Minutes of the MMC Working Group – 7 & 8 March 2006

T10 Meeting Week at:
Hilton Ocean Front Resort
23 Ocean Lane
Hilton Head Island, South Carolina, 29928

Hosted by: SCSI Trade Association (STA).

1.0 Opening Remarks
Bill McFerrin opened the meeting at 9:00AM, 7 March 2006 with the following announcement:

The MMC meeting has been authorized by INCITS T10 and will be conducted under the INCITS rules. Ad hoc meetings take no final actions, but prepare recommendations for approval by the INCITS task group. The voting rules for the meeting are those of the parent committee, INCITS T10. For the ad hoc, other than straw votes, the voting rules are: one vote per participating company.
The minutes of the MMC meeting will be posted to the T10 Reflector and will be included in the next T10 committee mailing. Attendance at a working group meeting does not count toward minimum attendance requirements for T10 membership. Working group meetings are open to any person or company to attend and to express their opinion on the subjects being discussed.

2.0 Introductions
The following members were present at this meeting:

Kenji Tokumitsu	Hitachi-LG Data Storage
Takaharu Ai	Matsushita
Robert Griswold	Microsoft Corp.
Akio Yamazaki NEC	
Mark Overby	Nvidia Corp.
Terence J. Nelson	Panasonic Technologies, Inc
William P. McFerrin	Philips Electronics/CD Edge
Keiji Katata	Pioneer Electronics Corp.
Masaetsu Takahashi	Ricoh Corporation
Norichika Mine Sony	
Shunsuke Kimura	Toshiba
Takao Shirai	TSST
Curtis Stevens	Western Digital

3.0 Document Distribution
Bill McFerrin electronically distributed the most recent revision of MMC5 – MMC5R02D.PDF.

4.0 Call for Patents
None

5.0 Approval of Agenda
Agenda items were added: MtFuji report, BDA report.

6.0 Old Business
6.1 ATA Report - McFerrin
- ❑ ATA/ATAPI-8 is likely to be delayed until Summer 2007.
- ❑ The copyright for SATA was granted only for ATA-7 and is not yet permitted for ATA-8. INCITS is working this problem and a solution is expected by end of Summer 2006.
- ❑ The changes requested by MMC WG will be put into the ATA-8 APT. This is simply removing SCSI oriented requirements specified by the ATA standards w.r.t. resets.
- ❑ In ATA-8, IDENTIFY PACKET DEVICE data will be updated to more closely match IDENTIFY DEVICE data. This includes WWN.
- ❑ Curtis Stevens (Western Digital) and Mark Overby (Nvidia) to resolve some questions in ATA:
  - Is DMA Ready used by any MM ATAPI device? The general opinion of the members present is that because ATA/ATAPI overlap has been made obsolete, DMA Ready is no longer needed. Bill McFerrin will post this question to the MtFuji website in order to avoid trouble for vendors not represented at either T10 or T13.
  - What is the content of the error register after execution of the DEVICE RESET command? It appears that the ATAPI task file should be loaded with the signature, but it is not certain. Bill McFerrin will post this question to the MtFuji website in order to avoid trouble for vendors not represented at either T10 or T13.

6.2 Mt Fuji Report - Katata
Fuji6 is complete, approved, and Submitted to SFF. Katata-san will provide a final version of the PDF specifically for posting on the T10 website. Bill McFerrin will change the references section of MMC-5 rev 2e draft to update to Fuji6.

6.3 BDA Report – Katata
Final draft of BD commands has been approved with editorial changes in progress. The final version will be transmitted to Bill McFerrin for posting on T10 website. Bill McFerrin will make appropriate changes to MMC-5 version 2e.

6.4 MMC5
6.4.1 Review changes from MMC5R02b through MMC5R02d.
Additional problems were discovered during review of those changes. These references are relative to MMC5r20d:
- Table 492 – The description of how track number 0FFh is used is not correct for the non-CD case.
- 4.5.4.3 and Table 60 need names that correctly describe what is represented.
- Also, some of the information (row 1 of table 60) is also true for DVD-RAM, HD DVD-RAM. That should be added to the DVD-RAM and HD DVD-RAM sub-clauses.
- DVD-RW is permitted only to be single session. 6.3.3.2.3 needs extra explanation. "Intermediate state" needs to be described a little.
- Change item #31 should say that the text was deleted as it applies only to RW media.
- Capitalize all cases of Logical Track.
- 6.44.3.5 fix the heading name to include HD DVD-RAM. Correct any other locations where Recording Type is used.
- Figure 23 and Figure 24 have invisible boundaries in the PDF. Correct.
- Figure 68 has invisible boundaries. Check for more.

6.4.2 Additional comments from from Tokumitsu-san, Hitachi
Many locations: the error "INVALID PARAMETER IN CDB" should be replaced by "INVALID FIELD IN CDB".

