

# 4PID Ad hoc – Review (with notes)

IEEE 802.3: 4PPOE Task Force  
4PID Ad Hoc

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# Overview

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- Where we stand in 4PID ad hoc
- Agreed approaches
- What is assumed in 4PID discussion
- Modifications to the PSE state machine to support 4PID

# Where we stand in 4PID ad hoc

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- 2 basic PD types:
  - YD: Classifying by “signature” is not fully accurate, it refers more to sig + class + load
  - Option 1: single Rsig
    - YD: Single LOAD is important
  - Option 2: dual Rsig
    - Comes as 2 types, single vs. dual loads
  - YD/DD – question is how to word without getting implementation-specific
- Converging discussion
- No integration into Figures 33-9 (PSE) or 33-11 PSE state machines
- This presentation attempts to summarize proposals and see what we can adopt

# What is assumed in 4PID discussion

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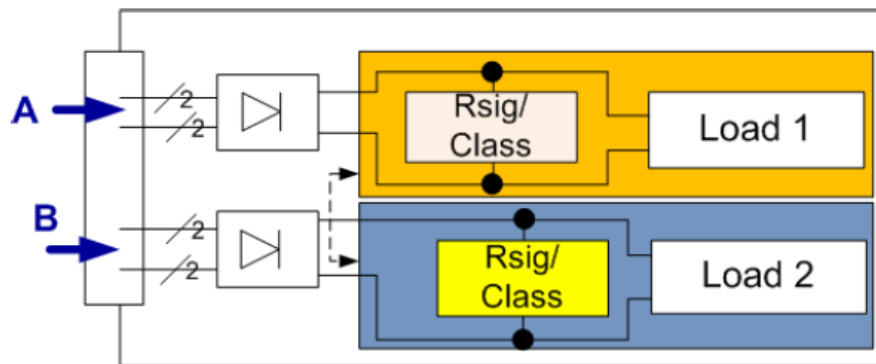
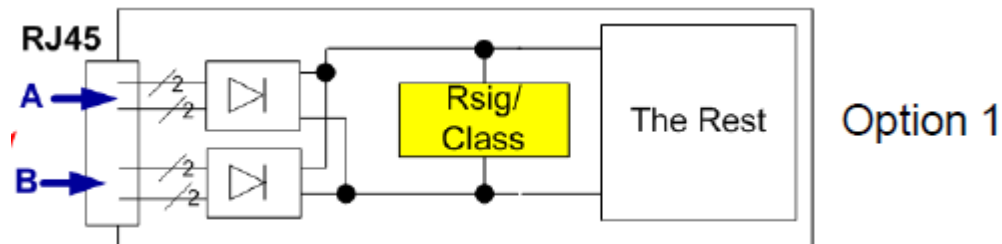
- PD state machine is fixed for legacy PDs
- 4PID can modify PSE state machine in responding to PD state machine
- *Assume all modifications are in the PSE state machine*
  - *PD state machine may be clarified, but not modified for 4PID of legacy Type 1 and Type 2 devices*
  - *Additional 4PID may be added to Type 3 or 4 if necessary*
- 4PID is a 2 part process:
  - Differentiate invalid vs. single sig vs. dual sig via detection protocol modified at the PSE
  - Differentiate 4p capable single sig or dual sig PDs via additional criterion

