

Accredited Standards Committee*
X3, Information Processing Systems

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Date: April 20, 1993

Project:

Ref. Doc.:

Reply to: G. Penokie

To: Membership of X3T9.2

From: Larry Lamers & George Penokie

Subject: Minutes of RAID Study Group Meeting (4/19/93)

Agenda

1. Opening Remarks
2. Attendance and Membership
3. Approval of Agenda
4. SCSI Disk Array Model (93-003r4) [Penokie]
5. Action Items
6. Meeting Schedule
7. Adjournment

Results of Meeting

1. Opening Remarks

George Penokie the RAID Study Group Chair, called the meeting to order at 5:00 pm, Monday April 17, 1993. He thanked Chuck Brill of AMP for hosting the meeting.

As is customary, the people attending introduced themselves. A copy of the attendance list was circulated for attendance and corrections.

It was stated that the meeting had been authorized by X3T9.2 and would be conducted under the X3 rules. Ad hoc meetings take no final actions, but prepare recommendations for approval by the X3T9.2 task group. The voting rules for the meeting are those of the parent committee, X3T9.2. These rules are: one vote per company; and any participating company member may vote.

The minutes of this meeting will be posted to the SCSI BBS and the SCSI Reflector and will be included in the next committee mailing.

George stated that this is the sixth meeting of the RAID study group. The purpose of the group is to deal with interface issues related to using RAIDs. The study group will assess the issues and then formulate a strategy for dealing with them.

2. Attendance and Membership

Attendance at working group meetings does not count toward minimum attendance requirements for X3T9.2 membership. Working group meetings are open to any person or company to attend and to express their opinion on the subjects being discussed.

The following people attended the meeting:

RAID Study Group Meeting Attenders

Name	S	Organization	Electronic Mail Address

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

3. Approval of Agenda

The agenda developed at the meeting was approved.

4. SCSI Disk Array Model (93-003r4) [Penokie]

George Penokie presented his latest model.

The following issues where discussed and the listed changes will be made to the next revision of the Array Model:

The model will be changed to indicate that all commands have LUIs, but not all commands have LBA's. This inforantion will be added into section 6.

The (IN) and (OUT) references will be changed to (INPUT) and (OUTPUT) to maintain directionality.

It will be noted that LUI(OUT) may not be SCSI but it is assumed to be for purposes of the document.

The figures will be modified to indicate that DACL layer has one LUI(IN) and multiple LUI(OUT)s.

The identification services will be renamed to maintance services. The maintance services will provide a the means for pass-through operations.

It will be made clear that a single device may contain more than one lba set or it may contain a portion of an lba set and that different lba sets cannot intersect.

The LBA range will be defined as an addressable continuum of logical blocks from the system point of view i.e., above the DACL. The LBA range does not include check data.

The LBA set defination will make it clear that a LBA range has a single mapping defined by the DACL per a service request from the system and that it contains two non-intersecting lba ranges; one for user-data and one for check-data.

The configuration services will expand the mapping service into several services which will allow a system to define parameters of the array. Some these services will be:

- +Number of bytes per block
- +Transfer rate
- +I/Os per second
- +Level of integrity
- +Availability

The following was discussed but no there was no resolution:

Should the topology be modifiable by the system and if so how should this be placed into the array model?

To do this the system must become aware of all devices and all the possible paths to all those devices. At present there is not way to determine this in SCSI.

5. Action Items

- 1) George Penokie to prepare revision 5 of the RAID Model.

6. Meeting Schedule

The next meeting of the RAID Study Group is planned for May 17, 1993 at the High Mesa Inn in Santa Fe, NM. The meeting is expected to start at 4:00pm-5:00pm following the X3T9.2 ATA working group meeting. Plan to stay till 8:00pm.

7. Adjournment

The meeting was adjourned at 8:00 p.m. on Monday April 19, 1993.