802.3at Draft PICS
(ver. 0.3 – 13 May 13, 2008)

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Editor's Notes

- Every effort has been made to ensure that all the original PICS were carried forward while updating references. Original PICS where the reference was removed has been removed from the PICS. At the end of the document is a list of the PICS that were removed and the reasoning for removal.

- The notes field in the tables below is included for reviewing and cross-referencing with the previous standard and will not be include in draft standard.

- Can PDs and PSEs use the same item descriptor, i.e. DLLC? If this is not the case the tables below need to be updated.

- Areas highlighted in yellow are areas that should be paid special attention. In some cases it is not clear to me how to code the "Status."

33.9.2.3 PD Major capabilities/options

(Items to be updated or inserted in the existing table)

Item	Feature	Subclause	Value/Comment	Status	Support	Notes
*PDT2	Type 2 PD implementation	33.3.2	PD is Type 2.	O	Yes [ ] No [ ]	**Insert in existing table** Updated per comment 437
*PDCL	PD Classification	33.3.5	PD supports classification.	PDT2:M	Yes [ ] No [ ]	Carried forward from "af": **Updated** Updated per **comment 437** Subclause and Status
*PDCL2	Implementation supports 2-Event Physical Layer Classification.	33.3.5	PD supports 2-Event Physical Layer classification.	PDCL:M	Yes [ ] No [ ]	**Insert in existing table**
*DLLC	Implementation supports Data Link Layer classification.	33.7	PD supports Data Link Layer classification.	O	Yes [ ] No [ ]	**Insert in existing table**

33.9.2.4 PSE Major capabilities/options

(Items to be updated or inserted in the existing table)

Item	Feature	Subclause	Value/Comment	Status	Support	Notes
*PSET1	Type 1 PSE implementation	33.1.4	Optional	O	Yes [ ] No [ ]	**Insert in existing table**
*PSET2	Type 2 PSE implementation	33.1.4	Optional	O	Yes [ ] No [ ]	**Insert in existing table**
*CL	Implementations supports classification	33.2.8	Optional	O/1	Yes [ ] No [ ]	Carried forward from "af": **Updated** Subclause and Status
*DLLC	Implementation supports Data Link Layer classification.	33.7	PSE supports Data Link Layer classification.	O	Yes [ ] No [ ]	**Insert in existing table**
*1EPLC	Implementation supports 1-Event Physical Layer Classification.	33.2.8.1	Optional	O	Yes [ ] No [ ]	**Insert in existing table**
*2EPLC	Implementation supports 2-Event Physical Layer Classification.	33.2.8.2	Optional	O	Yes [ ] No [ ]	**Insert in existing table**
*MIDA	Alternative A Midspan PSE	33.2.2	Midspan PSE implements Alternative A	MID:O:2	Yes [ ] No [ ]	**Insert in existing table**

33.9.3.1 Common device features

Item	Feature	Subclause	Value/Comment	Status	Support	Notes
COM1	Compatibility Considerations.	33.1.2	PDs and PSEs compatible at their PIs.	M	Yes [ ]	Carried forward from "af": no change
COM2	Type 2 operation cabling	33.1.4.1	Category 5e components (cables, cords, and connectors)	M	Yes [ ]	New

33.9.3.2 Power sourcing equipment

Item	Feature	Subclause	Value/Comment	Status	Support	Notes
PSE1	PSE Location	33.2.1	Requirements apply equally to Endpoint and Midspan PSE unless otherwise stated	M	Yes [ ]	Carried forward from "af": no change
PSE2	Alternative A and Alternative B	33.2.3	Implement either Alternative A or Alternative B or both but not operate on same link segment simultaneously.	M	Yes [ ] N/A [ ]	Carried forward from "af": Was PSE3 Changed status from "END:M" to "M" since Midspans now support A & B Updated Value/Comment Updated Subclause reference.
PSE3	PSE behavior	33.2.4	In accordance with state diagrams shown in Figure 33–9, Figure 33–10 and Figure 33–11.	M	Yes [ ]	Carried forward from "af": Was PSE 4 Updated Subclause reference Update Value/Comment
PSE4	Detection, classification and turn on timing.	33.2.4.1	In accordance with Table 33–4, Table 33–8 and Table 33–9.	M	Yes [ ]	Carried forward from "af": Was PSE5 Updated Subclause reference Updated Value/Comment
PSE5	Turn on power.	33.2.4.1	After valid detection in less than Tpon.	M	Yes [ ]	Carried forward from "af": Was PSE6 Updated Subclause reference
PSE6	Not apply power within Tpon.	33.2.4.1	Must initiate and successfully complete a new detection cycle before applying power.	M	Yes [ ]	Carried forward from "af": Was PSE7 Updated Subclause reference
PSE7	Alternative B backoff cycle.	33.2.4.1	Must wait no less that T_{dbo} as specified in Table 33–9 before attempting another detection.	M	Yes [ ]	Carried forward from "af": Was PSE8 Updated Subclause reference Updated Value/Comment
PSE8	Backoff voltage.	33.2.4.1	Not greater than 2.8Vdc.	M	Yes [ ]	Carried forward from "af": Was PSE9 Updated Subclause reference
PSE9	PSE variable definition permutations.	33.2.4.4	Must meet at least one definition described in Table 33–3.	M	Yes [ ]	New
PSE10	Applying power.	33.2.5	Not until a PD requesting power has been successfully detected.	M	Yes []	Carried forward from "af": Updated Subclause reference
PSE11	Power pairs.	33.2.5	Power must be supplied on the same pairs as those used for detection.	M	Yes [ ]	Carried forward from "af": Updated Subclause reference
PSE12	Detecting PDs.	33.2.6	Performed via the PSE PI.	M	Yes [ ]	Carried forward from "af": Updated Subclause reference
PSE13	Open circuit voltage.	33.2.6	In accordance with item 1 in Table 33–4.	M	Yes [ ]	Carried forward from "af": Updated Subclause reference Updated Value/Comment
PSE14	Short circuit current.	33.2.6	In accordance with item 2 in Table 33–4.	M	Yes [ ]	Carried forward from "af": Updated Subclause reference

