4pair Interoperability

4p adhoc IEEE 802.3at
March 13th,2008
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Market Interoperability concerns

- Current Permutations defined by Yair March 6th,2008 have 10permutations will mean many combinations won't work

#	PSE Port	PD type	PD load	Cable	Requires Current Sharing
1	Type 1	Type 1 (O,5C)	single	2P or 4P	
2	Type 2	Type 1(O,5C) Type 2	single	2P or 4P	NO
3	2XType 2 (Same port, box, Ground and	Type 1(O,5C)	single	2P or 4P	
		Type 2		2P o 4P	
4	Voltage Diff <TBD= ENV A)	2 x Type 2	Single	4P	
5			Dual independent		

#	PSE Port	PD type	PD load	Cable	Requires Current Sharing
7	2 x Type 2 (Environment B)	2 x Type 1 2 x Type 2 Y-Cable	Dual independent	4P	NO
8	2 x Type 2 (or 2x802.3af)	2 x Type 2	Single	4P	NO.
9	(Environment B)				

#	PSE Port	PD type	PD load	Cable	Comments
9	802.3af	Type 2	single	2P or 4P	-May not work (We know…) - Remedy 1: See below -PD indication is issued. (O)
		2 x Type 2	Single or Dual	2P or 4P	-May not work (We know…)
10	Type 2	2 x Type 2	Single	4P	- Remedy 2: See below -PD indication is issued. (O)

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Impact of 10 combinations

- Many combinations will not work
  - Fundamental PSE is not right type/ enough power for PD
  - How does installer ensure multiple sources have enough power from multiple PSEs with Power Management or multiple sources
  - How do manufacturers specify compatibility?

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Other Interoperability issues from 10permutations

- How long does PD wait for all power sources to power up before it decides not enough power (Traps on layer 2)

- Complexity to system management when ports shut down due to power management

- 40% of Endpoints may have ALT B source(Even if true market population is less there will definitely be stuff that does not work together that meets 802.3)

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Proposal for allowable 4Pair Scenario

- Allow flexibility for PD designers
- Make the PSE definitions simple
  - TYPE 1   IEEE802.3af 2pair 15.4W
  - TYPE 2   IEEE802.3at 2pair 36W

    (or as approved "at")

  - TYPE 3 2 x IEEE802.3at pairs from the same source(2 times power of "at")

  This should be the only 4pair scenario not forbidden in the standard

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