# Clause 104 Maintenance Requests

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# Overview

| Item | Updated? |
|---|---|
| $V_{sig\_disable}$ and $V_{PUP}$ Tracking | Yes |
| CRM $V_{REPORT\_PD}$ | No |
| DO_CLASSIFICATION: present_iwakeup <= FALSE | No |
| Post-sleep Classification Hook | No |

# $V_{sig\_disable}$ and $V_{PUP}$ Tracking Proposed Remedy

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**Table 104–5—Valid PD detection signature characteristics, measured at PD PI**

| Parameter | Conditions | Min | Max | Unit |
|---|---|---|---|---|
| $V_{good}$ | 7mA<$I_{PD}$<17mA, PD exiting RESET state | 4.05 | 4.55 | V |
| $I_{signature\_limit}$ | $V_{PD}$<$V_{sig\_disable}$ max | — | 24 | mA |
| $V_{sig\_disable}$ | $V_{PD}$ rising | 4.6 | 5.75 | V |
| $V_{sig\_enable}$ | $V_{PD}$ falling | 3.6 | 4.3 | V |

**Table 104–8—SCCP electrical requirements**

| Item | Parameter | Symbol | Unit | Min | Max | PSE/PD Type | Additional information |
|---|---|---|---|---|---|---|---|
| 1 | PSE Pull-up Voltage (Classes 0 to 9) | $V_{PUP}$ | V | $V_{good\_PSE\ max}$ | 5 | All | See Table 104–3 |
| | PSE Pull-up Voltage (Classes 10 to 15) | | | | 5.5 | | |

**Technical,** 802.3bu, Page 54, Table 104-5

## Comment

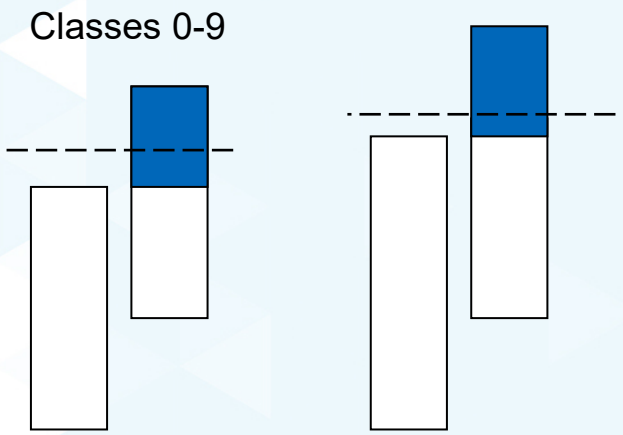
Transitions from DO_CLASSIFICATION to MDI_POWER1 pragmatically occur between $V_{PUP,max}$ and $V_{sig\_disable,max}$. In 802.3bu, for Classes 0-9, this decision region spans 0.75V. In 802.3cg, for Classes 10-15, $V_{PUP}$ changed to 5.5V, without a corresponding change to $V_{sig\_disable}$. The resulting decision region is reduced to 0.25V.

## Suggested Remedy

Modify 104-5 as follows, splitting $V_{sig\_disable}$ into two rows

**Table 104–5—Valid PD detection signature characteristics, measured at PD PI**

| Parameter | Conditions | Min | Max | Unit |
|---|---|---|---|---|
| $V_{good}$ | 7mA<$I_{PD}$<17mA, PD exiting RESET state | 4.05 | 4.55 | V |
| $I_{signature\_limit}$ | $V_{PD}$<$V_{sig\_disable}$ max | — | 24 | mA |
| $V_{sig\_disable}$, Classes 0 to 9 | $V_{PD}$ rising | 4.6 | 5.75 | V |
| $V_{sig\_disable}$, Classes 10 to 15 | $V_{PD}$ rising | 6.0 | 7.5 | V |
| $V_{sig\_enable}$ | $V_{PD}$ falling | 3.6 | 4.3 | V |



# Cable Resistance Measurement and $V_{Report\_PD}$

- For CRM, the PD is reports its voltage to the PSE so the PSE can perform a ΔV/ΔI calculation. Accuracy is +/-20mV.
- The existing +/-20mV tolerance requirement does not allow power coupling network resistance to be, optionally, measured
  - Removing the negative tolerance requirement allows greater design flexibility
  - Regardless any measurement error is capped by $R_{Cable}$, max and there is no risk to interoperability

