Accredited Standards Committee*
NCITS, Information Technology

To: Membership of T10

From: John Lohmeyer, chair SDV working group
             Bill Ham, Secy SDV working group

Subject: Draft minutes of T10 SDV working group on
June 15, 2000

Agenda

1. Opening remarks and introductions
2. Attendance and membership
3. Approve agenda
4. Document distribution
5. Review minutes of previous meeting
6. Review old action items
7. Discussions/presentations
  7.1 Expander addressing (auto vs fixed)
    7.1.1 Name that expander
    7.1.2 Expander and terminator issues
    7.1.3 Possible uses for using CEF
    7.1.4 Possible new expander communication proposal
    7.1.5 Alternate selection and communication protocol - Petty
    7.1.6 Expanded (multiline) addressing
    7.1.7 Expander communication scheme selection process
  7.2 Margining methods
  7.3 Topology discovery
8. SDV Rev 02 review
9. New Business
  9.1 Standard vs. Technical Report
10. Review action items
11. Next meetings
12. Adjourn

Results of Meeting

1. Opening remarks and introductions

John Lohmeyer led and hosted the meeting. He opened the meeting at 9:00
AM. Bill Ham took these minutes.

2. Attendance and membership

Attendance at plenary meetings does count toward minimum attendance
requirements for T10 membership. Working group meetings are open to any
person or organization directly and materially affected by T10's scope
of work but do not count toward minimum attendance for T10 membership.

The following people attended the meeting:

Name	S	Organization	Electronic Mail Address
Mr. Ron Roberts	A	Adaptec, Inc.	Ron_Roberts@adaptec.com
Mr. Robert C. Elliott	P	Compaq	Rob_Elliott@compuserve.com
Dr. William Ham	A	Compaq	bill_ham@ix.netcom.com
Mr. Eugene Lew	P	Fujitsu	elew@fcpa.fujitsu.com
Mr. John Lohmeyer	P	LSI Logic Corp.	lohmeyer@t10.org
Mr. William Petty	V	LSI Logic Corp.	william.petty@lsil.com
Mr. Jeffrey Gauvin	V	LSI Logic Corp.	jeff.gauvin@lsil.com
Mr. Terry Gibbons	V	LSI Logic Corp.	terry.gibbons@lsil.com
Mr. Bruce Trunck	V	LSI Logic Corp.	bruce.trunck@lsil.com
Mr. Rick Hicksted Jr.	V	QLogic Corp.	r_hicksted@qlc.com
Mr. Mark Evans	P	Quantum Corp.	mark.evans@quantum.com
Mr. Paul D. Aloisi	P	Texas Instruments	Paul_Aloisi@ti.com
Mr. Mike Kosco	V	Texas Instruments	mike@mvbuilders.com

13 People Present

Status Key: P   - Principal
             A,A# - Alternate
             O   - Observer
             L   - Liaison
             V   - Visitor

3. Approve agenda

John Lohmeyer moved that the agenda as shown above be approved. The
motion passed without objection.

4. Document distribution

   1. Documents are distributed electronically by means of the T10 web
      site: www.T10.org.

5. Review minutes of previous meeting

This was the first meeting of this group and has no previous minutes.

6. Review old action items

This was the first meeting of this group and has no old action items.

7. Discussions/presentations

7.1 Expander addressing (auto vs fixed)

7.1.1 Name that expander

It quickly became clear that the type of expander that can be talked to
and can somehow relay information to other parts of the domain is
formally "simple" by the definitions in EPI but has some features of
"bridging" because it may have some "addressing" capability. Therefore
some new name is needed to describe this "communicating" expander.

The group reluctantly temporarily accepted "controllable expander with
feedback – CEF" as the working terminology for expanders that can be
addressed from SCSI devices using a scheme other than the normal SCSI ID
and can transmit information other than that received from its ports to
specific other entities in the domain.

7.1.2 Expander and terminator issues

There was general agreement that communication to terminators was not
within the scope of the effort.

7.1.3 Possible uses for using CEF

Possible reasons for using CEF were explored as listed as follows:

In-band (i.e. over the SCSI HW) control of individual expanders
Dynamic reconfiguration of segments (using In-band control)
Margining of individual segments (using in-band control)
Topology discovery (can be done without CEF)
Fault/margin failure isolation (can be done without CEF)

The uses for these capabilities were seen as: system integrators for design validation, management of some parts of the storage domain, and field service.

7.1.4 Possible new expander communication proposal

After considerable discussion the group formulated a scheme that is somewhat different from presently proposed schemes. This scheme uses snooping and modification of traffic created between initiators and full SCSI targets or between one initiator and another initiator and does not require any changes in the use of the SCSI signals. The simple expanders are already capable of knowing which SCSI ID's are on which side and therefore simply needs to attach this information to traffic passing thru the expander to the host. A method of temporarily assigning "addresses" to every expander that may be different for each host was developed.

As there was no existing proposal that has these properties John Lohmeyer along with Ron Roberts and others agreed to generate a full fledged proposal containing this method.

This method was dubbed Dynamic expander addressing protocol (DEAP).

7.1.5 Alternate selection and communication protocol – Petty

Bill Petty went thru document 99-213r0 that contains an algorithm that executes from the initiator while the initiator keeps BSY and SEL asserted just before going to the selection phase. This proposal was formerly called "out of band".

John Lohmeyer stated that a version of this protocol is presently being shipped with LSI Logic HBA and works with some expanders.

All the communications are asynchronous. A proposal for the protocol is also included.

For most people at this meeting this was the first serious exposure to this proposal even though this proposal had been quickly discussed in the SCSI working group before.

Bill agreed to put out a new revision based on input from this meeting.

7.1.6 Expanded (multiline) addressing

This proposal is presently documented in SDV and was not discussed in this agenda item. The item in included, however, for completeness.

7.1.7 Expander communication scheme selection process

At the moment there are three basic proposals for the expander communication function:

- Expanded (multiline) addressing described in 99-250r2
- Dynamic expander addressing protocol described in 0-257r0
- Alternate selection and communication protocol (formerly out of band) described in 99-213r0

A process to select one of these will be started at the next meeting.

There was a consensus that the communication protocol needs to be documented in a standard (as opposed to a technical report).

7.2 Margining methods

Not addressed at this meeting.

7.3 Topology discovery

Topology discovery was discussed under the agenda item on expander addressing.

8. SDV Rev 02 review

Ron Roberts led a review of the present SDV document. See the latest revision for the changes.

9. New Business

9.1 Standard vs. Technical Report

Robert Elliott moved and Mark Evans seconded that the communications and addressing protocol specifications be targeted for inclusion in SPI-4. Motion passed: 6/0/0.

10. Review action items

New action items from this meeting:

John Lohmeyer, along with Ron Roberts and others, to generate a full fledged proposal for the dynamic expander addressing protocol (00-257r0).
Status: new

Bill Petty agreed to put out a new revision of 00-213r0 before the next meeting.
Status: new

Ron Robert to incorporate LSI logic comments into SDV.
Status: new

11. Next meetings

The next working group meeting will be requested for Monday July 10, 2000 at 1:00 PM in Colorado Springs, CO. A second meeting on Thursday August 17, 2000 in Colorado Springs following the PIP and SSM meetings.

12. Adjourn

The meeting adjourned at 5:00PM on Thursday.