PSE State Diagram Updates

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Problem Statements

- DC MPS state diagram can be expressed with a single timer and the existing MPS present/absent variable for all defined methods of MPS monitoring

- PSE SISM state diagrams do not support *optional feature* of port power removal by the PSE in the event of a fault on one pairset.

  - 33.2.8 - Power supply output

    "When the PSE provides power to the PI, it shall conform with Table 33–17. Table 33–17 values support worst-case operating conditions. These ranges may be narrowed when additional information is known and applied in accordance with this specification. ***Power may be removed from both pairsets any time power is removed from one pairset."***

DC MPS – Observations

- Existing variable definition of mr_mps_valid encapsulates all defined methods for measuring I_{Hold} in MPS present/absent as defined in 33.2.10.1.2

    - 33.2.5.9 – Type 3 and Type 4 Variables

        - mr_mps_valid

            - The PSE monitors the Maintain Power Signature (MPS, see 33.2.10.1). This variable indicates the presence or absence of a valid MPS.
            - Values:
            - FALSE: MPS is absent.
            - TRUE: MPS is present.

- Only one MPS state diagram and MPS timer required to observe PSE MPS rules for one or both pairs powered (ie Main or SISM state diagrams)
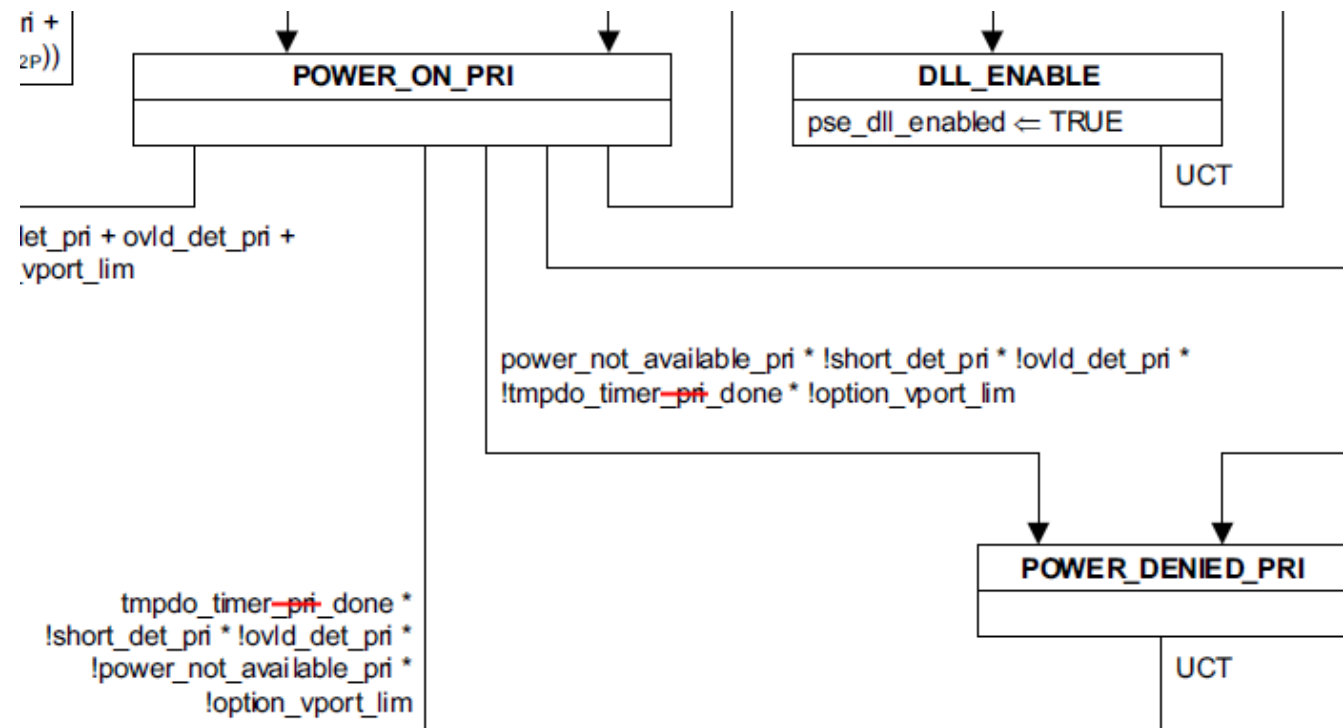
DC MPS – Proposed Solution
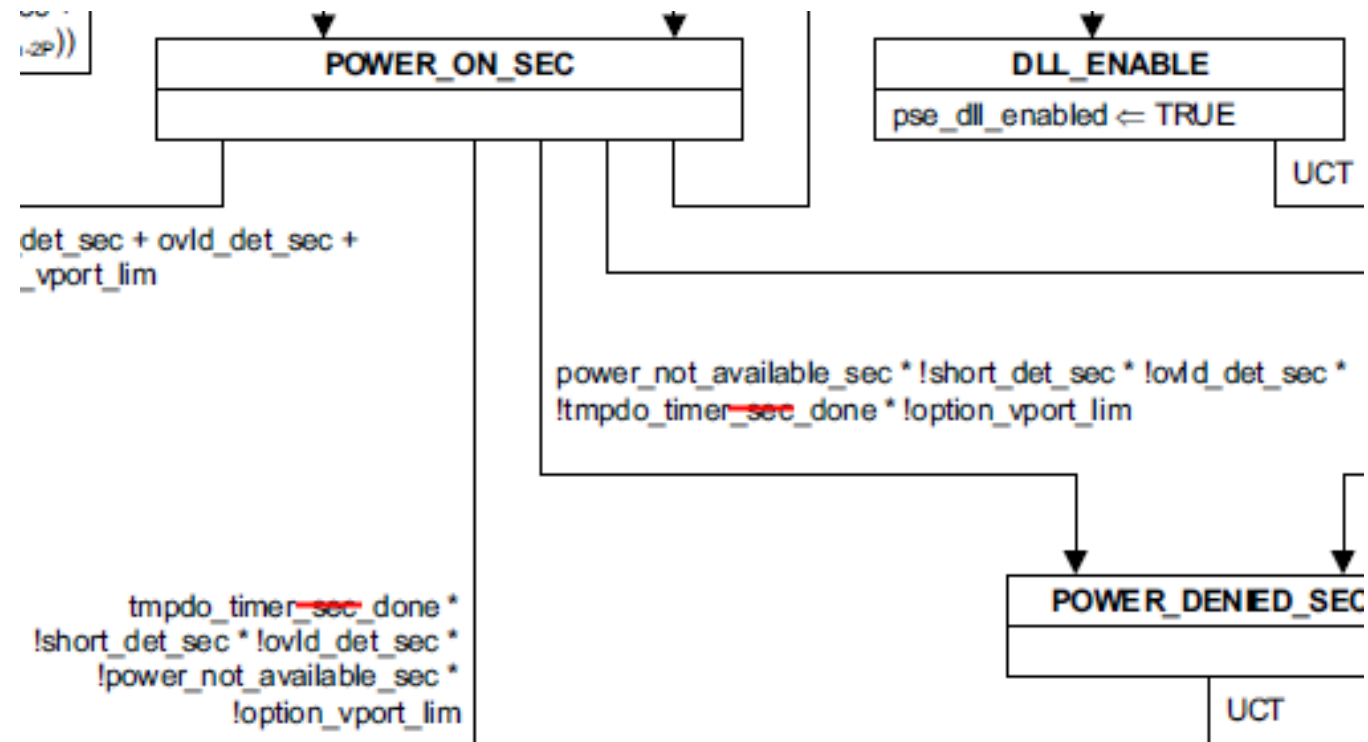
- Replace Figure 33–22 with the following:
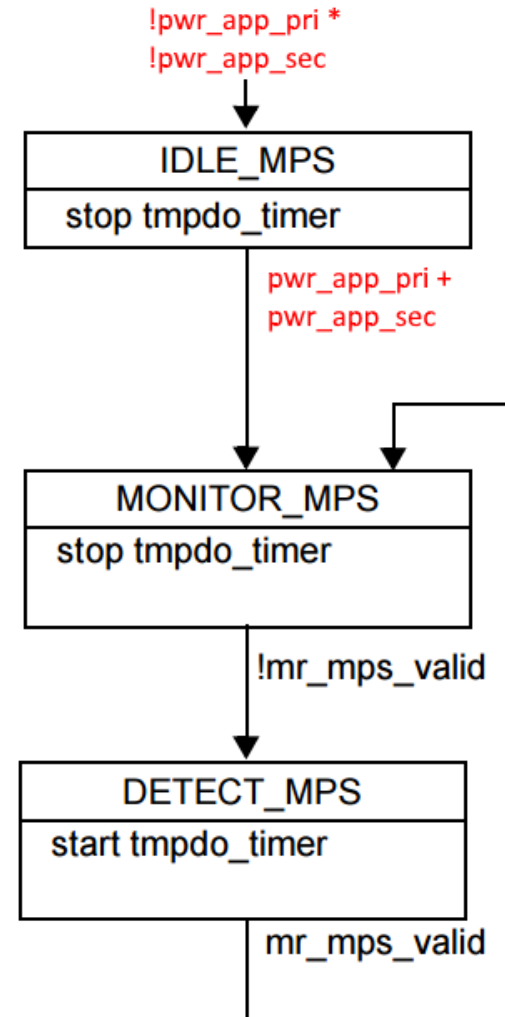
DC MPS – Proposed Solution, cont'd

