Subject: SSC-2 Meeting Minutes (T10/00-412r0)
Date: October 30, 2000

1) Agenda

1. Introductions: Group
2. Approval of this agenda: T10/00-XXXr0 Group
   a. Call for Secretary
      Bob Snively volunteered to take notes for this meeting. Rob Basham will seek management support as the permanent secretary.
3. Approval of minutes: Dave Peterson
   approved
4. Review of old action items: Dave Peterson
   none
5. Discussion items:
   a. Explicit state change proposal T10/00-318r1 Rob Basham
6. Unscheduled business:
7. Next meeting requirements:
8. Review new action items: Dave Peterson
9. Adjournment:

2) Document T10/00-318r1

Rob Basham presented the referenced document as proposed additions to SSC-2.

He requested that additional information be defined for the terms "block number" (which was changed to logical block address). Logical file address and logical set address will also be added as part of the space command and some other commands.

The old command set is the "legacy" command set.
The new command set is the "explicit address" command set.

After some discussion, it was agreed that command queueing shall only be supported by the new command set.

There has been general agreement that reads would be stateless, in that there is no check done for consistency with the present position. The requested data is sought and read.

IBM is proposing that writes should be stateful. HP proposes that writes be stateless.

Rob Basham proposes a compromise that indicates that the first of a string of commands must be in the correct location. He feels that there may be data integrity issues associated with multiple initiators and reservations. The reception of this was not warm. There was general consensus that stateless writes were the proper behavior.

Rob Basham indicates wide support for explicit address

command set and wide support for command queuing only with the new command set.

Deferred versus non-deferred data transfer with queued writes needs to be discussed in the model. This will be discussed in the next meeting.

Large parts of the document are unchanged.

Optional vs. Mandatory was discussed for the command set. It may be desirable to simply treat SSC-2 as a new command set. This was not accepted because improvements to the legacy commands to accept large block addresses are also required.

This part of the discussion is a major marketing question to the tape vendors. The questions are:

a) Should legacy commands be supported by explicit address devices?

b) Should these be two separate types of devices?

c) Should a device support both types of behavior?

d) Should command set support be set by a MODE SELECT/SENSE?

e) How are the FCP recovery requirements made known to the proper drivers so that the proper command set behavior can be identified.

Note that during writes, data cannot be skipped, although commands may be received out of order. The write can only take place immediately following data written already.

Commands being discussed:

Erase(16)

Locate(16)

The command was reviewed. Ordering of reads and writes is still a problem.

Locate Block, while not necessary in the SSC-2 command set, is still exploited in some legacy software that may need to be part of the mapping to SSC-2.

The Locate Block is necessary to indicate the beginning of a string of writes. A write can only begin before EOF, but makes all data after the written data meaningless. Write insertion cannot take place. Locate block is part of the syntax of verification.

Another mechanism would be to label the first of a series of Write commands with a special marker, essentially combining the Locate Block command with the first Write command.

Seek is preserved in disks for equally meaningless reasons.

CRN is not required, and should be avoided since it is only available on FCP-2.

The treatment of Locate may require that locate not be queued under some conditions. Queuing of commands behind a Locate or a Locate immediate is okay, but a Locate in the middle may create data integrity issues. It may be necessary to make Locate cause a check condition if it comes into a device with queues.

This same punctuation function may be required at the end of a string of writes as well.

The conclusion was that Write needs a "first in string" marker. Locate is used as a punctuation command between a series of read or write commands and a series of write or read commands. That closes all the known cases. This will be further studied.

There may still need to be a "last in string" function of some kind for writes, although the locate may suffice.

Note that performance is affected by clearing the queue and performing the locate, but less so than in the past.

Read reverse still exists, but is optional.

Note that read reverse needs the Byte Order bit to be able to indicate the proper behavior.

Other commands.

Nothing special was discussed. See the document.

ACTION ITEMS:

1) Op codes for the new commands. Action to Ralph Weber.

2) Study of buffer mode requirements. Action to Rob Basham. December goal.

3) Study of statefulness of tape and how to manage it. Action to Rob Basham. December goal.

4) Study of punctuation between read series and write series. Action to Rob Basham. December goal.

5) Work with Rob Basham to structure SCC-2 document. Action to Dave Peterson.

6) Schedule meeting for December. Action to Dave Peterson. Goal is to be reviewing from the SSC document in January.

SSC-2 will have all the extensions to SSC and will have the explicit address model in the same document. Dave and Rob will work out how the model should be expressed, whether as two separate command sets or as one selected by Mode Select. This is often done at BOT anyway.

Adjourned.

Attendance:

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