						Updated Value/Comment
PSE15	Backdriven current.	33.2.6	Not be damaged by up to 5mA over the range of Vport.	M	Yes [ ]	Carried forward from "af": Updated Subclause reference
PSE16	Output capacitance	33.2.6	In accordance with item 23 in Table 33–9.	M	Yes [ ]	Carried forward from "af": Updated Subclause reference Updated Value/Comment
PSE17	Exhibit Thevenin equivalence to one of the detection circuits in all detection states.	33.2.6	Figure 33–12 or Figure 33–13.	M	Yes [ ]	Carried forward from "af": Updated Subclause reference Updated Value/Comment
PSE18	V_{detect} with a valid PD signature connected	33.2.6.1	In accordance with item 3 in Table 33–4.	M	Yes [ ]	Carried forward from "af": Updated Subclause reference Updated Value/Comment
PSE19	Two measurements with V_{detect}.	33.2.6.1	At least ΔV_{test} (item 4 in Table 33–4) difference between consecutive measurements.	M	Yes [ ]	Carried forward from "af": Updated Subclause reference Updated Value/Comment
PSE20	Control slew rate when switching detection voltages.	33.2.6.1	Item 6 in Table 33–4.	M	Yes [ ]	Carried forward from "af": Updated Subclause reference Updated Value/Comment
PSE21	Polarity of V_{detect}.	33.2.6.1	Match polarity of V_{port} defined in 33.2.3.	M	Yes [ ]	Carried forward from "af": Updated Subclause reference Updated Value/Comment NOTE: *802.3-2005 pointed to 33.2.1 which was in error. It should have pointed to 33.2.2. The Subclause has since been renumbered to 33.2.3.*
PSE22	Probe link to detect all PDs which present a valid signature.	33.2.7.1	(19KΩ to 26.5KΩ DC resistance) and (150nF capacitance or less) and (Voltage offset of up to 2.0 volts DC) and (Current offset of up to 12μA).	M	Yes [ ]	Carried forward from "af": Updated Subclause reference Updated Value/Comment NOTE: *802.3-2005 PICS said 120nF capacitance, but Cgood in both 802.3-2005 (Table 33-2) and this draft (Table 33-4) state Cgood Max at 150nF.*
PSE23	Reject PDs that present an invalid signature.	33.2.7.2	(Less than 15KΩ DC resistance) or (More than 33 KΩ DC resistance) or (More than 10μF capacitive load.)	M	Yes [ ]	Carried forward from "af": Updated Subclause reference
PSE24	Classification permutations.	33.2.8	Must meet one permutations listed in Table 33–5.	M	Yes [ ]	New
PSE25	Classification not supported.	33.2.8	Assign to Class 0 if Type 1 PSE does not support classification.	PSET1:M	Yes [ ] N/A [ ]	New
PSE26	Classification supported.	33.2.8	Type 2 PSEs perform classification after detection.	PSET2:M	Yes [ ] N/A [ ]	New
PSE27	Default classification	33.2.8	Assign to Class 0 if PD cannot be classified as Class 1, 2, 3, or 4.	PSET1:M	Yes [ ] N/A [ ]	New *Replaces PSE24 in 802.3-2005*
PSE28	Provide V_{class} for 1-Event Physical Layer classification.	33.2.8.1	Between 15.5 and 20.5 volts, limited to 100mA or less at the PI.	1EPLC:M	Yes [ ] N/A [ ]	Carried forward from "af": Updated Feature description Updated Subclause reference *Replaces PSE26 in 802.3-2005*
PSE29	Classification polarity for 1-Event Physical Layer classification.	33.2.8.1	Same as V_{port}.	1EPLC:M	Yes [ ] N/A [ ]	Carried forward from "af": Updated Feature description Updated Subclause reference Updated Status *Replaces PSE27 in 802.3-2005*
PSE30	Classification timing for 1-Event Physical Layer classification.	33.2.8.1	In accordance with item 11 in Table 33–8.	1EPLC:M	Yes [ ] N/A [ ]	Carried forward from "af": Updated Feature description Updated Subclause reference Updated Value/Comment Updated Status *Replaces PSE28 in 802.3-2005*
PSE31	Measurement result of 1-Event Physical Layer classification I_{class}.	33.2.8.1	Classify PD according to Table 33–7.	1EPLC:M	Yes [ ] N/A [ ]	Carried forward from "af": Updated Feature description Updated Subclause reference Updated Value/Comment Updated Status *Replaces PSE29 in 802.3-2005*
PSE32	Measurement timing of 1-	33.2.8.1	Measurement taken after 6 ms.	1EPLC:M	Yes [ ]	New

	Event Physical Layer classification I_{class}.				N/A [ ]	
PSE33	Class 4 result for 1-Event Physical Layer classification with a Type 1 PSE.	33.2.8.1	Assign the PD to Class 0.	PSET1:M	Yes [ ] N/A [ ]	**New**
PSE34	Class 4 result for 1-Event Physical Layer classification with a Type 2 PSE.	33.2.8.1	Power as a Type 2 PD.	PSET2:M	Yes [ ] N/A [ ]	**New**
PSE35	Classification default for 1-Event Physical Layer classification.	33.2.8.1	Assign PD to Class 0 if I_{class} is greater than or equal to 51mA.	PSET1:M	Yes [ ] N/A [ ]	Carried forward from "af": Updated Feature description Updated Subclause reference Updated Value/Comment Updated Status ***Replaces PSE30 in 802.3-2005***
PSE36	In the CLASS_EV1 state, provide V_{Class}.	33.2.8.2	Between 15.5 and 20.5 volts at the PI.	2EPLC:M	Yes [ ] N/A [ ]	**New**
PSE37	Classification timing in CLASS_EV1 state.	33.2.8.2	In accordance with item 5 in Table 33–8.	2EPLC:M	Yes [ ] N/A [ ]	**New**
PSE38	In the CLASS_EV1 state, measurement result I_{class}.	33.2.8.2	Classify PD according to Table 33–7.	2EPLC:M	Yes [ ] N/A [ ]	**New**
PSE39	In the MARK_EV1 state, provide V_{Mark}.	33.2.8.2	In accordance with item 3 in Table 33–8.	2EPLC:M	Yes [ ] N/A [ ]	**New**
PSE40	Classification timing in MARK_EV1 state.	33.2.8.2	In accordance with item 6 in Table 33–8.	2EPLC:M	Yes [ ] N/A [ ]	**New**
PSE41	In the CLASS_EV2 state, provide V_{Class}.	33.2.8.2	Between 15.5 and 20.5 volts at the PI.	2EPLC:M	Yes [ ] N/A [ ]	**New**
PSE42	Classification timing in CLASS_EV2 state.	33.2.8.2	In accordance with item 7 in Table 33–8.	2EPLC:M	Yes [ ] N/A [ ]	**New**
PSE43	In the CLASS_EV2 state, measurement result of I_{class}.	33.2.8.2	Classify PD according to Table 33–7.	2EPLC:M	Yes [ ] N/A [ ]	**New**
PSE44	In the MARK_EV2 state, provide V_{Mark}.	33.2.8.2	In accordance with item 3 in Table 33–8.	2EPLC:M	Yes [ ] N/A [ ]	**New**
PSE45	Classification timing in MARK_EV2 state.	33.2.8.2	In accordance with item 8 in Table 33–8.	2EPLC:M	Yes [ ] N/A [ ]	**New**
PSE46	Classification default for 2-Event Physical Layer classification	33.2.8.2	Assign PD to Class 4 if I_{Class} is greater than or equal to I_{Class_LIM}.	2EPLC:M	Yes [ ] N/A [ ]	**New**
PSE47	Current limitation during Class events.	33.2.8.2	Meet I_{Class_LIM} current limitation.	2EPLC:M	Yes [ ] N/A [ ]	**New**
PSE48	Current limitation during Mark events.	33.2.8.2	Meet I_{Mark_LIM} current limitation.	2EPLC:M	Yes [ ] N/A [ ]	**New**
PSE49	Measurement timing of 2-Event Physical Layer classification I_{class}.	33.2.8.2	Measurement taken after 6 ms.	2EPLC:M	Yes [ ] N/A [ ]	**New**
PSE50	Classification polarity for Class and Mark event voltages.	33.2.8.2	Same as V_{port}.	2EPLC:M	Yes [ ] N/A [ ]	**New**
PSE51	Voltage level at PI when transitioning to POWER_ON state.	33.2.8.2	Greater than or equal to 7 volts.	2EPLC:M	Yes [ ] N/A [ ]	**New**
PSE52	Power supply output	33.2.9	Provide power to the PI according to Table 33–9, Figure 33–10, and Figure 33–11.	M	Yes [ ]	Carried forward from "af": Was PSE31 Updated Subclause reference
PSE53	Electrical requirements when Type 2 PSE powers a Type 1 PD.	33.2.9	Meet requirements of a Type 1 PSE.	PSET2:M	Yes [ ] N/A [ ]	**New**
PSE54	Output voltage.	33.2.9.1	The specification for V_{Port} includes line and temperature variations.	M	Yes [ ]	Carried forward from "af": Was PSE32 Updated Subclause reference
PSE55	V_{Port} measurement.	33.2.9.1	Measured between any conductor of one power pair and any conductor of the other power pair.	M	Yes [ ]	Carried forward from "af": Was PSE33 Updated Subclause reference
PSE56	Load regulation.	33.2.9.2	Specified as 0.44W to (I_{Port_max} min $\times V_{Port}$ min) load step at a rate of change of at least 15mA/µs.	M	Yes [ ]	Carried forward from "af": Was PSE34 Updated Subclause reference Updated Value/Comment
PSE57	Voltage transients.	33.2.9.2	Limited to 3.5V/µs max.	M	Yes [ ]	Carried forward from "af": Was PSE35

