Accredited Standards Committee *

X3, Information Processing Systems

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Date:	July 22,1995
Project:	X3T10-1048D
Ref. Doc.:	X3T10/94-057
Reply to:	R. Roberts

To: Membership of X3T10

From: RK Roberts

Subject: Minutes of X3T10 MMC Working Group - July 12, 1995

The charts and documents developed during the meetings are being generated and will be available at the next meeting in Sunnyvale at Philips Semiconductor. I will also have them on the ftp site at SYMBIOS. All of these documents will be in Word 6 format..

1. Opening Remarks

Ron Roberts convened the meeting at 1:00 PM on July 12, 1995. He thanked our host, Symbios Logic, 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 was authorized by X3T10 and will be conducted under the X3 rules. Ad hoc meetings take no final actions, but prepare recommendations for approval by the X3T10 technical group. The voting rules for the meeting are those of the parent committee, X3T10. For the ad hoc, other than straw votes, the voting rules are: one vote per participating company.

It was also stated that the minutes of this meeting will be posted to the X3T10 BBS, the SCSI Reflector, the MMC Reflector, the ATAPI Reflector, and will be included in the next X3T10 committee mailing.

Attendance at working group meetings does not count toward minimum attendance requirements for X3T10 membership. Working group meetings are open to any person or company to attend and to express their opinion on the subjects being discussed.

2. Attendance and Membership

See attendance attached.

3. Document Distribution

95-223r2 Functional Requirements

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4. Call for Patents

Ron requested that any patents known to the working group be identified

5. Approval of Agenda

The agenda was approved as presented.

6.0   Meeting Agenda

6.1 Review of SFF 8020 Changes (D. Worrell)

There were ten (10) recommendations for change to the SFF8020 document . Not all of the changes were pertinent to the MMC document. Those that were reviewed by the members.

Devons presentation: Copy of overhead not provided to editor so it is not included in the minutes.

1- vote taken to put READ 12 back into the 8020 rev 2.5. the motion was approved 9-3

2- needs a new op-code for SCSI Changer, or MECH Status & Load/unload. consensus is a new opcode is required..... need one for Mech Status (opcode B8 in scsi in primary cmds) and one for Load/unload CD...Embed

Action item: Ron get opcode from Ralph...turns out that opcode conflict does not exist but it was discovered that some of the opcodes were wrong..

3- Changer - accepted
Action item - Devon to continue the definition of all bits/fields on page 99

4- same as 3

5- no comment

8- action item: Bill Mc to provide Devon with a copy of IDC958 to be reviewed for entry to Annex A...

9- not a MMC issue

10- Action: Ron present to plenary the need for 4 bits to identify the MMC rev level.. Wg recommends byte 3 of Inquiry Cmd. ...

6.2 Functional Requirements Doc (R. Riesch)

Rob Riesch covered action items and flows developed at previous working group session (June).

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Bill McFerrin presented the following:

PRIMITIVE DECONSTRUCTION OF WRITE PACKET

WRITE PACKET command

parameters: must include block start address (SLBA) and number of blocks (count) to write

assumptions: it has already been verified that the device is ready with writable medium present

Query primitive:

To what track does SLBA belong?

Possible answers:

1. Error, SLBA is too large for the current disc format

2. Track X

Query primitive:

Does Track X actually exist?

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1. No

2. Yes

PRIMITIVE DECONSTRUCTION OF WRITE PACKET

Query primitive:

What is status of Track X?

Possible Answers:

1. Reserved/formatted for audio TAO
2. Reserved/formatted for data TAO
3. Reserved/formatted for audio FPR & full
4. Reserved/formatted for data FPR & full
5. Reserved/formatted for audio VPR & full
6. Reserved/formatted for data VPR & full
7. Reserved/formatted for audio FPR with Y available blocks
8. Reserved/formatted for data FPR with Y available blocks
9. Reserved/formatted for audio VPR with Y available blocks
10. Reserved/formatted for data VPR with Y available blocks

Declaration primitive:

Here is the fill byte/patter for data padding (FPR case).