In clause 6 – Commands – each command description ends with a table labeled "Recommended Errors for XXX command". Many of the tables have missing references.

Page numbered 212, START/STOP command should be START STOP UNIT command.

Page numbered 223, Additional length field in table does not match description of field below the table. The table value is wrong. The last byte description in the table will result in a different table than MtFuji.

Page numbered 234, table 133 has a missing reference.

Page numbered 240, table 143 – the feature code field is missing.

Page numbered 243, table 147 – misaligned columns in Data Type Supported field.

Page numbered 247, table 156 – first row, center column – the sentence is incomplete.

Page numbered 256:
Current text: If the version K bit is set to one, the Drive is able to read BD-RE discs of class 0 and version K.
Should be: If the Version K bit of Class M is set to one, the Drive is able to read BD-RE discs of Class M and Version K.

Page numbered 257, table 167 – byte 4, bit 0 is the SVNR bit (Supports VNR) is not shown.

Page numbered 258:
Current text: If the version K bit is set to one, the Drive is able to read BD-RE discs of class 0 and version K.
Should be: If the Version K bit of Class M is set to one, the Drive is able to read BD-RE discs of Class M and Version K.

Page numbered 260, table 172 – the line between row 1 and row is missing.

Page numbered 273, table 194 – additional length field should be labeled 00h.

Page numbered 275, table 199 – rows 1 and 2 should be left justified and should reference only Key Class = 0.

Page numbered 276, table 200 – rows labeled 18, 19 and Century should be deleted.

Page numbered 296, line above table 230 references table 229 but should reference table 230.

Page numbered 300, table 235 – borders in bytes 2-5 must be invisible.

Page numbered 323, table 249 – bytes 2-3 description should be left justified.

Page numbered 324, table 251 – column 1 – format type 0 is not only for rewritable media. BD-R supports format type 0.
Table 251 – row for format type 30h should show "Spare area size in Clusters" as content of Type Dependent Parameter.

Page numbered 325, table 252, column 1 heading should be "Format Sub-type".

Page numbered 326, 6.5.4.2.1.7 change sub-type to format sub-type.

Page numbered 332, table 257, column 1 heading should be "Format Sub-type".
Near middle of page – the function labeled IPF should be changed to FI. Last sentence prior to 6.5.4.2.15.1 should begin "Format Sub-type". The reference should be to table 257.

Page numbered 333, 6.5.4.2.16 refers to "User Data Size (field)". The MMC reference should be "Number of Blocks field".

Page numbered 334, Format Sub-type should be used in place of Sub-type.

Page numbered 359, table 305 has several cells that should be left justified.

Page numbered 360, table 306 has a field that should be left justified.

Page numbered 372, table 327 – ditto.

Page numbered 477, table 463 – ditto on left alignment. "Block Length" field should be labeled "Block Length/Spare Area Size".

Page numbered 503 – and others. List near top of page should reference Logical Track and Session only – not Border or Rzone. Correct table 491 field if necessary.

Page numbered 614, TSR is not a field in the WRITE AND VERIFY command.

Comments from Ai-san, Panasonic
Page 88, "a the Host" should be "a Host".
Page 89, old text "Once a method is determined, is cannot be changed until after the current Border is closed." New text: "Once a method is determined, it is not changeable until the RZone is closed."

Page 223, Data Types supported field is specific to CD. For DVD-R, only Data Type 8 is permitted. A change is needed in 7.5.4.13 (page 635) to clarify this. Note 7: ASRV should be ARSV. Specify that the values are associated with the currently mounted medium. Support is dependent upon the media type.

When zero is the only available Link Size, the Number of Link sizes shall be set to 1 and the first Link Size shall be set to 0.

Note: In versions prior to 0011b, it was permitted that Number of Link sizes is zero, meaning that only zero is available as a Link Size.

Page 224, above table 113, delete the phrase: "with the Current bit set to one".

Table 113, replace the text: "current when this feature is current and is mandatory only for CD-RW and DVD-RW." With " present. Blanking is attempted only on CD-RW or DVD-RW." Remove the sentence that begins: "Shall not be supported…".

Page 226, replace first 2 sentences of the description of current bit with a reference to 5.2.2.4. The third sentence is useful and needs to stay. The document should be checked for other, similar cases.

Table 118, page 227 has a problem. Format Type 0 is mandatory for all formattable media. There are other Format Types that are mandatory according to media type. Include every case.

Page 229, remove the DVD example. The BD-R RRM example is permitted.

Page 248, describe link size = 0 case as in Incremental Streaming Writable case.

Page 250, opening paragraph, SRM+LOW should be SRM+POW. Include mandatory commands table (table 18 in BD commands 0.99).

Page 270, the version will soon be 0100b (BDA). Page 271, table 192, SET READ AHEAD is no longer mandatory.

In MMC generic terms define: invisible logical track as the blank, default logical track. Incomplete logical track as the non-blank, open default logical track. Correct various places in the document accordingly. Consider Fuji Rzone model.