						Updated Subclause reference
PSE58	Voltage transients (30µs to 250µs)	33.2.9.3	No less than 7.6% below V_{Port} min and meet requirements of 33.2.9.9.	PSET2:M	Yes [ ] N/A [ ]	**New**
PSE59	Voltage transients (greater than 250µs)	33.2.9.3	Same as static V_{Port}.	**M** (Does this apply to all or only to TYPE2?)	Yes [ ]	**New**
PSE60	Power feeding ripple and noise.	33.2.9.4	Met for common-mode and/or pair-to-pair noise values for power outputs from 0.44W to (I_{Port_max} min × V_{Port} min) at static operating V_{Port}.	M	Yes [ ]	Carried forward from "af": Was PSE36 Updated Subclause reference Updated Value/Comment
PSE61	Maximum current in POWER_ON mode	33.2.9.5	For $V_{Port} > V_{Port}$ min, the minimum value for I_{Port_max} in Table 33-9 shall be (P_{Port} / V_{Port})	M	Yes [ ]	Carried forward from "af": Was PSE37 Updated Feature Updated Subclause reference Updated Value/Comment
PSE62	AC current waveform parameters	33.2.9.5	I_{peak} minimum for 50ms minimum and 5% duty cycle minimum, where: $$I_{peak} = \frac{V_{PSE} - \sqrt{V_{PSE}^2 - 4(R_{Ch})(P_{PD\_pk})}}{2(R_{Ch})}$$ or you can say: I_{peak} minimum for 50ms minimum and 5% duty cycle minimum, where: $I_{peak} = (V_{PSE} - [V^2_{PSE} - 4(RCh)(P_{PD\_pk})]^{1/2}) / 2(R_{Ch})$ or you can say: I_{peak} minimum equals equation (33-1) for 50ms minimum and 5% duty cycle minimum.	M	Yes [ ]	Carried forward from "af": Was PSE38 Updated Subclause reference Updated Value/Comment
PSE63	Specifications for I_{Inrush} current.	33.2.9.6	Meet conditions specified in 33.2.9.6 items a) through f).	M	Yes [ ]	Carried forward from "af": Was PSE39 Updated Subclause reference Updated Value/Comment
PSE64	Specifications for I_{PSEUT} current.	33.2.9.9	Remove power from PI before I_{PSEUT} is exceeded. Equation (33-2) and Figure 33-14.	M	Yes [ ]	**New**
PSE65	Short circuit current.	33.2.9.9	In accordance with item 10 in Table 33-9.	M	Yes [ ]	Carried forward from "af": Was PSE42 Updated Subclause reference Updated Value/Comment
PSE66	Short circuit time limit	33.2.9.9	In accordance with item 11 in Table 33-5.	M	Yes [ ]	Carried forward from "af": Was PSE43 Updated Subclause reference Updated Value/Comment
PSE67	Turn off time	33.2.9.10	Applies to the discharge time from V_{Port} to 2.8Vdc with a test resistor of 320KΩ attached to the PI.	M	Yes [ ]	Carried forward from "af": Was PSE44 Updated Subclause reference
PSE68	Turn off voltage	33.2.9.11	Applies to the PI voltage in the IDLE state.	M	Yes [ ]	Carried forward from "af": Was PSE45 Updated Subclause reference
PSE69	Current unbalance	33.2.9.13	In accordance with item 21 in Table 33-9.	M	Yes [ ]	Carried forward from "af": Was PSE46 Updated Subclause reference Updated Value/Comment
PSE70	Power turn on time	33.2.9.14	In accordance with item 14 in Table 33-9.	M	Yes [ ]	Carried forward from "af": Was PSE47 Updated Subclause reference Updated Value/Comment
PSE71	Power provision.	33.2.10	Do not initiate if PSE is unable to provide maximum power level	PA:M	Yes [ ] N/A [ ]	Carried forward from "af": Was PSE48

			requested by PD based on PD's classification.			Updated Subclause reference
PSE72	Power allocation.	33.2.10	Not be based solely on historical data of the power consumption of the attached PD.	PA:M	Yes [ ] N/A [ ]	Carried forward from "af": Was PSE49 Updated Subclause reference
PSE73	PSE AC MPS component requirements.	33.2.11.1.1	Meet requirements specified in item 1 and item 3 in Table 33–10.	AC:M	Yes [ ] N/A [ ]	Carried forward from "af": Was PSE50 Updated Subclause reference
PSE74	PSE AC MPS component present.	33.2.11.1.1	Meet requirements specified in item 4a in Table 33–10.	AC:M	Yes [ ] N/A [ ]	Carried forward from "af": Was PSE51 Updated Subclause reference
PSE75	PSE AC MPS component absent.	33.2.11.1.1	Meet requirements specified in item 4b in Table 33–10.	AC:M	Yes [ ] N/A [ ]	Carried forward from "af": Was PSE52 Updated Subclause reference
PSE76	Power removal.	33.2.11.1.1	When AC MPS has been absent for a time duration greater than T_{PMDO}.	AC:M	Yes [ ] N/A [ ]	Carried forward from "af": Was PSE53 Updated Subclause reference
PSE77	PSE DC MPS component present.	33.2.11.1.2	Meet requirements specified in item 18 and item 20 in Table 33–9.	DC:M	Yes [ ] N/A [ ]	Carried forward from "af": Was PSE54 Updated Subclause reference Updated Value/Comment
PSE78	PSE DC MPS component absent.	33.2.11.1.2	Meet requirements specified in item 18 in Table 33–9.	DC:M	Yes [ ] N/A [ ]	Carried forward from "af": Was PSE55 Updated Subclause reference Updated Value/Comment
PSE79	Power removal.	33.2.11.1.2	When DC MPS has been absent for a time duration greater than T_{MPDO}.	DC:M	Yes [ ] N/A [ ]	Carried forward from "af": Was PSE56 Updated Subclause reference
PSE80	Not remove power.	33.2.11.1.2	When the DC current is greater than or equal to I_{Min2} max for a least T_{MPS} every $T_{MPS} + T_{MPDO}$, as defined in Table 33–9.	DC:M	Yes [ ] N/A [ ]	Carried forward from "af": Was PSE57 Updated Subclause reference