# 4PID as part of do\_detect

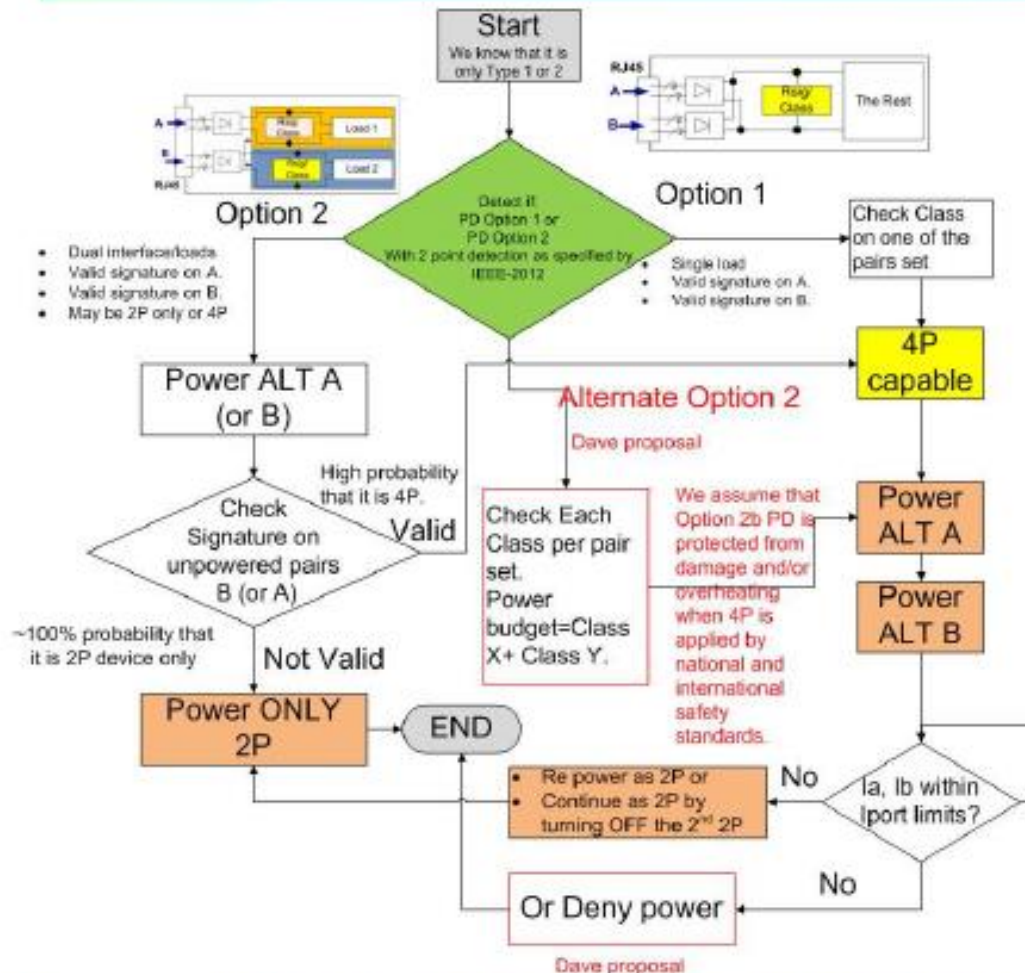
## Differentiate Invalid vs. single sig vs dual sig

- darshan\_11\_1114\_rev\_07.pdf (darshan\_11)
  - Modifies detection sequence to include 1st part of 4PID
    - Differentiate option 1 vs. option 2 PDs (slide 15)
      - Figure 33-9 changed to specify simultaneous detection
      - Invalid signatures get extra steps to detect option 1 or true “invalid”
      - Valid signatures go to extra states for Option 2a/b differentiation
  - We seem to have agreement on this part, but not on the following steps to differentiate Option 2a/2b

# “Option 1 & Option 2” PDs (darshan\_11)



# Option comparison (darshan\_11)



Green decision block and Option 1 branch appear agreed, assuming "Power ALT A" & "Power ALT B" blocks may either be joint or sequential (YD: agreed)

- Alternative Option 2 is marked red.



# Next step – 4PID in Classification

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- One approach looks at unpowered pair sig
- One approach looks at class signature
- Both 4PID branches involve going to power on and checking  $I_a + I_b < I_{port}$ 
  - One has fallout to retry 2P power
  - One has fallout to `POWER_DENIED`
  - BOTH can be allowed, retry is NOT 4PID



# Discussion/Presentations

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- What do we agree on?
- What do we disagree on?
- What work is needed to move forward?