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To: T10 Technical Committee
From: Bill Galloway
Subj: DiffSense Timing

I reviewing SPI-3 I have uncovered several problems with the DiffSense timing. The only times controlling a mode change on the bus are in section 7.2.5.2

> **7.2.5.2 LVD DIFFSENS receiver**
> ….
> A device shall not change its present signal driver or receiver mode based on the DIFFSENS voltage level unless a new mode is sensed continuously for at least 100 ms.

The bus is not operational until all devices (drivers and receivers) and terminators have switched modes. Currently there is no upper bound on the time that a device can take to switch modes. A limit of 400ms should be established as an upper bound.

7.1 SCSI parallel interface electrical characteristics overview

Add new paragraph:

Hot plug events may cause the SCSI bus to change transmission modes. The SCSI bus is not operational until all SCSI devices and terminators have changes modes. All SCSI bus electrical parameters must conform to the new mode for reliable operation.

7.3.5.2 LVD DIFFSENS receiver

Add new paragraph:

A device shall change to the new signal driver or receiver mode based on the DIFFSENS voltage level within 400ms of the last DIFFSENS voltage change.

7.4.1 LVD/MSE multimode termination

Add two new paragraphs:

A multimode terminator shall not change its present termination mode based on the DIFFSENS voltage level unless a new mode is sensed continuously for at least 100 ms.

A multimode terminator shall change to the new termination mode based on the DIFFSENS voltage level within 400ms of the last DIFFSENS voltage change.