33.9.3.3 Powered devices

Item	Feature	Subclause	Value/Comment	Status	Support	Notes
PD1	Accept power.	33.3.1	On either set of PI conductors.	M	Yes [ ]	Carried forward from "af": no change
PD2	Polarity insensitive	33.3.1	Both Mode A and Mode B per Table 33–11.	M	Yes [ ]	Carried forward from "af": Updated Value/Comment
PD3	Source power.	33.3.1	The PD will not source power on its PI.	M	Yes [ ]	Carried forward from "af": no change
PD4	Voltage intolerance.	33.3.1	Withstand 0V to 57V at the PI indefinitely without permanent damage.	M	Yes [ ]	Carried forward from "af": no change
PD5	Underpowered notification.	33.3.2	PD does not successfully observe 2-Event Physical Layer or Data Link Layer classification, meet Type1 PD power restrictions.	PDT2:M	Yes [ ] N/A [ ]	New
PD6	PD behavior.	33.3.3	According to state diagram shown in Figure 33–17.	M	Yes [ ]	Carried forward from "af": Was PD5 Updated Subclause reference Updated Value/Comment
PD7	Valid detection signature.	33.3.4	Presented on each set of pairs defined in 33.3.1 if not powered via the PI.	M	Yes [ ]	Carried forward from "af": Was PD6 Updated Subclause reference
PD8	Non-valid detection signature.	33.3.4	Presented on each set of pairs defined in 33.3.1 if not powered via the PI and will not accept power via the PI.	M	Yes [ ]	Carried forward from "af": Was PD7 Updated Subclause reference
PD9	Non-valid detection signature.	33.3.4	When powered, present an invalid signature on the set of pairs not drawing power.	M	Yes [ ]	Carried forward from "af": Was PD8 Updated Subclause reference
PD10	Valid detection signature.	33.3.4	Characteristics defined in Table 33–12.	M	Yes [ ]	Carried forward from "af": Was PD9 Updated Subclause reference Updated Value/Comment
PD11	Non-valid detection signature.	33.3.4	Exhibit one or both of the characteristics described in 33–13.	M	Yes [ ]	Carried forward from "af": Was PD10 Updated Subclause reference Updated Value/Comment
PD12	PD classifications.	33.3.5	Meet one permutation listed in Table 33–5.	M	Yes [ ]	New Essentially replaces PD11 in 802.3-2005.
PD13	Type 2 PD classification implementation.	33.3.5	Implement both 2-Event class signature and Data Link Layer classification	PDT2:M	Yes [ ] N/A [ ]	New
PD14	Type 1 return Class 0 to 3 classification.	33.3.5.1	Implement classification selection according to maximum power draw specified in Table 33–14.	PDT1:M	Yes [ ] N/A [ ]	Carried forward from "af": Was PD11 Updated Feature Updated Subclause reference Updated Value/Comment
PD15	Classification signature.	33.3.5.1	As defined in Table 33–15.	PDCL:M	Yes [ ] N/A [ ]	Carried forward from "af": Was PD12 Updated Subclause reference Updated Value/Comment
PD16	Classification signature.	33.3.5.1	One classification signature during classification.	PDCL:M	Yes [ ] N/A [ ]	Carried forward from "af": Was PD13 Updated Subclause reference
PD17	Type 2 return Class 4 classification.	33.3.5.2	In accordance with the maximum power draw as specified by Table 33–14.	PDCL2:M	Yes [ ] N/A [ ]	New
PD18	Type 2 classification behavior.	33.3.5.2	As defined in Figure 33–17 and Table 33–16.	PDCL2:M	Yes [ ] N/A [ ]	New
PD19	Type 2 PD electrical requirements	33.3.5.2	As defined by Table 33–17 of the Type defined in its pse_power_type	PDT2:M	Yes [ ] N/A [ ]	New

			state variable.			
PD20	PD implementing 2-Event class signature.	33.3.5.2.1	Present non-valid detection signature when voltage at the PI is in the range of V_{Mark}.	PDCL2:M	Yes [ ] N/A [ ]	New
PD21	Mark event current limits	33.3.5.2.1	Not exceed I_{Mark} when voltage at the PI enters V_{Mark} as defined in Table 33–16.	PDCL:M	Yes [ ] N/A [ ]	New
PD22	State variable reset	33.3.5.2.2	Reset pse_power_type to 1 when voltage at the PI is less than or equal to V_{Reset} max as defined in Table 33–16.	PDCL2:M	Yes [ ] N/A [ ]	New
PD23	PD current draw	33.3.5.2.2	Minimum 0.25 mA until the PD transitions from DO_MARK_EVENT state to the NOT_MDI_POWERED state.	PDCL:M	Yes [ ] N/A [ ]	New
PD24	PSE identification	33.3.6	Identify as Type 1 or Type 2 (see Figure 33–17).	M	Yes [ ]	New
PD25	PD power supply.	33.3.7	Operate within the characteristics in Table 33–17.	M	Yes [ ]	Carried forward from "af": Was PD14 Updated Subclause reference Updated Value/Comment
PD26	PD turn on voltage	33.3.7.1	PD will turn on at a voltage less than V_{On}.	M	Yes [ ]	Carried forward from "af": Was PD15 Updated Subclause reference
PD27	PD stay on voltage	33.3.7.1	Must stay on for all voltages in the range of V_{Port}.	M	Yes [ ]	Carried forward from "af": Was PD16 Updated Subclause reference
PD28	PD turn off voltage	33.3.7.1	Must turn off at voltage less than V_{Port} minimum and greater than or equal to V_{Off}.	M	Yes [ ]	Carried forward from "af": Was PD17 Updated Subclause reference Updated Value/Comment
PD29	Startup oscillations.	33.3.7.1	Shall turn on or off without startup oscillations and within the first trial at any load value.	M	Yes [ ]	Carried forward from "af": Was PD29 Updated Subclause reference
PD30	Input average power.	33.3.7.2	Applies for input power as specified in Table 33–17 averaged over one second.	M	Yes [ ]	Carried forward from "af": Was PD18 Updated Subclause reference Updated Value/Comment
PD31	System stability	33.3.7.2.1	P_{Port} measured when PD is fed by V_{Port} min to V_{Port} max with R_{Ch} (as defined in Table 33–1) in series.	M	Yes [ ]	New
PD32	Type 2 PD input inrush current.	33.3.7.3	With pse_power_type state set to 2 prior to power-on, operate as a Type 1 PD for at least T_{Inrush} max.	PDT2:M	Yes [ ] N/A [ ]	New
PD33	Input inrush current.	33.3.7.3	Limited by the PD if C_{port} is greater than or equal to 180μF so that I_{Inrush} max is satisfied.	M	Yes [ ]	Carried forward from "af": Was PD19 Updated Subclause reference
PD34	Peak operating current.	33.3.7.4	Not to exceed P_{Port} max/V_{Port} for more than 50ms max and 5% duty cycle max.	M	Yes [ ]	Carried forward from "af": Was PD20 Updated Subclause reference
PD35	Peak operating power.	33.3.7.4	Not to exceed P_{Peak} max.	M	Yes [ ]	New
PD36	RMS, DC, and ripple current.	33.3.7.4	Bounded by $I_{Port} = [(I_{Port\_dc})^2 + (I_{Port\_ac})^2]^{1/2}$.	M	Yes [ ]	Carried forward from "af": Was PD22 Updated Subclause reference Updated Value/Comment
PD37	Maximum operating DC and RMS current.	33.3.7.4	Defined by the following equation: $I_{portmax}[mA] = P_{portmax} / V_{Port}$	M	Yes [ ]	Carried forward from "af": Was PD23 Updated Subclause reference Updated Value/Comment
PD38	Peak transient current	33.3.7.5	Not to exceed 15 mA/μs in either polarity.	M	Yes [ ]	New
PD39	Specifications for I_{PDUT}	33.3.7.5	Operate below upperbound template defined in Figure 33–18.	M	Yes [ ]	New
PD40	Transient current.	33.3.7.5	Operate below upperbound template defined in 33.3.9.9 and Figure 33–14 for transients greater than 10ms.	M	Yes [ ]	New
PD41	PI capacitance during normal powering mode.	33.3.7.6	As specified in Subclause 33.3.7.6.	M	Yes [ ]	Carried forward from "af": Was PD24

						Updated Subclause reference Updated Value/Comment
PD42	Ripple and noise.	33.3.7.7	As specified in Table 33–17 for the common-mode and/or differential pair-to-pair noise at the PD PI.	M	Yes [ ]	Carried forward from "af": Was PD25 Updated Subclause reference Updated Value/Comment
PD43	Ripple and noise specification.	33.3.7.7	For all operating voltages in the range defined by Table 33–17 item 1.	M	Yes [ ]	Carried forward from "af": Was PD26 Updated Subclause reference Updated Value/Comment
PD44	Ripple and noise presence.	33.3.7.7	For all operating voltages in the range defined by Table 33–9 item 3.	M	Yes [ ]	Carried forward from "af": Was PD27 Updated Subclause reference Updated Value/Comment
PD45	Classification stability.	33.3.7.8	Classification signature will remain valid within T_{class} and remain valid for the duration of the classification period.	M	Yes [ ]	Carried forward from "af": Was PD30 Updated Subclause reference
PD46	Backfeed voltage.	33.3.7.10	Mode A and Mode B per 33.3.7.10.	M	Yes [ ]	Carried forward from "af": Was PD31 Updated Subclause reference Updated Value/Comment
PD47	Maintain power signature.	33.3.8	(current draw) and (AC impedance) defined in Table 33–18.	M	Yes [ ]	Carried forward from "af": Was PD32 Updated Subclause reference Updated Value/Comment
PD48	No longer require power.	33.3.8	Remove both components of the Maintain Power Signature.	M	Yes [ ]	Carried forward from "af": Was PD33 Updated Subclause reference

33.9.3.4 Electrical specifications applicable to the PSE and PD

(Replace existing table with this updated table.)