Page 316, 6.3.3.9.3, paragraph 3. Change SRM to SRM-POW.

Page 323, 6.5.3.2, last sentence, "in found" should be "is found".

Page 37, table 4 needs an additional row for the "not formatted" case.

Page 332, table 257, row 1: change "blank" to "unformatted".

Page 337, second paragraph – clarify that this is reported only in response to a REQUEST SENSE poll for format progress. The error is also not correct. It should be NO SENSE/NO ADDITIONAL SENSE/FORMAT IN PROGRESS (0/0/4). Neither is in the Annex F tables.

6.4.3 Additional comments from Ai-san, Panasonic
Page 360, table 307 list should be changed:
Zone boundary Information → Physical Boundary Information
(LBA is that which precedes the Physical Boundary)
PDL is unique to HD DVD/DVD-RAM.
SDL → Any HDM that does not use the primary space associated with the LBA. I.e. Start LBA of a relocated area.
Use BD commands description.
Add an error description in the case that the currently mounted media is not formatted.

Page 362, change text as follows:
The Blocking Factor field shall indicate the number of logical blocks per DS #n bit. In the case of DVD-RW and DVD-RAM, this field is set to 16 as an ECC Block. In the case of HD DVD-RAM, BD-R and BD-RE, this field is set to 32 as an ECC Block or Cluster.

Page 373,
Change the text: "This field is defined as Legacy." To "This field is defined as Legacy and should be set to zero."

Page 390, table 357 is not clear for either DVD-RAM or HD DVD-RAM.
Include Unformatted DVD-RAM, Unformatted HD DVD-RAM with Unformatted BD-RE.
Change Formatted BD-RE description to:
"The READ CAPACITY LBA is the last recordable LBA on the media. The LBA is calculated from DDS contents."
Include Formatted DVD-RAM and Formatted HD DVD-RAM in column 1.

Page 442: Delete the text – "The Allocation Length field in the CDB

specifies the Format Code 19h: HD DVD-R Medium Status maximum length of the descriptor returned to the Host." (Copy-paste error)

Page 448: Change the text "Jump Interval size field shall be set to 0." To "Manual Layer Jump Address field shall be set to 0."

Page 479, table 467, Format Type 0 needs 3 rows: BD-R, BD-RE, and others. This is primarily because the Type Dependent Parameter is different in each case.

Page 481, continuation of table 467, type 32h. The Type Dependent Parameter cannot be specified precisely, so the field should be zeros.

Page 501, when unformatted media that requires formatting is present, the command should post an error e.g. MEDIA NOT FORMATTED.

Page 559 and forward. The method and format for receiving a Time Stamp for media type 0 is identical to the description to receive a Time Stamp for media type 1. The drive SHALL maintain only one copy that is the most recently received time stamp.

Page 477, table 464 and 465 are very general while the BD commands describe the content in detail for BD. Try to fix the inequity.

Page 422, change the text:
"The Copyright Protection System Type field indicates the presence of data structures specific to a copyright protection system. Three values are defined, 00h indicates there is no such data and 01h indicates a specific data structure for CSS/CPPM exists, and 02h indicates a specific data structure for CPRM exists. All other values are reserved."
To
"The Copyright Protection System Type field indicates the presence of data structures specific to a copyright protection system. Three values are defined, 00h indicates there is no such data and 01h indicates a specific data structure for CSS/CPPM exists, and 02h indicates a specific data structure for CPRM exists, 03h indicates a specific data structure exists for AACS with HD DVD content, and 10h indicates a specific data structure exists for AACS with BD content. All other values are reserved."

7.0 New Business
Review MMC-6 Project Proposal.
There were a few instances of misspelled words. Additional changes as required by INCITS are needed:
- An ISO number translation of associated standards is needed.
- A clause on measurement standards is now required.

8.0 Review of Action Items
- Bill McFerrin will work on draft 2e to meet the goals:
- Rev 2e will be posted to the T10 reflector by end of day Tuesday (14 March US). Comments must be received by end of day Friday (17 March US). The final version (2f) will be sent for T10 letter ballot before 20 March US.
- Bill McFerrin will post the ATAPI DMA ready question and the ATAPI DEVICE RESET question to MtFuji reflector. We wish to be certain that no vendor is adversely affected.
- Bill McFerrin will post the T10 version of MtFuji6 to the T10 website.

9.0 Future Meeting Schedule
T10 week: May 9 and 10
The Fairmont Hotel
170 South Market Street
San Jose, CA 95113
Phone: 1-408-998-1900
Reservations: 1-408-998-1900
URL: http://www.fairmont.com/sanjose/

(Sponsored by Nvidia Corp.)

The MMC WG will again request 2 days for a meeting room: Tuesday and Wednesday.

10.0 Adjournment
The meeting was adjourned at noon, 8 March 2006.