

T10/00-228r0

To: T10 Technical Committee
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Subject: Obsoleting QAS in SPI-4

I propose we make the QAS (quick arbitration and selection) protocol obsolete in SPI-4.

Reasons:

- Performance analysis of the fast-160 training patterns has shown that adding 2 microseconds is inconsequential. QAS only promised to reduce arbitration time by a comparable amount. If adding 2 microseconds doesn't matter, subtracting 2 microseconds doesn't matter.
- It will simplify logic design and testing if QAS is not included.
- There is no fairness algorithm between QAS and non-QAS devices, so QAS should only be enabled when all devices on the bus support QAS. QAS can only be enabled when packetized protocol is enabled. Enclosure management devices and tape drives are unlikely to support QAS and packetized protocol any time soon. Presence of these devices prohibits using QAS in many environments.
- QAS depends on snooping traffic from other initiator-target connections. It isn't clear whether this will work through all expanders. There is no domain validation technique defined to verify that a domain supports QAS before enabling it.
- The SCSI Trade Association (STA) has defined "Ultra 320" as including packetized protocol but not including QAS.