Item	Feature	Subclause	Value/Comment	Status	Support	Notes
EL1	Conductor isolation.	33.4.1	Provided between accessible external conductors including, frame ground and all MDI leads.	M	Yes [ ]	**New** Combined PSEEL1 and PDEL1 from 802.3-2005.
EL2	Strength tests for electrical isolation.	33.4.1	Withstand at least one of the electrical strength tests specified in 33.4.1.	M	Yes [ ]	Carried forward from "af": no change
EL3	Insulation breakdown	33.4.1	No breakdown of insulation during electrical isolation tests.	M	Yes [ ]	**New**
EL4	Isolation resistance	33.4.1	At least 2MΩ, measured at 500Vdc after electrical isolation tests.	M	Yes [ ]	**New**
EL5	Isolation and grounding requirements.	33.4.1	Conductive link segments that have different requirements must have those requirements provided by the port-to-port isolation of the NID.	M	Yes [ ]	Carried forward from "af": Was EL3
EL6	Environment A requirements for multiple instances of PSE and/or PD.	33.4.1.1.1	Meet or exceed the isolation requirements of the MAU/PHY with which they are associated.	!MID:M	Yes [ ] N/A [ ]	Carried forward from "af": Was EL4
EL7	Environment A requirement.	33.4.1.1.1	Switch more negative conductor.	M	Yes [ ]	Carried forward from "af": Was EL5
EL8	Environment B requirements for multiple instances of PSE and/or PD.	33.4.1.1.2	Meet or exceed the isolation requirements of the MAU/PHY with which they are associated.	M	Yes [ ]	Carried forward from "af": Was EL6
EL9	Fault tolerance for PSEs and PDs encompassed within the MDI.	33.4.2	Meet requirements of the appropriate specifying clause.	M	Yes [ ]	Carried forward from "af": Was EL7
EL10	Fault tolerance for PSEs and PDs not encompassed within the MDI.	33.4.2	Meet requirements of 33.4.2.	M	Yes [ ]	Carried forward from "af": Was EL8
EL11	Common-mode fault tolerance.	33.4.2	Each wire pair will withstand a 1000V common-mode impulse applied at *Ecm* of either polarity without damage.	M	Yes [ ] N/A [ ]	Carried forward from "af": Was EL8 Updated Status
EL12	The shape of the impulse for item common-mode fault tolerance.	33.4.2	0.3/50 μs (300 ns virtual front time, 50 μs virtual time of the half value).	M	Yes [ ] N/A [ ]	Carried forward from "af": Was EL8 Updated Status
EL13	Impedance balance for transmit and receive pairs.	33.4.3	Exceed: - 29-17 log 10 (f/10)dB from 1.0 to 20MHz for 10Mbits/s PHYs - 34-19.2 log 10(f/50)dB from 1.0 to 100MHz for 100Mbits/s or greater PHYs.	M	Yes [ ]	Carried forward from "af": Was EL11 Updated Value/Comment (M/s to Mbits/s)
EL14	Common-mode output voltage.	33.4.4	Magnitude while transmitting data with power applied will not exceed 50mV peak when operating at 10Mbits/s and 50mV peak-to-peak when operating at 100Mbits/s or greater.	M	Yes [ ]	Carried forward from "af": Was EL12
EL15	Common-mode AC voltage.	33.4.4	Magnitude at all other ports will not exceed 50mV peak-to-peak.	M	Yes [ ]	Carried forward from "af": Was EL13
EL16	Frequency range for common-mode AC voltage measurement.	33.4.4	At all other ports will be from 1MHz to 100MHz.	M	Yes [ ]	Carried forward from "af": Was EL14
EL17	Common-mode output voltage test configuration.	33.4.4	Must be performed with the PHY transmitting data and an operating PSE or PD wand with the PSE load or PD source requirements specified in 33.4.4 items 1) or 2).	M	Yes [ ]	Carried forward from "af": Was EL15
EL18	Noise from an operating PSE or PD to the differential transmit and receive pairs.	33.4.6	Will not exceed 10mV peak-to-peak measured from 1MHz to 100MHz.	M	Yes [ ]	Carried forward from "af": Was EL16

EL19	Differential noise voltage test setup.	33.4.6	The PSE and PD shall be terminated as illustrated in Figure 33–22 and tested with the PSE and PD conditions as specified in 33.4.4.	M	Yes [ ]	Carried forward from "af": Was EL17 Updated Value/Comment
EL20	Return loss requirements.	33.4.7	Specified in 14.3.1.3.4 for a 10Mb/s PHY, in ANSI X3.263:1995 for a 100Mb/s PHY, and 40.8.3.1 for a 1000Mb/s PHY.	M	Yes [ ]	Carried forward from "af": Was EL18
EL21						

33.9.3.5 Electrical specifications applicable to the PSE

(Replace existing table with this updated table.)

Item	Feature	Subclause	Value/Comment	Status	Support	Notes
PSEEL1	Short circuits fault tolerance.	33.4.2	Any wire pair will withstand any short circuit to any other pair for an indefinite amount of time.	M	Yes [ ]	Carried forward from "af": Was PSEEL2
PSEEL2	Magnitude of short circuit current.	33.4.2	Not to exceed maximum value of I_{LIM}.	M	Yes [ ]	Carried forward from "af": Was PSEEL3
PSEEL3	Limitation of electromagnetic interference.	33.4.5	PSE will comply with applicable local and national codes.	M	Yes [ ]	Carried forward from "af": Was PSEEL4
PSEEL4	Insertion of Midspan at FD.	33.4.8	Comply with the guidelines specified in 33.4.8 items a) and b).	MID:M	Yes [ ] N/A [ ]	Carried forward from "af": Was PSEEL5
PSEEL5	Resulting "channel".	33.4.8	Installation of a Midspan PSE will not increase the length to more than 100 meters as defined in ISO/IEC 11801.	MID:M	Yes [ ] N/A [ ]	Carried forward from "af": Was PSEEL6 See comment 11
PSEEL6	Configurations with Midspan PSE.	33.4.8	Must not alter transmission requirements of the "permanent link".	MID:M	Yes [ ] N/A [ ]	Carried forward from "af": Was PSEEL7
PSEEL7	Midspan continuity in non data pairs.	33.4.8	Will not provide DC continuity between the two sides of the segment for the pairs that inject power.	MID:M	Yes [ ] N/A [ ]	Carried forward from "af": Was PSEEL9
PSEEL8	Midspan PSE inserted as a "Connector" or "Telecom outlet."	33.4.8.1	Meet transmission parameters NEXT, insertion loss and return loss.	MID:M	Yes [ ] N/A [ ]	Carried forward from "af": Was PSEEL10
PSEEL9	Midspan PSE NEXT.	33.4.8.1.1	$NEXT_{conn} \geq 40 - 20\log(f/100)\text{dB}$ [equation (33–12)] but not greater than 65dB from 1MHz to 100MHz.	MID:M	Yes [ ] N/A [ ]	Carried forward from "af": Was PSEEL11 Updated Value/Comment
PSEEL10	Midspan PSE Insertion Loss.	33.4.8.1.2	$Insertion\_loss_{conn} \leq 0.04 \times SQRT(f)$ [equation (33–13)] but not less than 0.1dB from 1MHz to 100MHz.	MID:M	Yes [ ] N/A [ ]	Carried forward from "af": Was PSEEL12 Updated Value/Comment
PSEEL11	Midspan PSE Return Loss.	33.4.8.1.3	$1\text{MHz} \leq f < 20\text{MHz}$: 23dB $20\text{MHz} \leq f \leq 100\text{MHz}$: 14dB (Table 33–19) for transmit and receive pairs.	MID:M	Yes [ ] N/A [ ]	Carried forward from "af": Was PSEEL13 Updated Value/Comment
PSEEL12	Work area or equipment cable Midspan PSE.	33.4.8.1.4	Meet the requirements of this clause and the specifications for a Category 5 (jumper) cord as specified in ISO/IEC 11801-2002 for insertion loss, NEXT, and return loss for all transmit and receive pairs.	MID:M	Yes [ ] N/A [ ]	Carried forward from "af": Was PSEEL14 Updated Value/Comment See comment 12
PSEEL13	Midspan signal path requirements.	33.4.8.2	Exceed transfer function gain $\{-16-\log_{10}(0.251188/f)\}_{dB}$ [equation (33-14)] from 100kHz to 1MHz at the pins of the PI used as 100BASE-TX transmit pins.	MIDA:M	Yes [ ] N/A [ ]	New
PSEEL14	Compliance testing requirements.	33.4.8.2	Test signal applied through a source impedance of $100\Omega \pm 1\%$.	MID:M	Yes [ ] N/A [ ]	New

