

Accredited Standards Committee*

X3, Information Processing Systems

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Reply to: R. Roberts

To: Membership of X3T10
From: R. Reisch/R. Roberts
Subject: Minutes of X3T10 MMC II Working Group - January 7 and 8, 1997

Agenda:

- 1.0 Opening Remarks
- 2.0 Introductions
- 3.0 Document Distribution
- 4.0 Call for Patents
- 5.0 Approval of Agenda
- 6.0 Meeting Agenda
 - 6.1 - Review Doc 97-102R0, Definitions
 - 6.2 - Review Doc 97-103R0, DVD Model
 - 6.3 - Review Doc 97-104R0, CD Model
 - 6.4 - Review Doc 97-105R0, Changer Model
 - 6.5 - Review Doc 97-106R0, DVD Power Management
 - 6.6 - Review Doc 97-107R0, Feature Sets
 - 6.7 - Review Doc 97-108R0, Packet Commands for C/DVD Devices
 - 6.8 - Review Doc 97-XXYR0, Commands Specific to CD Media Only
 - 6.9 - Review Doc 97-yyyR0, ATAPI Implementation Notes
 - 6.10- Review Doc 97-xxzR0, SCSI Implementation Notes
 - 6.11- Review Doc 97-xxxR0, Support for DVD-R and DVD-RAM
 - 6.12- MMC II Document Organization
- 7.0 New Business
- 8.0 Review of Action Items
- 9.0 Future Meeting Schedule
- 10.0 Adjournment

Minutes:

- 1.0 Opening Remarks

Ron Roberts called the meeting to order at 9:00 AM on Tuesday 01/07/97. He thanked Quantum for hosting the meetings. Ron asked Mr. Rob Reisch of Kodak to act as recording secretary for the meetings.
- 2.0 Introductions

Introductions of attendees were made and a sign-up sheet was distributed. The following attendees were present during the two days of meetings:

Name:	Company:	E-mail address:
Ron Roberts	Apple Computer	rkroberts@alo.com
Robert Reisch	Eastman Kodak	reisch@kodak.com

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Chi Wang	Cirrus Logic	cwang@corp.cirrus.com
Dan Colegrove	IBM	colegrove@vnet.ibm.com
Frank Fung	Independent Consultant	No e-mail at this time
Pete McLean	Maxtor	pete_mclean@maxtor.com
Mark Evans	Quantum Corp	mevans@qntm.com

3.0 Document Distribution

Ron Roberts distributed hard and soft copies of the following documents:

Document Number	Title	File Name
97-102R0	MMC-2 Additional Definitions	MM2-03r0.doc
97-103R0	MMC-2 DVD MODEL	MM2-04r0.doc
97-104R0	MMC-2 CD MODEL	MM2-05r0.doc
97-105R0	MMC-2 CHANGER MODEL	MM2-06r0.doc
97-106R0	MMC-2 DVD POWER MANAGEMENT	MM2-07r0.doc
97-107R0	MMC-2 FEATURE SETS	MM2-08r0.doc
97-108R0	MMC-2 Packet Commands for C/DVD Devices	MM2-09r0.doc
97-117R0	MMC-2 Commands specific to CD Media Only	MM2-10r0.doc
97-118R0	MMC-2 ATAPI Implementation Notes	MM2-11r0.doc
97-119R0	MMC-2 SCSI Implementation Notes	MM2-12r0.doc
97-120R0	MMC-2 DVD-R and DVD-RAM	MM2-0Ar0.doc

4.0 Call for Patents

The normal request for patent disclosures was made. No patents were identified.

5.0 Approval of Agenda

No modifications were made.

6.0 Meeting Agenda

6.1 - Review Doc 97-102R0, Definitions

6.1.1 Removed or make modifications to the following definitions (note, most definitions already existed in MMC):

- 3.2.1 Absolute M/S/F
- 3.2.5 Audio sector
- 3.2.7 BCD
- 3.2.8 Block
- 3.2.12 CD-E through 3.2.19 CD Standard
- 3.2.22 Changer
- 3.2.23 CIRC
- 3.2.29 Defect Management will be replaced with a better definition.
- 3.2.30 Disc
- 3.2.35 DVD Media
- 3.2.36 DVD-R needs to be fixed
- 3.2.37 DVD-RAM needs to be fixed
- 3.2.38 DVD Reference Code
- 3.2.40 DVD Standard

