

IEEE P802.3at DTE Power Enhancements Task Force

Classification Ad Hoc Status Report

9-18-06 Knoxville

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IEEE P802.3at Classification Ad Hoc

This summary is based solely on Clay's recollection of the events, decisions, and desires of the ad hoc group. I encourage ad hoc participants to speak up if they feel I have omitted important information.

- **6 meetings via teleconference ending 9/13/06, each approximately 1 hour long.**
- **Summer vacations limited progress.**

Typically around 15 participants. Common attendees listed here. (Let me know if I have missed your name.)

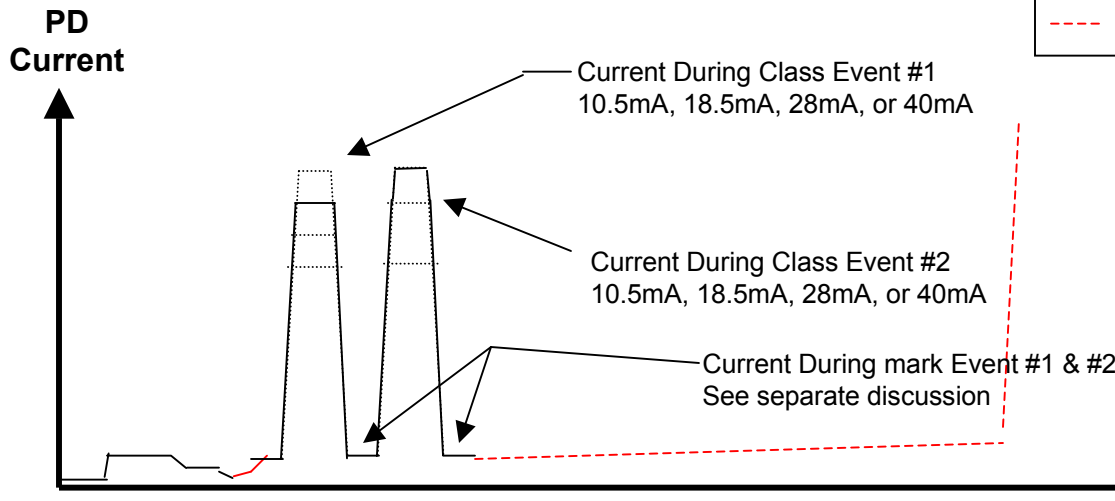
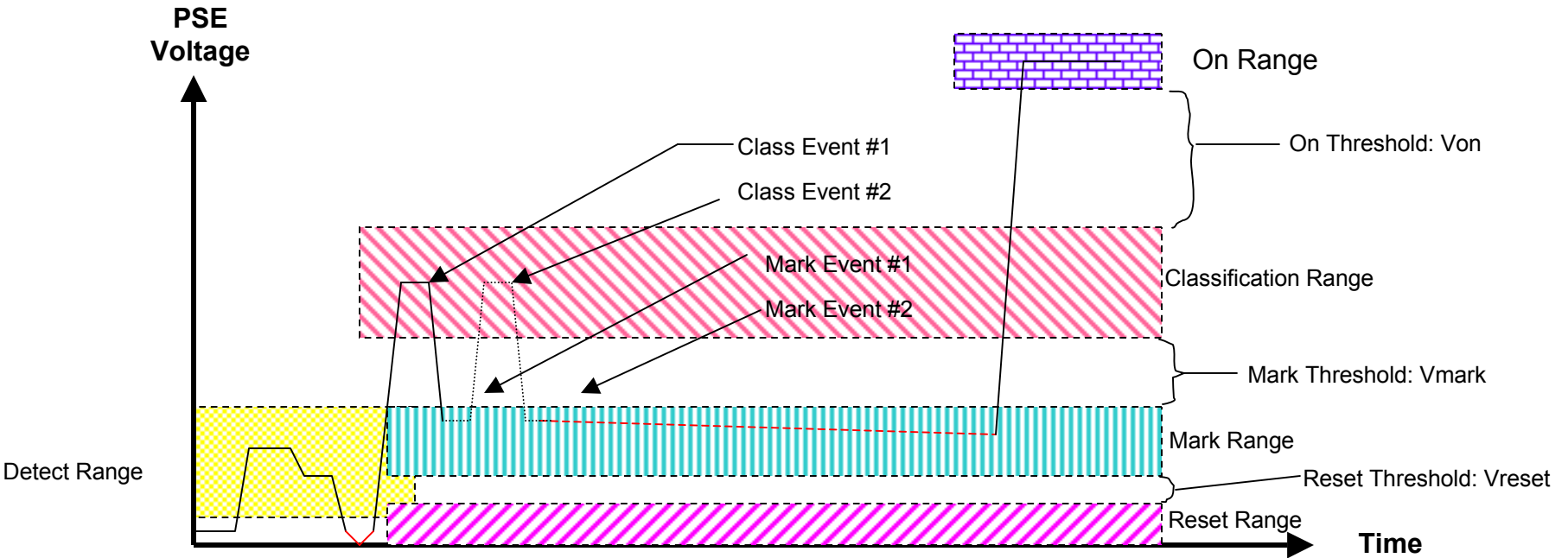
David Law	Yair Darshan
Sajol Ghoshal	Daniel Feldman
Taufique Ahmed	Matt Landry
Wael Diab	Steve Robbins
Chad Jones	Martin Patoka
Hugh Barrass	Dan Dove
Ramesh Sastry	George Claseman
Thong Huynh	Frank
Geoff Thompson	John Yates
Joe DeNicholas	Jan Krellner
Keith Hopwood	Fred Schindler
Rick Frosch	Christian Beia

Making Headway!!