33.9.3.6 Electrical specifications applicable to the PD

(Replace existing table with this updated table.)

Item	Feature	Subclause	Value/Comment	Status	Support	Notes
PDEL1	PD common-mode test requirement.	33.4.4	The PIs that require power shall be terminated as illustrated in Figure 33-22.	M	Yes [ ]	Carried forward from "af": Was PDEL2

33.9.3.7 Environmental specifications applicable to PSEs and PDs

(No changes to existing table.)

Item	Feature	Subclause	Value/Comment	Status	Support	Notes
ES1	Safety.	33.5.1	Conform to IEC publication 60950-1:2001.	M	Yes [ ]	Carried forward from "af": No change
ES2	Safety.	33.5.1	Comply with all applicable local and national codes.	M	Yes [ ]	Carried forward from "af": No change
ES3	Telephony voltages.	33.5.6	Application thereof described in 33.5.6 not result in any safety hazard.	M	Yes [ ]	Carried forward from "af": No change
ES4	Limitation of electromagnetic interference.	33.5.7	Comply with applicable local and national codes.	M	Yes [ ]	Carried forward from "af": No change

33.9.3.8 Environmental specifications applicable to PSE

(No changes to existing table.)

Item	Feature	Subclause	Value/Comment	Status	Support	Notes
PSEES1	Safety.	33.5.1	Limited Power Source in accordance with IEC publication 60950-1:2001.	M	Yes [ ]	Carried forward from "af": No change
PSEES2	Resistance unbalance.	33.5.5	As specified in IEC 11801 Edition 2, Clause 6.4.8 (reference: 3 percent).	M	Yes [ ]	Carried forward from "af": No change **See comment 13**

33.9.3.9 Management function requirements

Item	Feature	Subclause	Value/Comment	Status	Support	Notes
MF1	Management capability.	33.6	Access to register definitions defined in clause 33.6.1 via interface described in Clause 22.2.4 or 45.2 or equivalent.	MAN:M	Yes [ ] N/A [ ]	Carried forward from "af": Updated Value/Comment
MF2	PSE registers.	33.6.1	Register address 11 for control functions and register address 12 for status function.	MAN:M	Yes [ ] N/A [ ]	Carried forward from "af": No change
MF3	Register bits latching high (LH).	33.6.1	Remain high until read via the management interface.	MAN:M	Yes [ ] N/A [ ]	Carried forward from "af": No change
MF4	Register bits read.	33.6.1	Bit assumes a value based on the current state of the condition it monitors.	MAN:M	Yes [ ] N/A [ ]	Carried forward from "af": No change
MF5	PSE Control register reserved bits (11.15:6).	33.6.1.1.1	Not affected by writes and return a value of zero when read.	MAN:M	Yes [ ] N/A [ ]	Carried forward from "af": Updated Feature
MF6	Data Link Layer classification not supported.	33.6.1.1.2	Ignore writes to bit 11.5 and return a value of '0' when read.	MAN* !DLLC:M	Yes [ ] N/A [ ]	New
MF7	Data Link Layer classification supported.	33.6.1.1.2	Ignore writes to bit 11.5 and return a value of '1' when function cannot be disabled.	MAN* DLLC:M	Yes [ ] N/A [ ]	New
MF8	Enable/disable Data Link Layer classification.	33.6.1.1.2	Function enabled by setting bit 11.5 to '1' and disabled by setting bit 11.5 to '0'.	MAN* DLLC:M	Yes [ ] N/A [ ]	New
MF9	Physical Layer classification not supported.	33.6.1.1.2	Ignore writes to bit 11.4 and return a value of '0' when read.	MAN* !CL:M	Yes [ ] N/A [ ]	New
MF10	Physical Layer classification supported.	33.6.1.1.2	Ignore writes to bit 11.4 and return a value of '1' when function cannot be disabled.	MAN* CL:M	Yes [ ] N/A [ ]	New
MF11	Enable/disable Physical Layer classification.	33.6.1.1.2	Function enabled by setting bit 11.4 to '1' and disabled by setting bit 11.5 to '0'.	MAN* CL:M	Yes [ ] N/A [ ]	New
MF12	Pair Control Ability not supported.	33.6.1.1.3	Ignore writes to bits 11.3:2	MAN* !PCA:M	Yes [ ] N/A [ ]	Carried forward from "af": Was MF6 Updated Subclause reference
MF13	Writes to 11.3:2 when Pair Control Ability not supported.	33.6.1.1.3	Ignored. Return the value that reports the supported PSE Pinout Alternative when read.	MAN* !PCA:M	Yes [ ] N/A [ ]	Carried forward from "af": Was MF7 Updated Subclause reference
MF14	Bits 11.3:2 set to '01'.	33.6.1.1.3	Forces the PSE to use Alternative A.	MAN* PCA:M	Yes [ ] N/A [ ]	Carried forward from "af": Was MF8 Updated Subclause reference
MF15	Bits 11.3:2 set to '10'.	33.6.1.1.3	Forces the PSE to use Alternative B.	MAN* PCA:M	Yes [ ] N/A [ ]	Carried forward from "af": Was MF9 Updated Subclause reference
MF16	Pair Control Ability bit, (12.0).	33.6.1.1.3	A value of '1' sets the mr_pse_alternative variable.	MAN* PCA:M	Yes [ ] N/A [ ]	Carried forward from "af": Was MF10 Updated Subclause reference
MF17	PSE function disabled.	33.6.1.1.4	Setting PSE Enable bits 11.1:0 to logic '00', also the MDI shall function as it would if it had not PSE function.	MAN:M	Yes [ ] N/A [ ]	Carried forward from "af": Was MF11 Updated Subclause reference
MF18	PSE function enabled.	33.6.1.1.4	Setting PSE Enable bits 11.1:0 to logic '01'.	MAN:M	Yes [ ] N/A [ ]	Carried forward from "af": Was MF12 Updated Subclause reference
MF19	PSE enable bits (11.1:0).	33.6.1.1.4	Writing to these register bits shall set mr_pse_enable to the corresponding value: '00' = disable, '01' = enable and '10' = force power.	MAN:M	Yes [ ] N/A [ ]	Carried forward from "af": Was MF13 Updated Subclause reference Updated Value/Comment (with single quotes around bit values)
MF20	Reserved bit (12.15).	33.6.1.2.1	Not affected by writes and shall return a value of zero when read.	MAN:M	Yes [ ] N/A [ ]	Carried forward from "af": Was MF14 Updated Feature (bits to bit)

