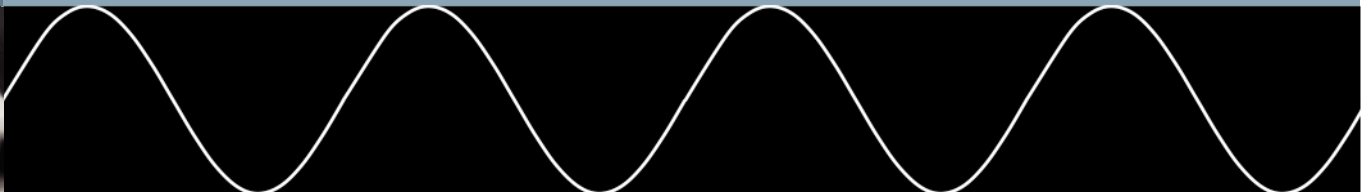# LLDP Optional in T3/T4 PDs

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802.3bt Atlanta Jan 2015

What is LLDP?

- "LLDP" in this presentation refers to Data Link Layer Classification, defined in 802.3-2012 33.6

- This is incorrect usage of the term "LLDP" but it is the term generally used in the field for DLL Class – so I used it here

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LLDP Should be Optional for T3/T4 PDs

- LLDP was not required in AF

- LLDP is currently required for AT PDs (optional in PSEs)

  - This was added due to a temporary absence of 2-finger PSE chips in the market

  - The majority of AT PD designs (by number, not by sales) ignore this requirement

  - It weakens the standard when part of it is widely ignored

- The original intent of PoE was to push cost from the PD to the PSE

  - Mandatory PD LLDP goes against this

- To address these issues, LLDP should be optional for T3/T4 PDs

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T3/T4 Physical Layer Classification

- This proposal only makes sense if Physical Layer Classification has adequate capability

- Current T3/T4 class 4/5 finger proposals seem to meet this requirement
  - Further resolution can be added if needed
    - yseboodt_1_0913.pdf p.6
    - dwelley_02_0914.pdf p.8-9

- LLDP would always remain optional for systems that can take advantage of finer class resolution

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Why do PD Vendors Skip LLDP?

- LLDP is difficult to implement in the PD in several cases
  - Existing non-PoE device retrofitted to include PoE (data subsystem not changed)
  - Any PD with >13W CPU
  - Any PD with no PHY (low-feature lighting, for example)
  - PD power extractors

- LLDP is not useful to Midspan PSEs
  - Power-intensive applications where Midspans are attractive economically (cameras, lighting, femtocells) can't take advantage of LLDP class

- Physical Layer Class is a complete, low-cost solution for power classification that avoids all these concerns

So… LLDP should be Optional for T3/T4

- It is useful in many cases and should be defined

- It is difficult or impossible to implement in other cases and should not be required

- T2 need not be changed

  - Note that removing the T2 PD LLDP requirement doesn't make anything in the field non-compliant

  - T3/T4 PSEs that don't include LLDP functionality will operate exactly like T2 PSEs that don't use (optional for T2 PSEs) LLDP – full interoperability is maintained

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Side Benefits

- Making LLDP optional for T3/T4 PDs simplifies Table 33-8 (and potentially Table 33-3)

- Making LLDP optional for all PD types further simplifies the two tables as well as the state machines

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Motion

- LLDP shall be optional for T3/T4 PDs

- Moved: Dwelley
- Second: xxxxxxx

- Y/N/A