PRIMITIVE DECONSTRUCTION OF WRITE PACKET

Command Primitive:

Begin a packet write.

    possible error : insufficient space for an additional FP

Command Primitive:

Continue the packet write with the following data.

    possible errors: write continue time-out

                insufficient space for continuing VP write

Command Primitive:

Terminate the packet write.

    possible error: write continue time-out

COMMAND PROPOSALS FOR DISCUSSION

READ TOC FORM 3: READ PMA RAW

       Returned data format similar to read TOC RAW (FORM 2)

READ TRACK INFORMATION

       Send LBA as Parameter

       Returned data list includes:

           Track number to which LBA belongs
           Track Data/Record type
           First LBA in the Track
           Last LBA in the Track
           Smallest writable LBA in Track

FORMAT CD

       Parameters in CDB:

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        Disc recording style: DAO/Incremental
        Number of tracks

     Parameter Block:

     Track Descriptor Block for each track being defined

WRITE CD

     CDB Parameters include:
     Recording Type - SAO, TAO, FPR, VPR
     Data Type - Audio, M1, M2NF, M2F1, M2F2, M2MF, N/A
     Special Effects - Automatic Field/Block Generation
     State Of Write: Start, Continue, Complete, Autoblock Generation Fill

     Start address
     Length in blocks

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Charles Yang from MKE was unable to attend but had his action item presented by Kent Manabe:

The following is MKE/Panasonic'c contribution for the assignment of "Close Session" in the MMC June 7/8 meeting. Due to the illness, I am unable to attend the meeting. Could you please distribute it to the MMC member? For any questions, please direct to my E-mail address. Thanks in advance.

1. Track status definitions

    Track status can be classified as follows:

- Static status

   1) Empty reserved Track
      Track is reserved at PMA, but nothing is recorded on the track.

   2) Partly recorded reserved Track
      Track is reserved at PMA, and part of the track is recorded.

   3) Incomplete Track
      Track is not reserved at PMA, but part of the track is recorded.

      Only the last track of Session can be Incomplete Track.

   4) Complete Track

   5) Blank Area

      'Invisible Track' is not an appropriate expression. We will use 'Blank Area' instead because it is not proper to define as track with no information on track.

- Dynamic status

   6) During TAO recording for Blank Area

   7) During TAO recording for Empty reserved Track

2. Session Status just before receiving 'Complete Session' Command.

Dynamic status does not exist just before Session is closed. Blank Area is not included in the Session to be closed. So Track status which is included in the Session to be closed just before the Session is closed are 1) ~ 4) out of the above 1) ~ 7).

Status of Session to be closed can be classified as follows depending on the status of track included in the session:

Session	Status of Track contained in a Session			
Status	1)	2)	3)	4)
-Case A:	non	non	non	at least 1
-Case B:	at least 1	non	non	non
-Case C:	non	non	at least 1	at least 0
-Case D:	at least 1	at least 0	non	at least 0
-Case E:	at least 0	at least 1	non	at least 0
-Case F:	at least 1	at least 0	at least 1	at least 0
-Case G:	at least 0	at least 1	at least 1	at least 0

3. Closing Session Flow

If an empty reserved track or partly recorded reserved track exists in the session just before closing, empty area exist in the area reserved for Track. This is out of the standards (i.e. does not allow it), so the empty area must be padded with meaningless data in accordance with the method described below in 3-5.

3-1. Host requests Session Status being closed to a drive.

The Host requests for status of Session to be closed of a drive.

3-2. Drive reports Session status to Host.

The drive reports status of the designated session. In this case, Session status is one of the above cases A) ~ G).

3-3. Host accepts session status and requests closing session to drive.

The Host decides depending on the session status whether the session should be closed or not. It also decides padding is needed or not depending on empty area. The Host requests closing session of the drive. Summary is given below.

- Case A: Closing session is possible, Padding is not required.
- Case B: Closing session is impossible.
- Case C: Closing session is possible, Padding is not required.
- Case D-G: Closing session is possible, Padding is required.

3-4. Drive Action

- Case A: Drive writes Lead-in & Lead-out.
- Case B: Drive replies error message to host, and does not write.
- Case C: Drive checks track length more than 4 second. If not, drive replies error message to host.
    Drive does PMA update of Incomplete track.
    Drive writes Lead-in and Lead-out.
- Case D-E: Drive checks padding is active. If not, drive replies error message to the host.
    Drive does Padding to empty area of Empty reserved Track or Partly recorded reserved Track.
    Drive writes Lead-in and Lead-out.