						Updated Subclause reference
MF21	Power denied bit (12.12).	33.6.1.2.4	A value of '1' indicates power has been denied.	MAN:M	Yes [ ] N/A [ ]	Carried forward from "af": Was MF15 Updated Subclause reference
MF22	Power denied bit implementation.	33.6.1.2.4	Will be implemented with a latching high behavior as defined in 33.6.1.	MAN:M	Yes [ ] N/A [ ]	Carried forward from "af": Was MF16 Updated Subclause reference
MF23	Valid signature bit (12.11).	33.6.1.2.5	Bit indicates a valid signature has been detected. Set to logic '1' when mr_valid_signature transitions from FALSE to TRUE.	MAN:M	Yes [ ] N/A [ ]	Carried forward from "af": Was MF17 Updated Subclause reference Updated Value/Comment
MF24	Valid signature bit implementation.	33.6.1.2.5	Will be implemented with a latching high behavior as defined in 33.6.1.	MAN:M	Yes [ ] N/A [ ]	Carried forward from "af": Was MF18 Updated Subclause reference
MF25	Invalid signature bit (12.10).	33.6.1.2.6	Bit indicates an invalid signature has been detected. Set to logic '1' entering SIGNATURE_INVALID state.	MAN:M	Yes [ ] N/A [ ]	Carried forward from "af": Was MF19 Updated Subclause reference Updated Value/Comment
MF26	Invalid signature bit implementation.	33.6.1.2.6	Will be implemented with a latching high behavior as defined in 33.6.1	MAN:M	Yes [ ] N/A [ ]	Carried forward from "af": Was MF20 Updated Subclause reference
MF27	Short circuit bit (12.9).	33.6.1.2.7	Bit indicates a short circuit condition has been detected. Set to logic '1' entering ERROR_DELAY_SHORT state.	MAN:M	Yes [ ] N/A [ ]	Carried forward from "af": Was MF21 Updated Subclause reference Updated Value/Comment
MF28	Short circuit bit implementation.	33.6.1.2.7	Will be implemented with a latching high behavior as defined in 33.6.1	MAN:M	Yes [ ] N/A [ ]	Carried forward from "af": Was MF22 Updated Subclause reference
MF29	Overload bit (12.8).	33.6.1.2.8	Bit indicates an overload condition has been detected. Set to logic '1' entering ERROR_DELAY_OVER state.	MAN:M	Yes [ ] N/A [ ]	Carried forward from "af": Was MF23 Updated Subclause reference Updated Value/Comment
MF30	Overload bit implementation.	33.6.1.2.8	Will be implemented with a latching high behavior as defined in 33.6.1	MAN:M	Yes [ ] N/A [ ]	Carried forward from "af": Was MF24 Updated Subclause reference
MF31	MPS Absent bit (12.7)	33.6.1.2.9	Bit indicates an MPS Absent condition has been detected. Set to logic '1' when transitioning directly for POWER_ON to IDLE state when MPS is absent for a duration greater than T_{MPDO} as specified in 33.2.11.	MAN:M	Yes [ ] N/A [ ]	Carried forward from "af": Was MF25 Updated Subclause reference Updated Value/Comment
MF32	MPS Absent bit implementation.	33.6.1.2.9	Will be implemented with a latching high behavior as defined in 33.6.1	MAN:M	Yes [ ] N/A [ ]	Carried forward from "af": Was MF26 Updated Subclause reference

33.9.3.10 Data Link Layer classification requirements

[EDITOR'S NOTE—Update the below noted 802.1AB reference to reflect the proper revision during preparation for publication.]

Item	Feature	Subclause	Value/Comment	Status	Support	Notes
DLL1	Data Link Layer classification standards compliance.	33.7.1	Meet mandatory parts of IEEE Std 802.1AB™-200X.	DLLC:M	Yes [ ] N/A [ ]	New
DLL2	TLV frame definitions.	33.7.1	Meet requirements for Type, Length, and Value (TLV) defined in 33.7.2.	DLLC:M	Yes [ ] N/A [ ]	New
DLL3	Control state diagrams.	33.7.1	Meet state diagrams defined in 33.7.6.	DLLC:M	Yes [ ] N/A [ ]	New
DLL4	Frequency of power management PDUs.	33.7.1	Send and process at least once every 30 seconds.	DLLC:M	Yes [ ] N/A [ ]	New
DLL5	Power management PDU contents.	33.7.1	Contains DTE Power via MDI classification TLV.	DLLC:M	Yes [ ] N/A [ ]	New
DLL6	Conservation of LLDPDU space.	33.7.2	Power via MDI TLV not transmitted when DTE Power via MDI classification TLV is transmitted.	DLLC:M	Yes [ ] N/A [ ]	New
DLL7	Requested power type/source/priority field.	33.7.2.1	Contains a bit-map of the currently requested power type, source and priority defined in Table 33–22.	DLLC:M	Yes [ ] N/A [ ]	New
DLL8	Power type field.	33.7.2.1.1	Set to '01' for PD and '00' for PSE.	DLLC:M	Yes [ ] N/A [ ]	New
DLL9	Power source field when power type is PD.	33.7.2.1.2	Set to '01' when powered only through the PI; set to '10' when powered only from a local supply; set to '11' when powered from both; set to '00' when information is not available.	DLLC:M	Yes [ ] N/A [ ]	New
DLL10	Power source field when power type is PSE.	33.7.2.1.2	When sourcing power through the PI, set to '01' when using primary supply; set to '10' when using backup source; set to '00' when information is not available.	DLLC:M	Yes [ ] N/A [ ]	New
DLL11	Power priority field when power type is PD.	33.7.2.1.3	Set to the power priority configured for the device; set to '00' is power priority is undetermined.	DLLC:M	Yes [ ] N/A [ ]	New
DLL12	Power priority field when power type is PSE.	33.7.2.1.3	Set to '00'.	DLLC:M	Yes [ ] N/A [ ]	New
DLL13	Requested PD power value.	33.7.2.2	Contains currently requested power valued defined in Table 33–23.	DLLC:M	Yes [ ] N/A [ ]	New
DLL14	Actual power type/source/priority field.	33.7.2.3	Contains a bit-map of the actual power type, source and priority defined in Table 33–22.	DLLC:M	Yes [ ] N/A [ ]	New
DLL15	Actual PD power value field.	33.7.2.4	Contains the current actual PD power value defined in Table 33–23.	DLLC:M	Yes [ ] N/A [ ]	New
DLL16	Acknowledge field.	33.7.2.5	Contains value indicating response to last change in requested power as defined in Table 33–24.	DLLC:M	Yes [ ] N/A [ ]	New
DLL17	Acknowledge field default value.	33.7.2.5	Set to '00' unless state machine enters REMOTE ACK or REMOTE NACK states.	DLLC:M	Yes [ ] N/A [ ]	New
DLL18	Entry into REMOTE ACK state.	33.7.2.5	Send PDU with Acknowledge field set to '01'.	DLLC:M	Yes [ ] N/A [ ]	New
DLL19	Entry into REMOTE NACK state.	33.7.2.5	Send PDU with Acknowledge field set to '10'.	DLLC:M	Yes [ ] N/A [ ]	New
DLL20	Data Link Layer classification timing	33.7.5	Transmit a LLDPDU containing a DTE Power via MDI classification	DLLC:M	Yes [ ] N/A [ ]	New

	requirements.		TLV within 5 minutes of Data Link Layer classification being enabled as indicated by the variables pd_dll_enabled or pse_dll_enabled in a PD and PSE respectively.			
DLL21	Classification TLV received with Requested power value field not equal to Actual power value field.	33.7.5	Transmit a LLDPDU containing a DTE Power via MDI classification TLV with Acknowledge field set to "acknowledge" or "non-acknowledge" within 5 minutes.	DLLC:M	Yes [ ] N/A [ ]	<mark>New</mark>
DLL22	Classification TLV sent with Acknowledge field set to "acknowledge" or "non-acknowledge."	33.7.5	Transmit a LLDPDU containing a DTE Power via MDI classification TLV with Acknowledge field set to "not part of acknowledge cycle" within 5 minutes.	DLLC:M	Yes [ ] N/A [ ]	<mark>New</mark>
DLL23	PSE power control state diagrams.	33.7.6	Meet the behavior of shown in Figure 33-27.	DLLC:M	Yes [ ] N/A [ ]	<mark>New</mark>
DLL24	PD power control state diagrams.	33.7.6	Meet the behavior of shown in Figure 33-28.	DLLC:M	Yes [ ] N/A [ ]	<mark>New</mark>

33.9.3.11 Loss of management frame communication requirements

(New table.)

