PSE State Diagram (#289, #291)

David Stover

Comment #289 – "alt_pri" usage

- **Problem:**

  - Descriptions of Primary/Secondary Alternative assignment in text (33.2.5.1.1) and PSE SD are inconsistent.

- Text:

  - "In any implementation, the behaviors of the Alternatives may be reversed as long as the roles are established in IDLE and shall be maintained in every other state."

- PSE SD:

  - The definition of alt_pri is assigned in IDLE and in TEST_MODE.

  - The assignment of alt_pri is forced to "a" in TEST_MODE, though the desired behavior is likely "user-defined".

  - When pingpong_en==TRUE, assignment of alt_pri in IDLE depends on previous value, but alt_pri initial value is unspecified.

Comment #289 – "alt_pri" usage, cont'd

- **Observations**

- alt_pri is never directly sampled in PSE SDs
  - Definition of the Primary and Secondary Alternatives, as used by related variables (eg, "pwr_app_pri", "det_once_sec"), is an <u>inferred behavior</u>

- PSE State Diagram has an established method to handle inferred behaviors

- Example of inferred behavior: ovld_detected
  - ovld_detected == TRUE when "the PSE has detected an overload condition."
  - How is overload condition threshold assigned?
    - Not by PSE SD
    - Wholly described in text
    - "ovld_detected" variable definition includes "See 33.2.8.7"

Comment #289 – "alt_pri" usage, cont'd

• **Remedy:**

• Modify text in 33.2.5.1.1 as follows:

- •"In the Type 3 and Type 4 state diagram, Alternative A and Alternative B are depicted as serving distinct roles during 4-pair operation. In any implementation, the behaviors of the Alternatives may be reversed as long as the roles are established in IDLE or TEST_MODE and shall be maintained in every other state. In the state diagram, the alternatives are named the Primary Alternative and the Secondary Alternative."

• Modify "pse_alternative" variable definition as follows:

- •"… both: The PSE uses both Alternative A and Alternative B. Assignment of Alternative A and Alternative B to Primary and Secondary Alternative is user-defined. See 33.2.5.1.1."

• Remove alt_pri, pingpong_en from Type 3 and Type 4 PSE variables (33.2.5.9)

Comment #291 – "SEMI_PWRON_*"

- **Problem:**

  - "SEMI_PWRON_PRI and SEMI_PWRON_SEC bypass POWER_DENIED, which is inconsistent with behavior of "!power_available" arc out of POWER_ON state."

Comment #291 – "SEMI_PWRON_*", cont'd

• **Remedy:**

• Replace Figure 33-15 (Page 96) as shown