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- Case F-G: Drive checks recorded incomplete track length is more than 4 second. If not, drive reply
    error message to the host.

    Drive checks Padding is active. If not, dirve replies error message to the host.

    Drive does Padding to empty area of Empty reserved Track or Partly recorded reserved Track.

    Drive writes Lead-in and Lead-out.

3-5. Outline of drive action

- PMA update
  Drive records Start-Time and Stop-Time of Track designated by PMA.

- Padding empty area of Empty reserved Track
  * write mode : TAO
  * physical format : Drive take the following process depending on the position of empty area of Empty
    reserved Track in the session.

   1st Track: Fromat in the same mode as 2nd Track.

   Except 1st Track: Format in the same mode as the preceding track.
  * Pre-gap is 2 sec.

- Padding empty area of Partly recorded reserved Track
  * write mote : The same write mode as already used in this track.
  * Physical Format: The same Physical Format as already used in this track.
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-- Action item presented by Masa Morizumi of Yamaha Corp. --

RESERVE TRACK

Host decide:

            * Reserved Length

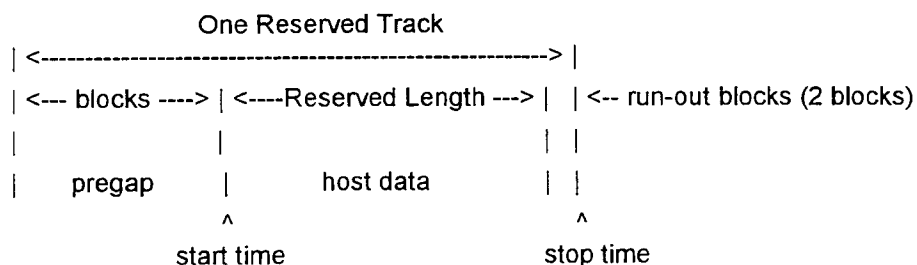   * Copy   Copy inhibited
                          Copy permitted
                          SCMS copy

            * TAO   Incremental
                          track at once

            * Mode   mode 1
                          mode 2

            * Audio/Data

Command :   Reserve Track

            1. Drive calculates:

                    start/stop time
                    track number (last track +1)

            2. Drives updates PMA
                    (writes 10 blocks in PMA)

start / stop time definition

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                    One Reserved Track
    | <-------------------------------------------------------> |
    | <--- blocks ----> | <----Reserved Length ---> |  | <-- run-out blocks (2 blocks)
    |                   |                           |  |
    |     pregap        |        host data          |  |
                        ^                           ^
                   start time                  stop time
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6.3   Review any Technology proposals (please provide copies of docs, if any)
No new technology was presented

7.0   New Business
none

8.0   Review of Action Items

1. Bill Mc to obtain a letter from Philips to allow the " Functional Requirements for MultiMedia Command Set Document/Model" to be published and allow current licensed companies to discuss these topics...

2. Ron get opcode from Ralph...Referred to the SMC working group....

3. Ron present to plenary the need for 4 bits to identify the MMC rev level.. Wg recommends byte 3 of Inquiry Cmd. ...Presented to plenary on July 13. No results at this time.

4. Bill Mc to provide Devon with a copy of IDC958 to be reviewed for entry to Annex A...

9.0   Future Meeting Schedule

Next meeting will be in Sunnyvale, CA,   August 2 & 3. The meeting will be hosted by Philips Semiconductor. Check MMC reflector for times and building.

Members voted to hold only one meeting in August as there are to many meeting conficts. The September meeting will be in conjunction with X3 at Manchester, NH. Our normal day is Wednesday of that week. See X3T10 Plenary minutes from July meeting.

October Working Group sessions will be held in Irvine, CA, hosted by Western Digital. The date set for these is Wednesday and Thursday October 4 & 5

10.0   Adjournment

Meeting adjourned at 6PM on July 12, 1995

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ATTENDANCE LIST For July 12,1995

Name	Company	E-mail
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