute the power value that is ~~has~~ currently allocated to the PD. For a PSE, it is the PD requested power value for the ~~Mode~~ Alternative A pairset received from the remote system. The definition and encoding of PD requested power value for the Mode A pairset is the same as described in aLldpXdot3LocPDRequestedPowerValueA~~ModeA~~ (30.12.2.1.18a).;

30.12.3.1.18b aLldpXdot3RemPDRequestedPowerValueB~~ModeB~~

ATTRIBUTE

APPROPRIATE SYNTAX:

INTEGER

BEHAVIOUR DEFINED AS:

A GET attribute that returns the PD requested power value for the Mode B pairset that was used by the remote system to compute the power value that is ~~has~~ currently allocated to the PD. For a PSE, it is the PD requested power value for the ~~Mode~~ Alternative B pairset received from the remote system. The definition and encoding of PD requested power value for the Mode B pairset is the same as described in aLldpXdot3LocPDRequestedPowerValueB~~ModeB~~ (30.12.2.1.18b).;

30.12.3.1.18c aLldpXdot3RemPSEAllocatedPowerValueA~~AlternativeA~~

ATTRIBUTE

APPROPRIATE SYNTAX:

INTEGER

BEHAVIOUR DEFINED AS:

A GET attribute that returns the PSE allocated power value for the Alternative A pairset received from the remote system. For a PSE, it is the PSE allocated power value for the Alternative A pairset that was used by the remote system to compute the power value that it has currently requested from the PSE. For a PD, it is the PSE allocated power value for the ~~Alternative~~ mode A pairset received from the remote system. The definition and encoding of PSE allocated power value for the Alternative A pairset is the same as described in aLldpXdot3LocPSEAllocatedPowerValueA~~AlternativeA~~ (30.12.2.1.18c).;

30.12.3.1.18d aLldpXdot3RemPSEAllocatedPowerValueB~~AlternativeB~~

ATTRIBUTE

APPROPRIATE SYNTAX:

INTEGER

BEHAVIOUR DEFINED AS:

A GET attribute that returns the PSE allocated power value for the Alternative B pairset received from the remote system. For a PSE, it is the PSE allocated power value for the Alternative B pairset that was used by the remote system to compute the power value that it has currently requested from the PSE. For a PD, it is the PSE allocated power value for the mode~~Alternative~~ B pairset received from the remote system. The definition and encoding of PSE allocated power value for the Alternative B pairset is the same as described in aLldpXdot3LocPSEAllocatedPowerValueB~~AlternativeB~~ (30.12.2.1.18d).;

30.12.2.1.18g aLldpXdot3LocPowerClassx~~Mode~~A

ATTRIBUTE

APPROPRIATE SYNTAX:

An ENUMERATED VALUE that has one of the following entries:

pClassPSE PSE

pClassPD PD

BEHAVIOUR DEFINED AS:

A read-only value that identifies the port Class of the given port associated with the local system over Alternative A for a PSE or over mode A for a PD.;

30.12.2.1.18h aLldpXdot3LocPowerClassx~~Mode~~B

ATTRIBUTE

APPROPRIATE SYNTAX:

An ENUMERATED VALUE that has one of the following entries:

pClassPSE PSE

pClassPD PD

BEHAVIOUR DEFINED AS:

A read-only value that identifies the port Class of the given port associated with the local system over Alternative B for a PSE or over mode B for a PD.;

30.12.3.1.18g aLldpXdot3RemPowerClassx~~Mode~~A

ATTRIBUTE

APPROPRIATE SYNTAX:

An ENUMERATED VALUE that has one of the following entries:

pClassPSE PSE

pClassPD PD

BEHAVIOUR DEFINED AS:

A read-only value that identifies the port Class of the given port associated with the local system over Alternative B for a PSE or over mode B for a PD.;

30.12.3.1.18h aLldpXdot3RemPowerClassx~~Mode~~B

ATTRIBUTE

APPROPRIATE SYNTAX:

An ENUMERATED VALUE that has one of the following entries:

pClassPSE PSE

pClassPD PD

BEHAVIOUR DEFINED AS:

A read-only value that identifies the port Class of the given port associated with the local system over Alternative B for a PSE or over mode B for a PD.;

Add the following lines to Table 30-7

aLldpXdot3RemPDRequestedPowerValueA, ATTRIBUTE, GET, column= LLDP Power via MDI Remote Package (conditional)

aLldpXdot3RemPDRequestedPowerValueB, ATTRIBUTE, GET, column= LLDP Power via MDI Remote Package (conditional)

aLldpXdot3RemPSEAllocatedPowerValueA, ATTRIBUTE, GET, column= LLDP Power via MDI Remote Package (conditional)

aLldpXdot3RemPSEAllocatedPowerValueB , ATTRIBUTE, GET, column= LLDP Power via MDI Remote Package (conditional)

Change the following in Table 30-7

aLldpXdot3LocPSEAllocatedPowerValueA~~Mode~~A, ATTRIBUTE, GET, column= LLDP Power via MDI Remote Package (conditional)

aLldpXdot3LocPSEAllocatedPowerValueB~~Mode~~B, ATTRIBUTE, GET, column= LLDP Power via MDI Remote Package (conditional)

aLldpXdot3LocPDRequestedPowerValueA~~Mode~~A, ATTRIBUTE, GET, column= LLDP Power via MDI Remote Package (conditional)

aLldpXdot3LocPDRequestedPowerValueB~~Mode~~B, ATTRIBUTE, GET, column= LLDP Power via MDI Remote Package (conditional)

End of Proposed Baseline