Several Classification Motions Have Passed:

- Layer 1 classification will be limited to no more than 10 classes including the existing .af classes.
- Lowest Power Class will be 2W.
- The P802.3at Task Force will add at least one L1 class between the existing 7W and 15.4W classes.
- The P802.3at Task Force defined L1 classification power levels will not exceed the maximum power level as determined by the 802.3at committee.
- **The P802.3at Task Force will use the 2-Event L1 Classification mechanism as shown on p.6 stanford_1_0706.pdf.**

2-Event Classification



Late Breaking News!!!
 Updated voltage, current and timing specifications will be presented later this week. Stay tuned...

New Motions

The Following to be Presented this Week:

- The P802.3at Task Force requires mutual identification:
 - An AT-PD must be able to distinguish between an AF-PSE and an AT-PSE
 - An AT-PSE must be able to distinguish between an AF-PD and an AT-PD.
- Classification will be mandatory in both the AT-PD and AT-PSE in order to implement mutual identification.
 - An AT-PD must support both layer 1 and layer 2 classification.
 - An AT-PSE may implement classification on either or both layers 1 and 2. **Done previously, need to find text**
- The P802.3at Task Force states that the layer 1 classification method will support midspan and endpoint PSEs.
- The P802.3at Task Force will make allowance for future expansion of the classification mechanism.

What Will Stay the Same?

- Detection using a 25K signature resistance will be identical to 802.3af.
- Class policing (i.e. PSE limiting low-power PDs to their advertised power) will remain optional as in 802.3af.

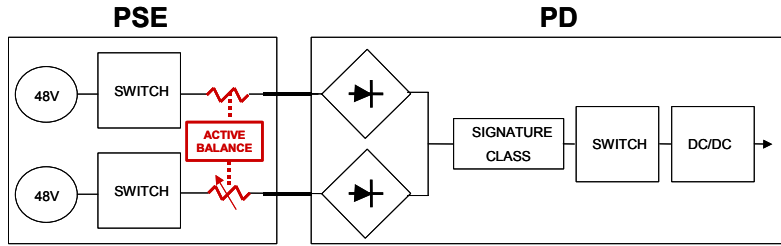
What Is Not Allowed?

- Adding more information into classification such as vendor ID.
- Advanced power management in layer 1, for example dynamic power allocation.

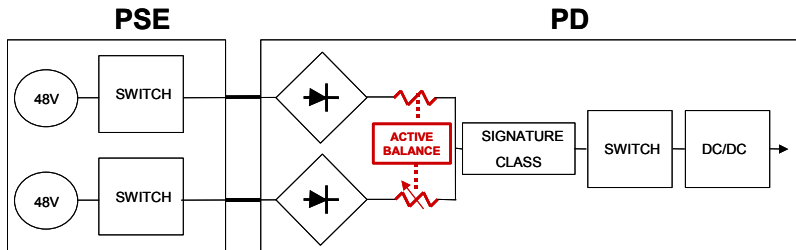
2-Pair/4-Pair

Outstanding Issue Not Yet Resolved:

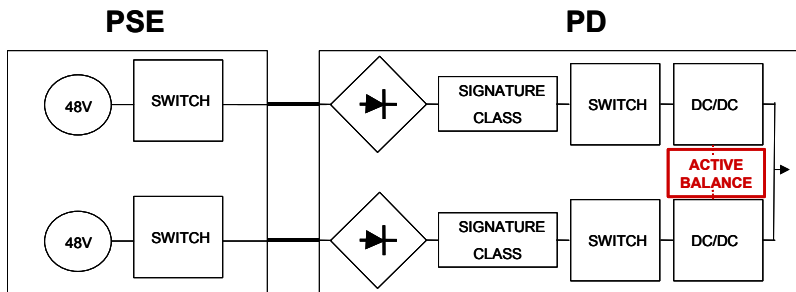
- Is 4-Pair systems defined in 802.3at
- If so, what is the architecture?
 1. Balancing in PSE
 2. Balancing in PD front end
 3. Two independent 2-pair systems



1. Balance in PSE
 PSE balancing allows same PD schematic for .af, .at2P and .at4P implementations



2. Balance in PD Front End
 Allows single signature/class front end
 4P PD (?~30W) is compatible with 2P & 4P PSEs



PD Back End balancing is low loss but requires 2 DC/DC Converters!
 3. Balance PD Back End

Issues Still Needing to be Resolved

- ✓ ~~• Classification voltage, current, and time specifications~~
- Single or dual signature for 4-pair PD
- Classification power levels
- What hardware configurations should be supported (I.E. midspan +endpoint,etc)