Vport ad hoc
SOA D0.9 comment resolution

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Tim Parker	Nortel Networks
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Two ad hocs with an average attendance of 17 people since the last IEEE meeting.
People that attended since the last IEEE meeting are shown in **bold.**

Agenda

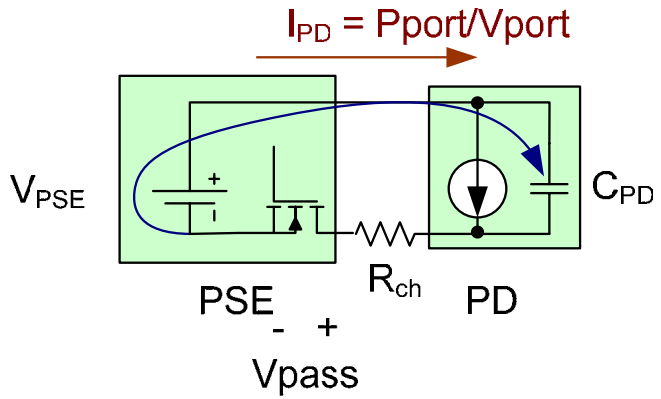
- **Recommendations for the SOA-comment bucket.**
- **Next step.**

D0.9 Comments 178, 137

- **Page 25, line 50**
- **“A PSE in the power on state may remove power from the PI when the PI voltage no longer meets the Vport specification.”**
- **Add San Francisco due to a Vport ad hoc motion**

All present; Y: 30 N: 0 A: 4

802.3; Y: 19 N: 0 A: 0 => PASS



Worst-case
Rch = 0
Vpse goes from 50 to 57 V
Vpass goes from 0 to 7 V
I_{PD} = 400/350 x Pport/Vport

Recommend resolution to 178, 137

- **Leave text as is.**
- **All present; Y: 18 N: 0 A: 0**
- **Peter withdraws comment.**
- **Clay withdraws comment.**

D0.9 Comments 11 and 111

- **Page 28, Line 39**
- **“If a short circuit condition is detected, power removal from the PI shall begin within TLIM and be complete by TOFF, as specified in Table 33-5. See Figure 33C.4 [p90]and Figure 33C.6[p92].”**
- **This is legacy text.**
- **Figure 33C.4 [p90] should be replaced by Figure 33-9a [p28] for power-on operation.**

Recommend Resolution to 11, 111

- **Combine sections 33.2.8.8 and 33.2.8.9.**
- **TLIM defined by the SOA curve Figure 33-9a.**
- **The system needs to operate below the SOA curve.**
- **Expect to have SOA, PD, and PSE requirements on Figure 33-9a.**
- **All present; Y: 18 N: 0 A: 0**
- **Matt and Yair accept this resolution.**

Comments 78, 96

- **Page 27, Line 43**
- **“Power shall be removed immediately from the PI of a type 2 PSE if the PI current exceeds the Safe Operating Area (SOA) upper bound template in Figure 33-9a.”**

Recommended Resolution 78, 96

- **"Power shall be removed ~~immediately~~ from the PI of a type 2 PSE before ~~if~~ the PI current exceeds the Safe Operating Area (SOA) upper bound template in Figure 33-9a."**

- **All present; Y: 18 N: 0 A: 0**
- **Yair accepts this resolution.**
- **Dan ??? this resolution.**

Recommended Resolution 122

- **Accept remedy.**
- **All present; Y: 18 N: 0 A: 0**

Cl **33** *SC* **2.8.8** *P* **27** *L* **49** # 122

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **X** *soa*

Change the Fusing equation in a way that refect all its parameters.
See "Fusing equation: how it was derived in 802.3af" presentation for September 2007 for more details.

SuggestedRemedy

Change from I=(0.025/t)^0.5
To: Iport=(K/t)^0.5
Where
Iport is the current at the PI
t is the duration that the PI sources Iport
K is a 25mJoul energy limitation of the port current when it is not in steady state normal operation.

Yair accepts this resolution.

Comment 185

Cl **33** *SC* **2.8.8** *P* **27** *L* **33** # 185

Schindler, Fred — Cisco Systems

Comment Type **TR** *Comment Status* **X** *soa*

This section needs to be modified in order to permit PSE to reach current levels just below the SOA described in figure 33-9a.

SuggestedRemedy

If a PSE provides current that meets system safe operating (SOA) requirements, IEC 60950, and PD minimum power needs, then safety and interoperability are met with fewer design requirements imposed. Within the region between PD current needs and SOA current limits, a PSE system selects the design (current limit, current cut-off, and duration) that meets its markets needs. See Vport ad hoc current limit presentations for the latest proposed system current vs time limits.