Item	Feature	Subclause	Value/Comment	Status	Support	Notes
LMFC1	Loss of management frame communication.	33.8	PSEs and PDs operate using last acknowledged classification state.	DLLC:M	Yes [ ] N/A [ ]	New
LMFC2	Loss of management frame communication past LLDP TTL timeout value plus 2 × TTL timeout value.	33.8	PD sets aLLDPPoEPLocAcknowledge attribute to "loss of communications."	DLLC:M	Yes [ ] N/A [ ]	New

Unofficial comments generated during the creation of the PICS.

Subclause	Page	Line number	Comment Type
33.8	100	21	E

Comment

Missing the word "set." Existing text: "a PD shall aLLDPPoEPLocAcknowledge …"

Suggested Remedy

Add the word set: "a PD shall set aLLDPPoEPLocAcknowledge …"

Subclause	Page	Line number	Comment Type
33.7	89	8	E

Comment

Use of the word "must" and not "shall."

"Type 2 PDs that require more than 12.95 W must support Data Link Layer classification."

Shouldn't the word shall be used; there are several instances in the draft where the word "must" is used where a "shall" statement may be appropriate. The draft should be searched and each use of the word "must" needs to be examined to determine if in needs to be replaced with a "shall."

Suggested Remedy

The draft should be searched and each use of the word "must" needs to be examined to determine if it needs to be replaced with a "shall." In cases where "must" is replaced with "shall" it may be necessary to generate a new PICS statement.

In this case replace the word "must" with "shall" and insert the following PICS statement into the new Table 33.7.3.9 as the first PICS and renumber all the following accordingly.

Item	Feature	Subclause	Value/Comment	Status	Support	Notes
DLL1	Type 2 PDs requiring more than 12.95 W.	33.7	Support Data Link Layer classification.	PDT2:M	Yes [ ] N/A [ ]	**Insert if comment above is accepted.**

Subclause	Page	Line number	Comment Type
33.9.3.2	104	18	E

Comment

PICS PSE22: 802.3-2005 PICS said 120nF capacitance, but Cgood in both 802.3-2005 (Table 33-2) and this draft (Table 33-4) state Cgood Max at 150nF.

Suggested Remedy

Change value in PICS PSE22 in the Value/Comment column to be 150nF as proposed in these draft PICS.

802.3-2005 PICS deleted due to changes in the draft standard.

Item	Feature	Subclause	Value/Comment	Status	Support	Notes
PSE2	Alternative B	33.2.1	Only implementation allowed for Midspan	MID:M	Yes [ ] N/A [ ]	**Deleted from old table**
The paragraph in 802.3-2005 has been **removed**; therefore this PICS statement is no longer valid. "Midspan PSEs shall use Alternative B. Midspan PSEs are limited to operation with 10BASE-T and 100BASE-TX systems. Operation of Midspan PSEs on 1000BASE-T systems is beyond the scope of this standard."						
PSE24	Default Classification	33.2.7	Assign to Class 0 if PD cannot be classified as Class 1, 2, 3, or 4.	M	Yes [ ]	**Deleted from old table**
PSE24 PICS statement has been replaced by the new PSE25 and PSE27.						
PSE25	Classification power levels	33.2.7.1	PDs classified as Class 4 will be treated as Class 0.	M	Yes [ ]	**Deleted from old table**
The paragraph in 802.3-2005 has been **removed**; therefore this PICS statement is no longer valid. "Class 4 is reserved for future use. PDs classified as Class 4 shall be treated as Class 0 for powering purposes."						
PSE40	Overload current detection range	33.2.8.3	If Iport > ICUT for T > Tovld the PSE shall remove power. Item 8 in Table 33–5	M	Yes [ ]	**Deleted from old table**
The paragraph in 802.3-2005 has been **changed**; therefore this PICS statement is no longer valid. "If IPort in Table 33–5 exceeds ICUT for longer than Tovld, the PSE shall remove power from the PI. See Figure 33C.6." *The reason for the deletion was the word "shall" was replaced with the word "may". Subclause 33.2.9.7*						
PSE41	Overload time limit	33.2.8.7	Item 9 in Table 33–5.	M	Yes [ ]	**Deleted from old table**
The paragraph in 802.3-2005 has been **changed**; therefore this PICS statement is no longer valid. "After time duration of Tovld as specified in Table 33–5, the PSE shall remove power from the PI. See Figure 33C.6." *The reason for the deletion was the word "shall" was replaced with the word "may". Subclause 33.2.9.8*						
PD11	Return Class 0 to 3 classification.	33.3.4	Implement classification selection according to maximum power draw specified in Table 33–10.	PDCL:M	Yes [ ] N/A	**Deleted from old table**
The paragraph in 802.3-2005 has been **removed**; therefore this PICS statement is no longer valid. "A PD shall return Class 0 to 3 in accordance with the maximum power draw as specified by Table 33–10." It has been replaced by updated PICS PD12.						
PD21	Peak current.	33.3.5.4	Not to exceed I$_{Port}$ max.	M	Yes [ ]	**Deleted from old table**
The sentence in 802.3-2005 has been **removed**; therefore this PICS statement is no longer valid. "Peak current shall not exceed IPort max."						
PD28	Power supply turn on/turn off voltages.	33.3.5.7	As specified in Table 33–12 when connected to a PSE through a 20Ω series resistor.	M	Yes [ ]	**Deleted from old table**
The sentence in 802.3-2005 has been **removed**; therefore this PICS statement is no longer valid. "The PD shall turn on at VOn and turn off at VOff (as specified in Table 33–12) when connected to a PSE through a 20Ω series resistor."						
EL2	Electrical isolation.	33.4.1	Electrical isolation will be in	M	Yes [ ]	**Deleted from old table**

			accordance with Subclause 6.2 of IEC 60950-1:2001.			
The sentence in 802.3-2005 has been **removed**; therefore this PICS statement is no longer valid. "This electrical isolation shall be in accordance with the isolation requirements between SELV circuits and telecommunication network connections in subclause 6.2 of IEC 60950-1:2001."
PSEEL1	PSE electrical isolation.	33.4.1	Provided between port device circuits, frame ground and PI leads.	M	Yes [ ]	**Deleted from old table**
The sentence in 802.3-2005 has been **removed**; therefore this PICS statement is no longer valid. (See PDEL1 below) "The PSE shall provide electrical isolation between the PI device circuits, including frame ground (if any), and all PI leads." It has been replaced by the new combined PICS EL1 based on the updated statements in Subclause 33.4.1: "PDs and PSEs shall provide isolation between all accessible external conductors, including frame ground (if any), and all MDI leads including those not used by the PD or PSE."
PDEL1	PD electrical isolation.	33.4.1	Provided between port device circuits, frame ground and PI leads.	M	Yes [ ]	**Deleted from old table**
The sentence in 802.3-2005 has been **removed**; therefore this PICS statement is no longer valid. (See PSEEL1 above) "The PD shall provide electrical isolation between all external conductors, including frame ground (if any), and all PI leads." It has been replaced by the new combined PICS EL1 based on the updated statements in Subclause 33.4.1: "PDs and PSEs shall provide isolation between all accessible external conductors, including frame ground (if any), and all MDI leads including those not used by the PD or PSE."
PSEEL8	Midspan PSE insertion in the channel.	33.4.8	Must provide continuity for signal pairs.	MID:M	Yes [ ] N/A [ ]	**Deleted from old table**
The sentence in 802.3-2005 has been **removed**; therefore this PICS statement is no longer valid. "A Midspan PSE inserted into a channel shall provide continuity for the signal pairs."