Interpretation Number: 2-03/06
Topic: DTE Power Short circuit requirements
Relevant Clause: Table 33-5
Classification: Defect

Interpretation Request

This interpretation request relates to the requirements placed on the PSE output voltage and current during a short circuit condition. Subclause 33.2.8 'Power supply output' of IEEE Std 802.3-2005 states that 'When the PSE provides power to the PI, it shall conform with Table 33–5, Figure 33–6, and Figure 33–7.'. On examination of Table 33-5 it contains two parameter which we believe apply:

Item number - 1
Parameter - Output voltage
Symbol - VPort
Units - Vdc
Min - 44
Max - 57
Comment - See 33.2.8.1

Item number - 10
Parameter - Output current – at short circuit condition
Symbol - ILIM
Units - mA
Min - 400
Max - 450
Comment - See 33.2.8.8

Now taking a 0.1 Ohm as a reasonable example of a short circuit lets us try and applies these requirements. If we try to meet the Vport minimum requirement of 44V, a current of 440A has to be sourced which, apart from anything else, is in excess of the maximum value of the ILM specified in Item 10. If on the other hand we try to meet the ILM minimum requirement of 400 mA, the Vport achieved will only be 40mV, nowhere near the Vport minimum requirement.

Based on this example it is unclear how these requirements in Table 33-5 be met during a short circuit condition.

Interpretation for IEEE Std 802.3-2005

The standard states 'When the PSE provides power to the PI, it shall conform with Table 33–5 ..' and users have to conform to this. However, concerns have been raised about this in the area of the short circuit behavior that have been referred to the IEEE P802.3at DTE

Power Enhancements Task Force for possible inclusion in the IEEE P802.3at drafts as a path into the IEEE 802.3 standard.

For further information on this topic may be found in maintenance request 1162 that is available at the following URL:http://www.ieee802.org/3/maint/requests/maint_1162.pdf

Note - The proposed text in this maintenance request is subject to change. USE AT YOUR OWN RISK! Because this is an unapproved working document, it must not be utilized for any conformance/compliance purposes.