Suggested remedy:
Type-1 PSE can power as described in this section.

Add, Type-2 PSEs
Remove the requirement to remove power within TLIM, and require that the PSE meet the SOA limits.
Remove the sentence "Measurement to be taken after 1 ms to ignore initial transients."

This comment is related to comments/solutions of 78, 96, 11, 111.
i.e., TLIM is defined by the SOA curve in Figure 33-9a.

Recommend Resolution 185

- **Replace “within TLIM” with a reference to Figure 33-9a SOA and its related text for guidance.**
- **Figure 33-9a is applicable to type 1 and type 2 PSEs.**
- **Strike text as follows**
  ~~c) Measurement to be taken after 1ms to ignore initial transients.~~
- **All present; Y: 15 N: 0 A: 0**
- **Fred Accepts this resolution.**

Note section 33.2.8.8 and 33.2.8.9 text is being reworked due to the resolution for comments 11 and 111.

Comment 186

Cl **33** *SC* **2.8.6** *P* **27** *L* **11** # 186

Schindler, Fred — Cisco Systems

Comment Type **TR** *Comment Status* **X** *soa*

The specification requires that a PSE remove power based on maximum ICUT and Tovld thresholds. This does not ensure interoperability or meet the safety specifications, and therefore, forces a design requirement.

SuggestedRemedy

Allow the existing requirement or figure 33-9a SOA requirements to specify what is required for compliance.

This comment is related to comments/solutions of 78, 96, 11, 111.
i.e., TLIM is defined by the SOA curve in Figure 33-9a.

Recommend Resolution 186

- **Correct text as follows:**
- **"If I_{port} in Table 33-5 exceeds I_{CUT} for longer than T_{ovld}, the PSE ~~shall~~ may remove power from the PI."**
- **FYI: The requirement to remain below the SOA curve is met by I_{LIM} requirements.**
- **FYI: The PSE will provide I_{LIM} for at least T_{LIM}.**
- **All present; Y: 15 N: 0 A: 0**
- **Fred accepts this resolution.**

Assume that when text says PSE this implies type 1 and type 2.

Comment 28

- **Page 27, line 43**
- **"Power shall be removed ~~immediately~~ from the PI of a type 2 PSE before ~~if~~ the PI current exceeds the Safe Operating Area (SOA) upper bound template in Figure 33-9a." ***
- **The comment recommends striking "type 2."**

*** Adapted from comments 78 and 96 resolution.**

Comment 28

Cl **33** *SC* **2.8.8** *P* **27** *L* **43** # 28

LANDRY, MATTHEW SILICON LABORATO

Comment Type **TR** *Comment Status* **X** *soa*

Is there any reason not to make SOA curve applicable to Type 1 PSEs as well as Type 2 PSEs? All safety and existing peformance studies obviously made use of Type 1 equipment. Further, the SOA curve is well outside of the ILIM max defined for Type 1, therefore it should be impossible for a compliant Type 1 device to violate this new SOA requirement.

SuggestedRemedy

Strike "Type 2"

Recommend Resolution to 28

- **"Power shall be removed ~~immediately~~ from the PI of a ~~type 2~~ PSE before ~~if~~ the PI current exceeds the Safe Operating Area (SOA) upper bound template in Figure 33-9a." ***
- **Accept Remedy; strike type 2**
- **All present; Y: 15 N: 0 A: 0**
- **Matt accepts this resolution.**

*** Adapted from comments 78 and 96 resolution.**

Comment 23

Cl **33** *SC* **2.8.8** *P* **28** *L* **32** # 23

LANDRY, MATTHEW SILICON LABORATO

Comment Type **T** *Comment Status* **X** *soa*

Figure 33-9a title does not specify which PSE Type to which is applies, but the SOA curve applies only to Type 2 PSEs.

SuggestedRemedy

Replace title with:

'Type 2 PSE PI Safe Operating Area'

Proposed Response *Response Status* **W**

see 28
someone also commented that it could apply to type 1 also (Law?)

A type 2 PSE may power a type 1 PD.

This was created for a type 2 PSE.
However, the SOA curve may be used for type 1 PSEs and still provide interoperation and IEC 60950 requirements—see comments 28, 185, 186.

Recommended Resolution 23

- **Leave Figure 33-9a as is.**
- **The SOA is valid for any PSE.**
- **We may need to add text referencing types when the PD current limits and the PSE current requirements are added.**
- **Matt withdraws comment.**
- **All present; Y: 15 N: 0 A: 0**

Next Step

- **Is the PD a constant power load?**
- **Review PD Current Limits.**
- **PSE Current Requirements.**
- **Motion on PSE Current Requirements.**