P802.3bt D3.0 – Fixes to the Autoclass state diagram v105

Info (not part of baseline)

There are mistakes in the Autoclass PSE and PD state diagram:

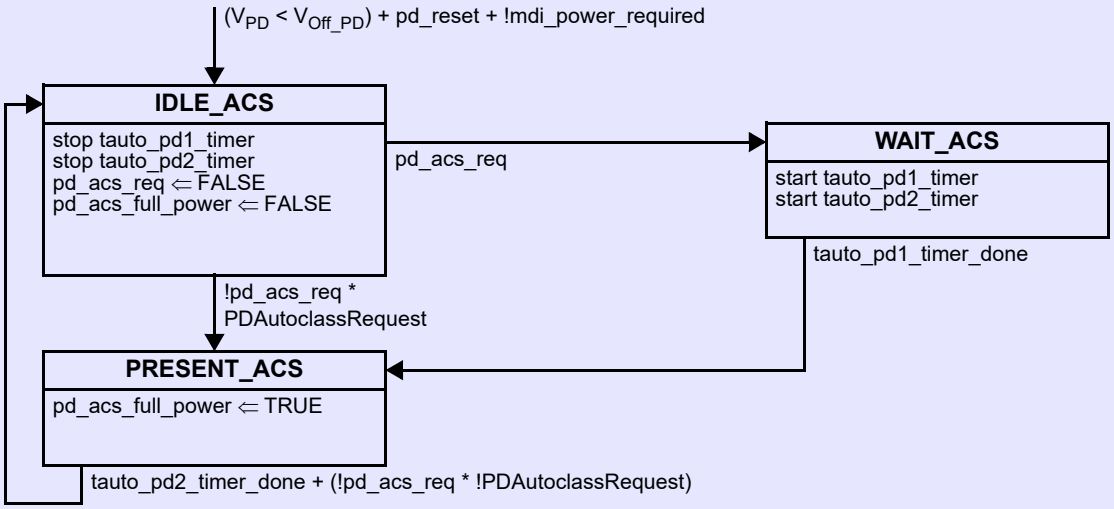

Figure 145–27—Single-signature PD Autoclass state diagram

Because pd_acs_req is set to FALSE in the IDLE_ACS state (which is executed continuously until $V_{PD} > V_{Off\_PD}$), the PD instantly forgets it has to do Autoclass based on Physical Layer. By clearing pd_acs_req in WAIT_ACS, we no longer can have a single PRESENT_ACS state because we can't distinguish the exit conditions.

On the PSE side there is a loop / race condition coming out of MEASURE_ACS. The MirroredPDAutoclassRequest gets reset to FALSE by the PD, but that takes time. When the PSE has concluded a measurement, it will go back to IDLE_ACS and immediately flip back into MEASURE_ACS. The solution is to make the PSE wait in MEASURE_ACS_DLL until the PD has cleared the MirroredPDAutoclassRequest.

As part of a wider problem in the DLL state diagrams: it is neccesairy to set 'Mirrored_*' variables prior to proceeding to states where those variables are read. If there hasn't been an incoming LLDPDU yet, the Mirrored variables have an undefined value and this causes undefined state diagram behavior.

145.2.5.7 State diagrams

Replace Figure 145–14 as follows:

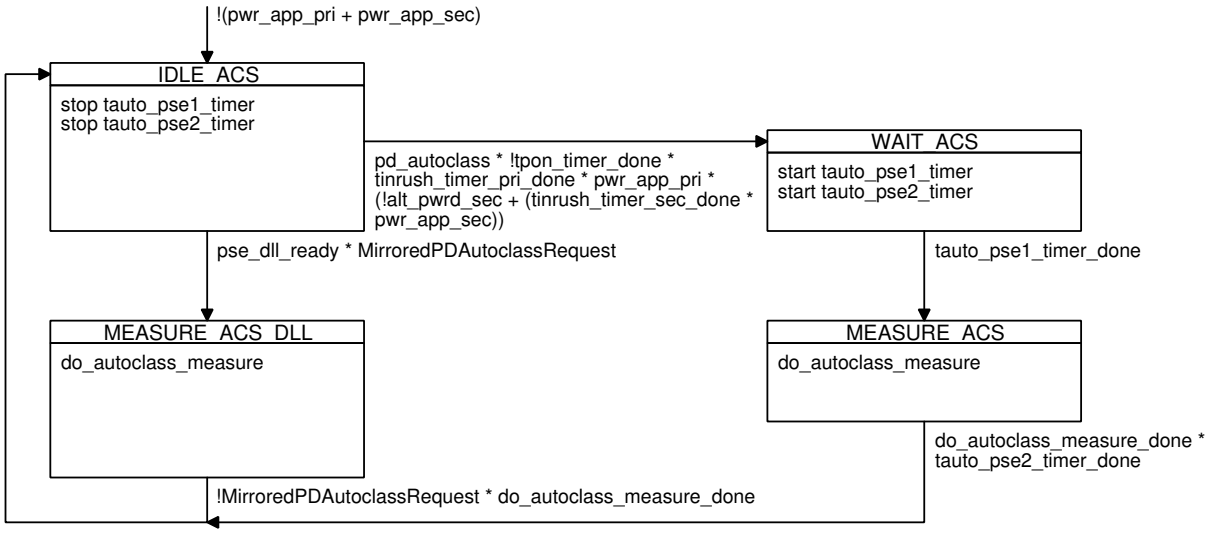

Figure 145–14 — PSE Autoclass state diagram

145.3.3.7 Single-signature PD state diagrams

Info (not part of baseline)

We now also need to reset pd_acs_req in the main state diagram to prevent an issue with PD resets happening after DO_CLASS_EVENT_AUTO but prior to INRUSH.

Add the following statements to the IDLE state in Figure 145–26:

pd_acs_req ⇐ FALSE

Replace Figure 145–27 as follows:

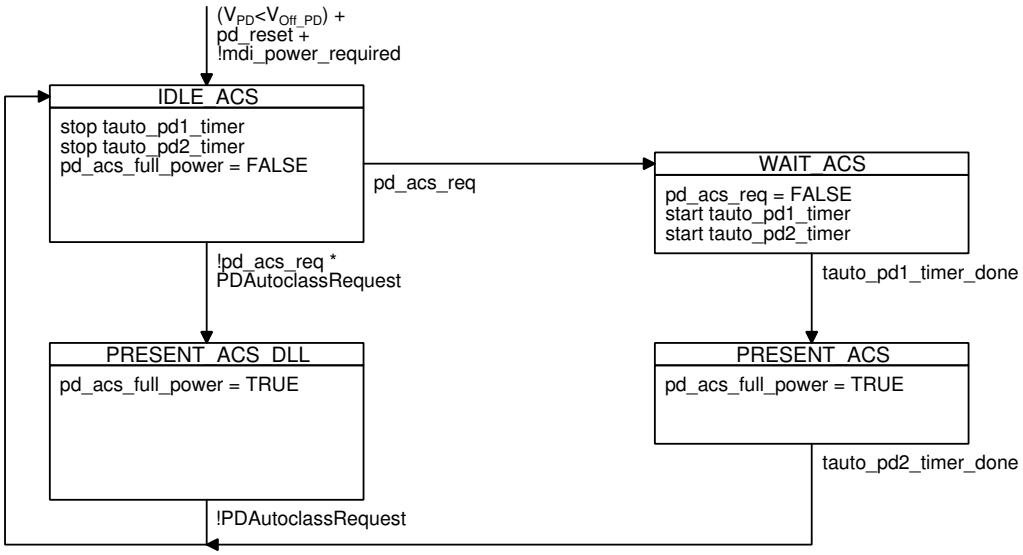

Figure 145–27 — Single-signature PD Autoclass state diagram

145.5.3.4.5 State diagrams

Replace Figure 145–42 as follows:

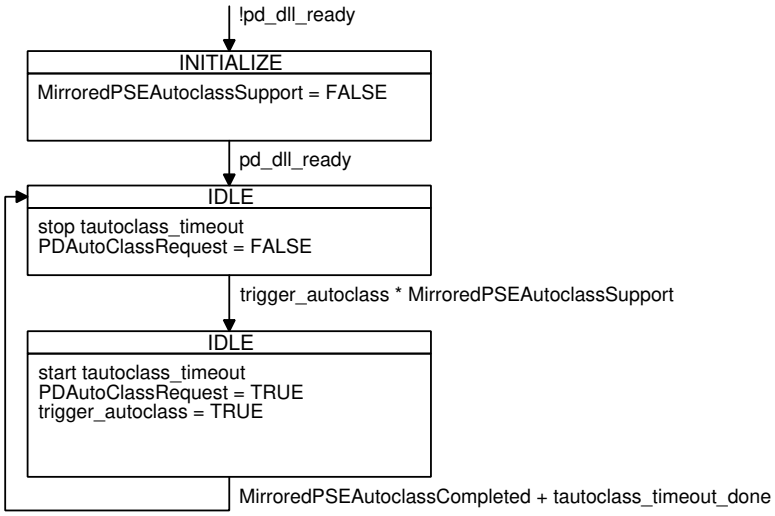

Figure 145–42 — PD DLL Autoclass control state diagram