- 3.2.41 EAN
- 3.2.42 ECC needs work
- 3.2.43 DVD ECC block changed to ECC block
- 3.2.47 Fram
- 3.2.48 Hold Track State
- 3.2.51 Index
- 3.2.52 Invalid
- 3.2.53 LBA (Logical Block Address) needs to be fixed for the media type.
- 3.2.57 Logical Block
- 3.2.58 Logical Track
- 3.2.59 Logical Unit need to reference a SCSI standards document or keep definition
- 3.2.60 Logical Unit Number to reference a SCSI standards document or keep definition
- 3.2.64 MSF Address
- 3.2.65 One
- 3.2.67 Output Port
- 3.2.68 Page
- 3.2.69 Parallel Track Path (PTP) will be modified to read as follows:
PTP disc has Lead-in, user area and Lead-out in each layer respectively. The id sector number of both layers increases to the Lead-out in parallel.
- 3.2.70 Pause Area through 3.2.75 Program Area
- 3.2.77 Reed-Solomon Code (RS)
- 3.2.79 Relative M/S/F
- 3.2.80 SAM
- 3.2.85 Sub-channel
- 3.2.87 TOC through 3.2.93 Zero
- Add a definition for Physical Block number.
- Add a definition for "C/DVD".

6.2 - Review Doc 97-103R0, DVD Model

- 6.2.1 Section 4.0 Model section was changed to MMC section 4.3. The text was edited to remove all DVD advertising of features. The concept of feature sets was added.
Further, MMC section 4.0 needs to add a definition of feature sets.
- 6.2.2 Section 4.1 DVD Media Organization is accepted but needs further clarification. For example, "The primary logical block size is 2048 bytes." The first four bullets need to be updated based on the current DVD specifications.
- 6.2.3 Section 4.2 Track Structure All Figures will be redrawn and made compatible with WORD.
- 6.2.4 Editor's note, the concept of a CD and DVD tracks will need to be resolved in the specification.
- 6.2.5 Editor's note, issues of physical addressing for dual layer media needs to be resolved.
- 6.2.6 Section 4.2.1 DVD specification, Table 2 will be removed.
- 6.2.7 Need to add a figure for an ECC Block to section 4.5.
- 6.2.8 Section 4.3 through 4.5.2 needs additional text all figures will be redrawn to be compatible with WORD.
- 6.2.9 Section 4.6 Commands for C/DVD Logical Units. Remove all but the first sentence. Table 6 will be called Commands for c/DVD logical Units.
- 6.2.10 Section 4.7 Ready Condition/Not Ready Condition, First paragraph, remove sentence #3. Last paragraph remove the note.
- 6.2.11 Section 4.8 Copy Protection, additional text will be added to define DVD copy protection. Also remove the sense key and code information from the first paragraph.
- 6.2.12 Table 7, Not Ready Error & Time-out Unit Attention Reporting(by command) needs to be merged with table 4 in MMC.
- 6.2.13 Section 4.9 Error Reporting, needs to be merged with MMC with appropriate changes.
- 6.2.14 Section 4.10 Removable Medium, first paragraph must be removed. The changer model will have to resolve two sided media.

- 6.2.15 Section 4.11 Logical Blocks will be moved to a T.B.D. location in MMC.
- 6.2.16 Section 4.12 Data Cache will be removed from the model section.
- 6.2.17 Section 4.13 Seek will be removed.
- 6.2.18 Section 4.14 Error Reporting is removed and is identical to 4.9.
- 6.2.19 Section 4.15 Time-out Model, shall be addressed as a separate feature set or a normative annex.
- 6.2.20 Section 4.16 Resets, should be in its own section of MMC II under the model section.

6.3 - Review Doc 97-104R0, CD Model

- 6.3.1 The editor will conduct a review of this document with MMC-I.

6.4 - Review Doc 97-105R0, Changer Model

- 6.4.1 First sentence in section 6.0 will be changed as follows, "The changer is a feature of a C/DVD device."

6.5 - Review Doc 97-106R0, DVD Power Management

- 6.5.1 DVD Power Management will be moved to a normative Annex of MMC II.
- 6.5.2 Table 17 Host Action "Model Select", Timer Effects "See Comment", Comment "A MODE SELECT command that changes the Standby or Idle Timers shall load the timer, otherwise reload standby."

6.6 - Review Doc 97-107R0, Feature Sets

- 6.6.1 Section 8.0, combine the first three paragraphs into one and incorporate into the model section.
- 6.6.2 Rob Sims will make a matrix chart of Feature sets and commands.

