IEEE802.3at Task Force
Contribution for Vport ad hoc

Vport_LIM - New parameter

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Objective

- To explain the need for Vport_LIM.
- This parameter is already hidden in 802.3af in 33.2.5 item d) and clearly in figures 3C.4 and figure 33C.6. (30V value)
- Vport_LIM is used in some of the comments for Draft D2.0 and in some of the maintenance request material.

Current status per 33.2.5

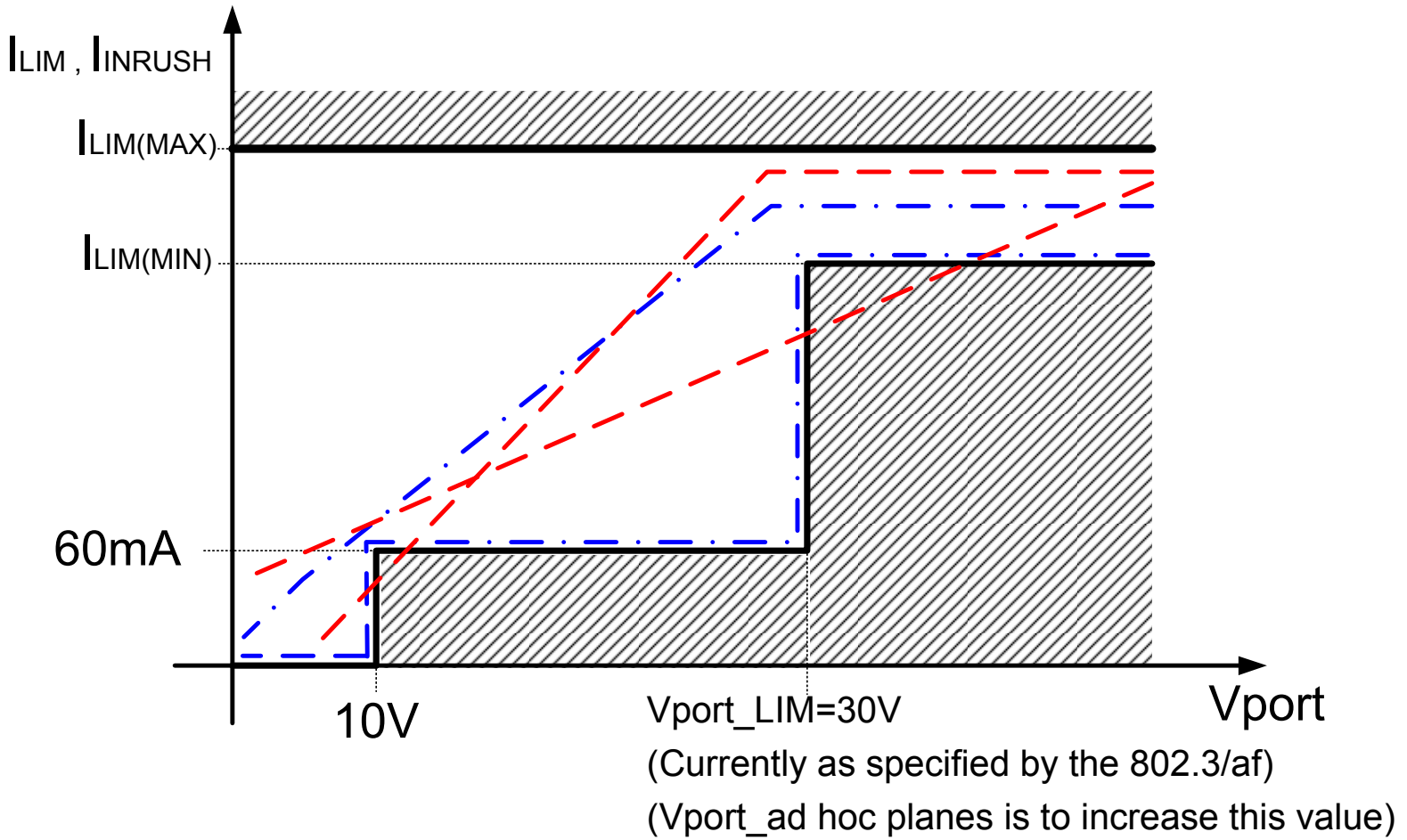

Figure 33C.6.1 – I_{LIM} and I_{INRUSH} requirements as function of Vport at startup and short circuit conditions

Examples of invalid curves.
Examples of valid operating curves. Other curves may be valid.

Facts:

- PD may be OFF below 36V.
- PD must be OFF by approaching the 30V value.
- At this conditions, No need to keep system ON.
- In short Circuit condition, we get to the above scenario
- More over, keeping system ON at short circuit conditions may create violation of some parts of the spec or “it prevents meeting some parts of the spec.” and causing other un pleasant issues as described by the Vport ad hoc and maintenance requests 1162, 1167 and 1168

The need:

- To define a Voltage number at the PSE side that will define if we are in need to support system in Short Circuit scenario or it is no longer required.
- The use of this parameter is optional.

Suggested numbers – Option 1

- Option 1 (from Vpd_OFF starting point):

  - Vport_LIM at PSE side for Type 1 PSE: 30V minimum, 38V max.
  - Vport_LIM at PSE side for Type 2 PSE: 30V minimum, 40.28V max.

  - Rational
  - Vpse = Vpd + Cable Voltage Drop
  - PD is definitely OFF at 30V.
  - Cable loss is 0.4*20R = 8V for Type 1.
  - Cable loss is 0.72*0.4A/0.35A*12.5R = 10.28V for Type 2.

Suggested numbers – Option 2

- Option 2 (from minimum PD operating voltage starting point):

- Vport_LIM at PSE side for Type 1 PSE: 30V minimum, <44V max.
- Vport_LIM at PSE side for Type 2 PSE: 30V minimum, 46.28V max.
- (Taking in acount that port must be on for voltage transient duration of up to 250us for 7% below 50V)

- Rational
- Vpse = Vpd + Cable Voltage Drop
- PD must work at 36V.
- Cable loss is 0.4*20R=8V for Type 1.
- Cable loss is 0.72*0.4A/0.35A*12.5=10.28V for Type 2.

Discussion

- Do we need Vport_LIM?
- Which option to go?