- Modify Figure 33–17:

DC MPS – Proposed Solution, cont'd
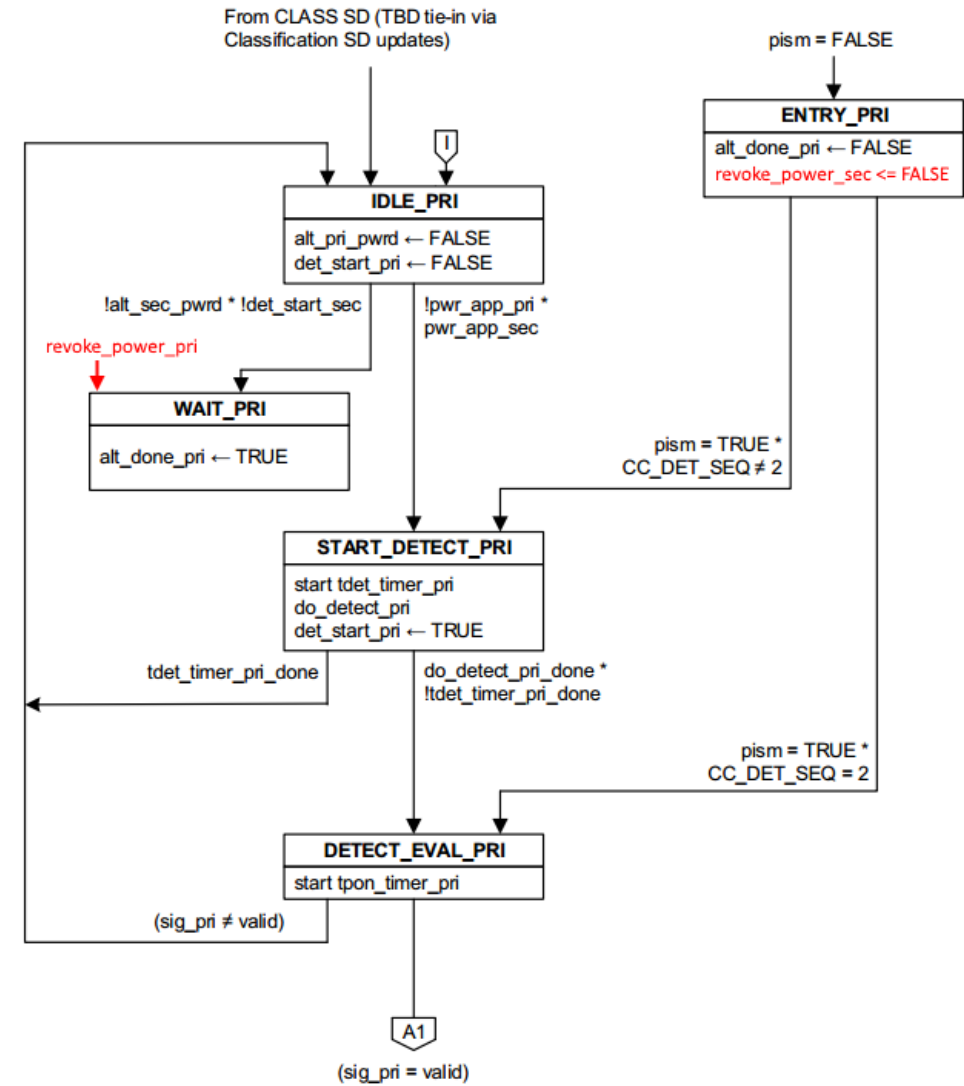
• Modify Figure 33–18:

DC MPS – Proposed Solution, cont'd

- Modify section 33.2.5.9:

- ~~mr_mps_valid_pri~~
  - ~~The PSE monitors the Maintain Power Signature (MPS, see 33.2.10.1) on the Primary Alternative. This variable indicates the presence or absence of a valid MPS.~~
  - ~~Values:~~
    - ~~FALSE: MPS is absent.~~
    - ~~TRUE: MPS is present.~~

- ~~mr_mps_valid_sec~~
  - ~~The PSE monitors the Maintain Power Signature (MPS, see 33.2.10.1) on the Secondary Alterna-tive. This variable indicates the presence or absence of a valid MPS.~~
  - ~~Values:~~
    - ~~FALSE: MPS is absent.~~
    - ~~TRUE: MPS is present.~~

- ~~tmpdo_timer_pri~~
  - ~~A timer used to monitor the dropout of the MPS on the Primary Alternative; see TMPDO in Table 33–17.~~

- ~~tmpdo_timer_sec~~
  - ~~A timer used to monitor the dropout of the MPS on the Secondary Alternative; see TMPDO in Table 33–17.~~
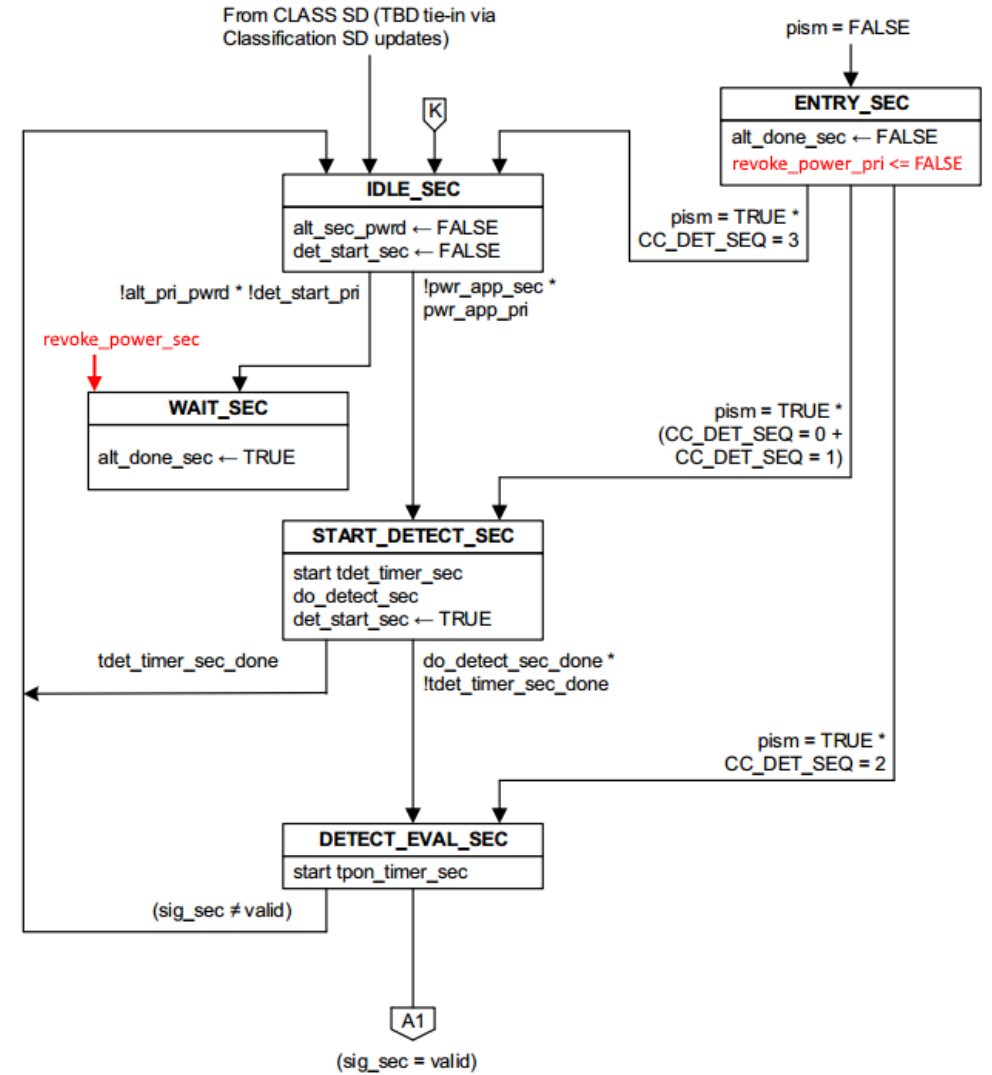
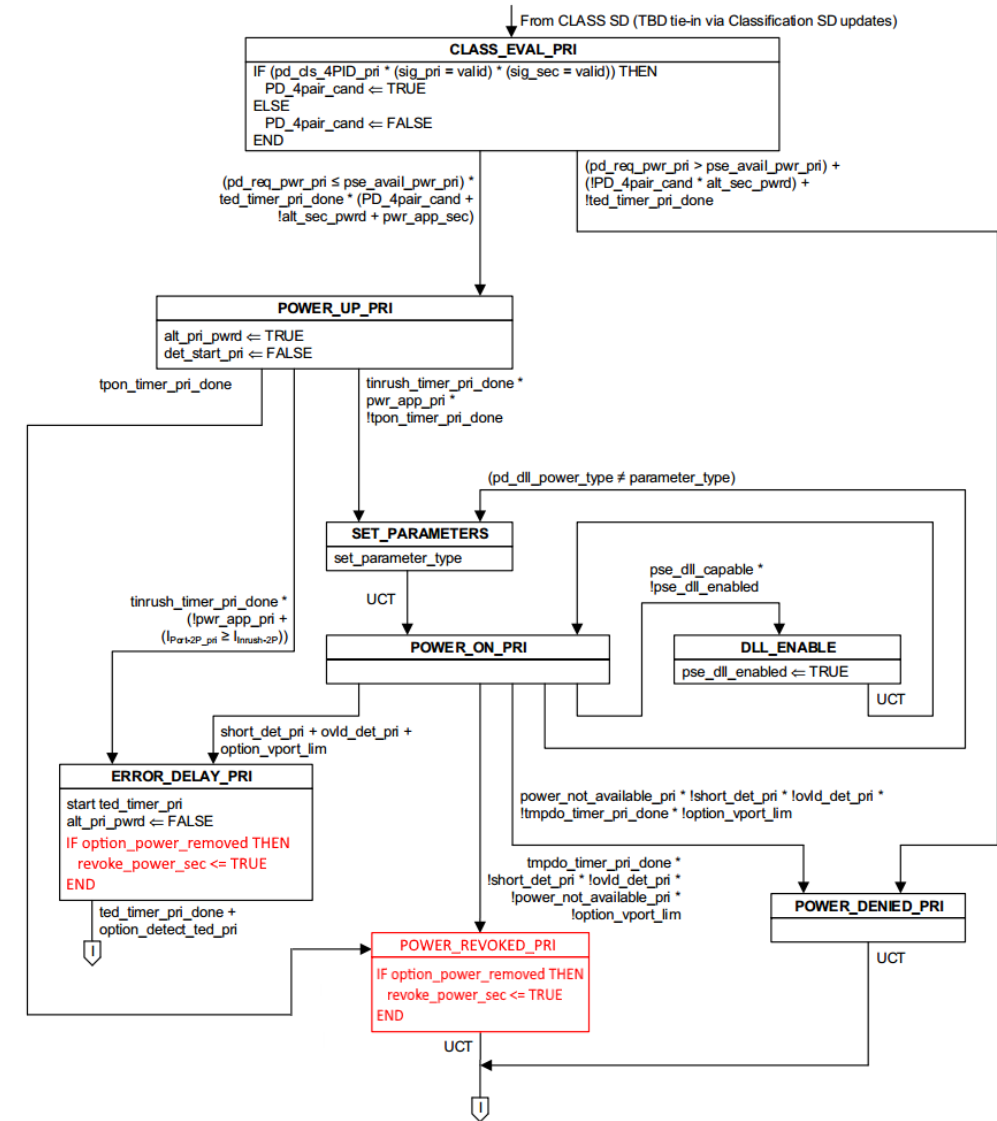# Optional Power Removal – Proposed Solution

• Modify Figure 33–16:

Optional Power Removal – Proposed Solution, cont'd
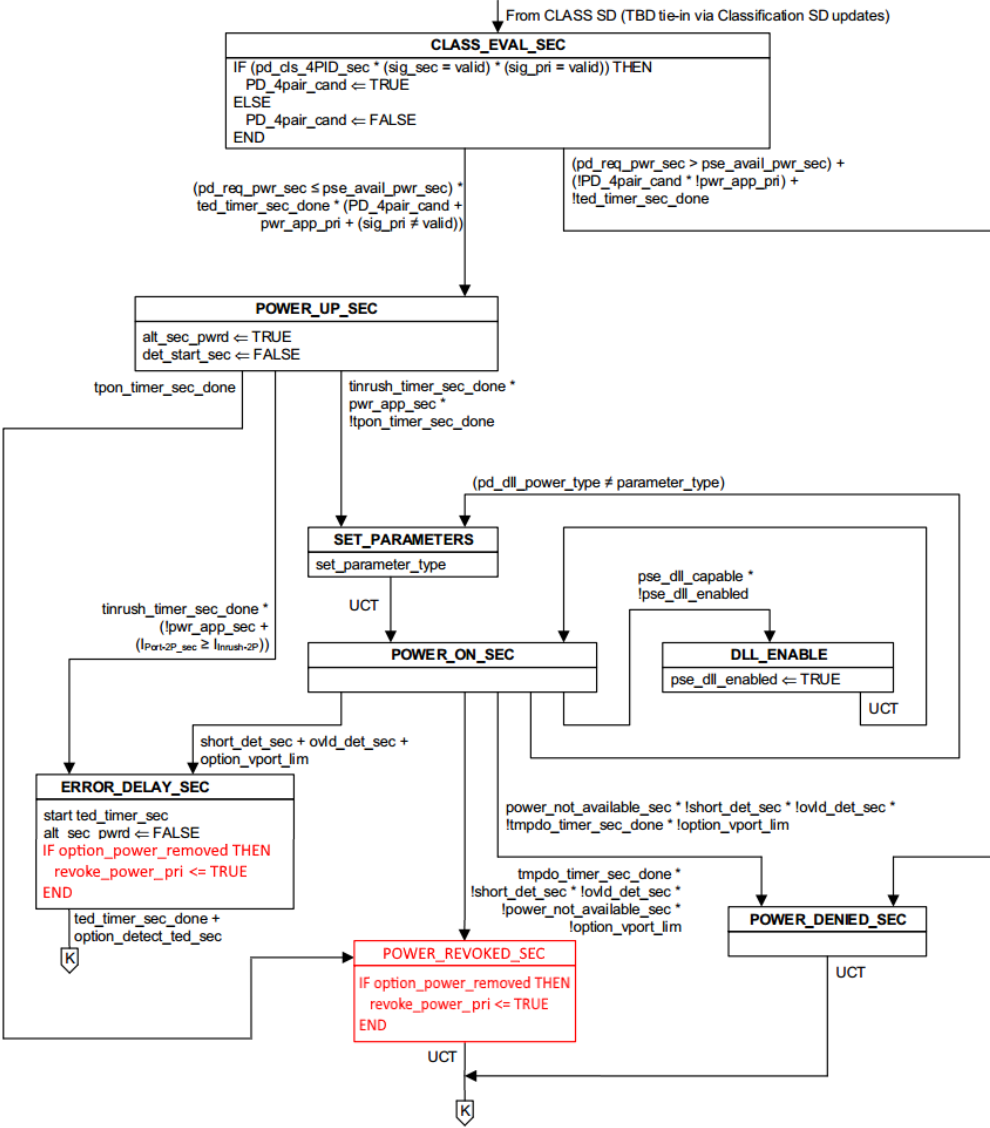
- Modify Figure 33–18:

Optional Power Removal – Proposed Solution, cont'd

• Modify Figure 33–17:

Optional Power Removal – Proposed Solution, cont'd

• Modify Figure 33–18:

Optional Power Removal – Proposed Solution, cont'd

- Add the following to 33.2.5.9:
  - option_power_removed
    - This variable indicates if the PSE will to remove power from the port in the event that power is removed on any pairset.

      Values:
      - FALSE: Do not remove power from the PI when power is removed from any pairset.
      - TRUE: Remove power from the PI when power is removed from any pairset.
  - revoke_power_pri
    - This variable signals the primary alternative state machine to revoke power from the primary pairset.
  - revoke_power_sec
    - This variable signals the secondary alternative state machine to revoke power from the secondary pairset.