6.7 - Review Doc 97-108R0, Packet Commands for C/DVD Devices

- 6.7.1 The document has been modified so that needed additions to MMC will remain in the document. The Flush Cache already exists in MMC will be removed.
- 6.7.2 Remove Inquiry command
- 6.7.3 Remove Load/Unload command
- 6.7.4 Remove Mode Sense command
- 6.7.5 Remove Mode Select command but add Page Codes to Parameters section of specification.
- 6.7.6 Merge Prevent Allow Medium Removal with MMC I definition.(Persistent and Prevent bit definition)
- 6.7.7 Merge Read CD recorded capacity with READ C/DVD recorded capacity.
- 6.7.8 Remove Read (12) command.
- 6.7.9 Merge MMC I Start/Stop Unit command, need to add Power Condition.
- 6.7.10 Page 53, set Read Ahead command, add a description that says if you perform command queuing this command becomes useless.
- 6.7.11 Remove Request Sense command
- 6.7.12 Remove Seek command.
- 6.7.13 Remove Test Unit Ready command.

6.8 - Review Doc 97-XXYR0, Commands Specific to CD Media Only

- 6.8.1 For the terms target or device in MMC I shall be replaced with logical unit in the MMC II document.
- 6.8.2 Table 135, Play or Scan Overlapped Command Operation, shall be replaced by the following: "If a PLAY or SCAN command is executing such that the IMMED bit in the Audio Control Page was set to one when the command started, execution of a new, overlapping command takes precedence. When the

new command can be executed to completion without disturbing execution of the PLAY or SCAN, it shall be done. Otherwise, the PLAY or SCAN must be terminated in order that the new command can be executed. The following commands shall be executed without disturbing the PLAY or SCAN command:

- REQUEST SENSE
- READ SUB-CHANNEL current position
- PAUSE/RESUME
- INQUIRY
- READ CAPACITY

All other commands and that may effect the termination of PLAY or SCAN are implementation specific.”

6.8.3 Bill McFerrin to bring forth an ANNIX for 1394 that will cover SBP implementations on 1394.

6.8.4 In the READ CD command the sector type field must be consistent with the PLAY CD command, references must be added.

6.8.5 Bill McFerrin will bring additions to MMC for CD TEXT.

6.8.6 The Read Disk and Read Track Information shall become an optional commands for CD Readers.

6.8.7 Change CD-R/E to CD-R/RW. This will be required for all sections of MMC II.

6.8.8 The Track Information Returned table 201 of SFF8090 is not up to date with MMC. It is missing the proper calculations for track size.

6.9 - Review Doc 97-yyyR0, ATAPI Implementation Notes

6.9.1 Rob Sims will review MMC annex with ATAPI Implementation Notes. The definition of the ATAPI transport version number in the Inquire data, byte 3 bits 4-7 must be clarified in the annex. The definition of padding must be added.

6.10- Review Doc 97-xxzR0, SCSI Implementation Notes

6.10.1 Ron Roberts will edit as necessary and incorporate into MMC II.

6.11 Review Doc 97-xxxR0, Support for DVD-R and DVD-RAM

6.11.1 Review of this document has been postponed.

6.12- MMC II Document Organization

6.12.1 Section 4, Models will have existing and new model descriptions. The models will include CD, DVD, changers, power control, etc.

6.12.2 New section Y that defines parameters of the mode select pages.

6.12.3 New Section X will contain all of the MMC II command descriptions. The commands shall be presented in alphabetical order.

6.12.4 New Section X1 will be Feature Set Definitions. Each feature set will be described. A core command sets for each of the feature sets shall be documented.

7.0 New Business

No new business.

8.0 Review of Action Items

8.1 Bill McFerrin to bring forth an ANNIX for 1394 that will cover SBP implementations on 1394.

8.2 Bill McFerrin will bring additions to MMC for CD TEXT. Due by the beginning of February.

8.3 Rob Sims will make a matrix chart of Feature sets and commands. Due by the beginning of February.

8.4 Rob Sims will review MMC annex with ATAPI Implementation Notes. The definition of the ATAPI transport version number in the Inquire data, byte 3 bits 4-7 must be clarified in the annex. The definition of padding must be added. Due by the beginning of February.

- 8.5 Ron Roberts will compile the first draft of MMC II and post it on the MMC reflector by mid February.
- 8.6 The MMC group is to complete a detailed review of MMC II specification and post comments on the reflector before the March meeting.

9.0 Future Meeting Schedule

9.1 Because of the successful productivity of the January meetings Ron Roberts made a suggestion that the next time MMC needs to meet is at the March X3T10 meeting in San Diego. The following meeting schedule was accepted by the group:

March 11-12	X3T10, San Diego, Hyatt Island
March 25-27	Longmount
April 8-10	X3T11, Palm Springs.

10.0 Adjournment

The meeting adjourned at 3:00 PM January 8.