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To: T10 Technical Committee
From: Bill Galloway
Subj: PPR Protocol options negotiation

The PPR protocol options do not behave like all other negotiations. The PPR initiator must guess the right protocol options or the result will be always be Async ST DATA only. There has been some discussion about adding the necessary information to the inquiry data to allow the initiator to guess right. While this is possible it ignores software reality. In many operating systems the lowest level driver (the one that does negotiation) does not initiate SCSI CDBs. It would be forced to snoop the inquiry command that the OS generated. The OS generated inquiry command is usually only 36 bytes. This would not be large enough to snoop the new data. Even if all of the operating systems changed in a timely manner, there is no way for the target to guess right if it initiates the PPR. The PPR protocol options field should be bit encoded to allow for future expansion and for real negotiation. The initiator of the PPR would set all bits that it supports and the responding SCSI device would clear any bits that it does not wish to support or does not understand.

Even with bit encoding of the protocol options there is no need for the standard to support all possible bit combinations. A PPR initiator must send one of the legal bit patterns and the PPR responder must only return one of the legal bit patterns.

Possible bit encodings:

Bit 0: DT DATA phase enabled
Bit 1: Information Units enabled
Bit 2: Quick Arbitration enabled

Supported bit patterns:

000: ST DATA phase
001: DT DATA phase
011: DT DATA phase and Information Units enabled
101: DT DATA phase and Quick Arbitration
111: DT DATA phase, Information Units, and Quick Arbitration
All others are reserved.

Change paragraph:

11.6.2.10 PARALLEL PROTOCOL REQUEST

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If the responding SCSI device does not support the selected protocol option it shall clear as many bits as required to set the protocol option field to a legal value that it does support.