To: **T10 Membership**
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Subject: **Groundwork for Expander Communication**
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This proposal lays the groundwork for expander communication protocols. It guarantees a minimum valid time for DB(7-0) during asynchronous transfers of commands, messages and status

For expander communication to function correctly all devices on a multi-segment SCSI bus need to be able to snoop the bus. The proposed duration for the valid time is 50ns.

One method for achieving this is to specify a minimum assertion period for the REQ and ACK signals. This splits the burden between initiators and targets but doesn't address legacy devices. A more compatible method, at least for target devices, is to modify the QAS capable initiator's handling of the REQ, ACK, and data bits.

For MESSAGE IN and STATUS phases the data is valid from the assertion of REQ to the assertion of ACK. A QAS capable initiator qualifies the assertion of ACK for a minimum 50ns period to ensures the data valid time.

For COMMAND and MESSAGE OUT phases the data is valid from the assertion of ACK to the negation of REQ. A QAS capable initiator shall keep the data valid until the negation of ACK to ensures the minimum data valid time. A QAS capable initiator shall assert ACK for a minimum 50ns period.

Note: Future standards may require this behavior of all initiators.