- Change +/- to +

**Table 104–10—VOLT_INFO register table**

| Bit(s) | Name | Description | R/W[a] |
|---|---|---|---|
| b[15:8] | Reserved | Value always 0 | RO |
| b[7:0] | Voltage at PD PI during Presence Pulse | ~~+/-~~ 20 mV tolerance, 10 mV per LSB | RO |

[a]RO = Read only

# DO_CLASSIFICATION: present_iwakeup

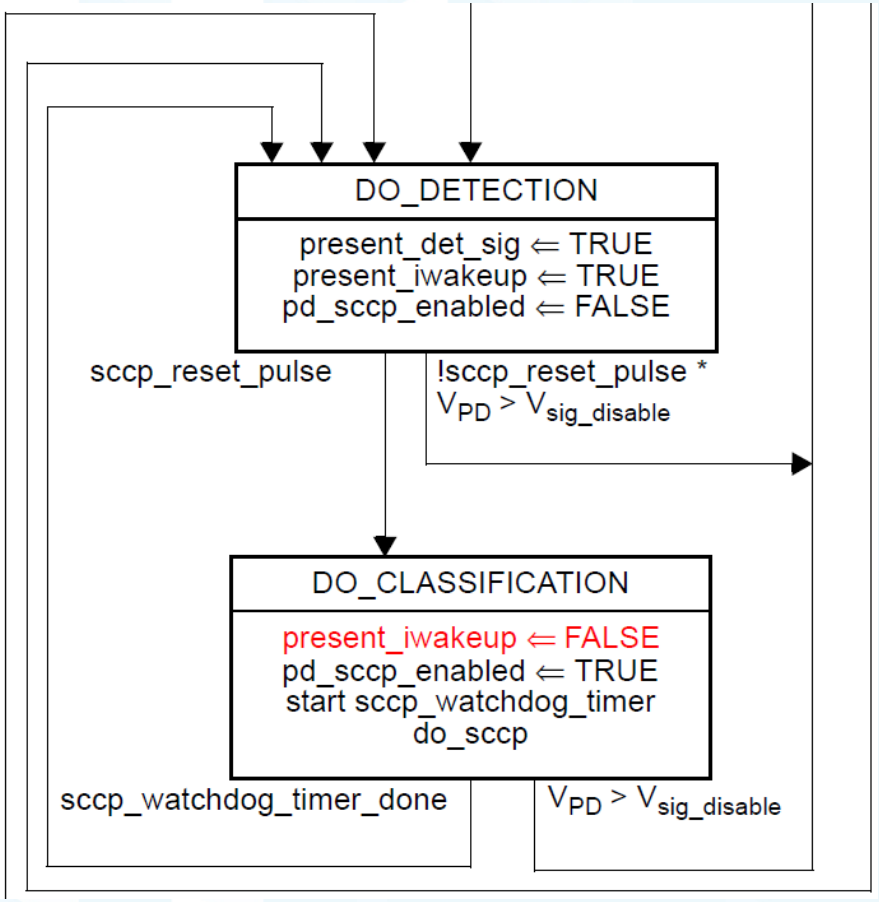
**Technical,** 802.3bu, Page 53, Figure 104-8

## Comment

The PD state machine, as written, requires present_iwakeup to be TRUE in DO_CLASSIFICATION based on an assignment derived from DO_DETECTION. During classification the PD is engaged in SCCP signaling and cannot simultaneously present the iwakeup signature.

## Suggested Remedy

Modify Figure 104-8 as follows, specifically setting present_iwakeup to FALSE in DO_CLASSIFICATION.



# Post-sleep Classification

**Technical,** 802.3bu, Page 53, Figure 104-8

## Comment

The PD state machine, as written, does not allow a PD to respond to SCCP classification on PD_SLEEP exit.

## Suggested Remedy

Change

wakeup

TRUE: the PD requires the full operating voltage at the PI.

FALSE: the PD is ready to go to sleep.

To

wakeup

An implementation specific variable enabling the PD to request wakeup. A PD supporting SCCP sets wakeup TRUE if sccp_reset_pulse is TRUE.

TRUE: the PD requires the full operating voltage at the PI.

FALSE: the PD is ready to go to sleep.