

**Accredited Standards Committee \***  
**NCITS, Information Processing Systems**

**Doc. No.** X3T10/97-221R0

**Date:** July 16, 1997

**Project:** X3T10-1228D

**Ref. Doc.:** X3T10/94-057

**Reply to:** R. Roberts

**To: Membership of X3T10**  
**From: R. Reisch/R. Roberts**  
**Subject: Minutes of X3T10 MMC II Working Group - July 15 and 16, 1997**

AGENDA

DRAFT 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 Section 5 "Feature Sets" R. Hines
  - 6.2 - Review MMC2 Draft ANNEXES M ,N, O, P
  - 6.3 - Review MMC2 Document D1228-R1
- 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 07/15/97. He thanked John Lohmeyer of Symbios 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:

\* Operating under the procedures of The American National Standards Institute.

\_\_\_\_\_ **Secretariat, Computer and Business Equipment Manufacturers Association (CBEMA)**

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### 3.0 Document Distribution

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

Document Number	Title	File Name
1228D	SCSI 3 Multimedia Commands	d1228_r01.doc

Randy Hines distributed the following hard and soft documents:

Features and Profiles	cls05r1.doc
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### 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 Section 5 "Feature Sets" R. Hines

Randy presented the following document and a general agreement to refer to any called a "feature set" will now be referred to as a "feature":

## 1. Features and Profiles

### 1.1. Introduction

A feature is a set of commands and mode parameters that specify the capabilities of a logical unit and its associated medium - one or more features may be supported by a particular logical unit. In general, features associated with device capabilities are static while features associated with medium capabilities are dynamic. While features are optional, the commands and mode parameters specified by a feature are mandatory. If a particular feature is reported, the logical unit or its transport shall implement all of the commands and mode parameters of that feature.

Classification by features allows logical units to report and provide layers of functionality; it also allows applications to use logical units in a precise and consistent manner. For example to illustrate layered aspect, consider two CD-ROM logical units where one particular CD-ROM logical unit may be used as both a read only block device and as a CD-Audio player. These two capabilities are reported as two separate features. Another CD-ROM logical unit may only be capable of being used as a read only block device, and it would not report the feature that specifies CD-Audio support.

Classification by features also allows applications to use devices according to the requirements of the application. For example, a CD-ROM logical unit and a hard disk drive may both be used by the same read only block device feature - the application does not need to use other features supported by the CD-ROM logical unit if the application does not them.

Another important characteristic of classification by features is its dynamic nature; a device that is capable of reading both DVD-ROM and CD-ROM medium reports different features according to whether a DVD-ROM or CD-ROM medium is loaded.

A profile is a set of features that specifies the behavior of a device class over a transport. Classification by profiles provides a means to:

1. assign the implementation of a feature (or part of a feature) between a logical unit and its transport
2. limit command fields and mode parameters based upon the capabilities of a transport
3. extend command fields and mode parameters
4. require additional commands and mode parameters as mandatory

In addition to the transport aspect, a profile enables an application: to load and initialize the appropriate modules that support the logical unit, to provide iconic representation of the logical unit, and to determine the default file system of the logical unit and its medium.

## **1.2. Feature Definitions**

Features shall be identified by a feature code. The maximum number of feature sets is 65,536 and the feature code value of 0 is reserved.

Feature Code	Feature
0	Reserved
1	Core Device
2	Microcode Upgrade
3	Class 1 Random Readable Block Device
4	Class 1 Random Writable Block Device
5	Class 2 Random Writable Block Device
6	Power Management
7	S.M.A.R.T.
8	Event Notification
9	Embedded Changer
10	Removable Medium
11	CD-Audio Analog Output
12	CD-Audio Digital Output
13	CDROM
14	CDR
15	CDRW
16	DVD-ROM
17	DVD-R
18	DVD-RAM
19	DVD-Video
20	Sequential
21	A/V Streaming

*NOTE: is command timeout a feature? serial disk? serial tape? sequential?*

### 1.2.1. Core Device Feature

All logical units that conform to this specification shall implement the commands specified in “Table 1 - Core Device Commands”.

**Table 1 - Core Device Commands**

Op Code	Command Description
12h	INQUIRY
55h	MODE SELECT (10)
5Ah	MODE SENSE (10)
??h	REPORT CONFIGURATION
03h	REQUEST SENSE
00h	TEST UNIT READY

*Note: is ref field needed?*

*Note: Report configuration needs an op code.*

### 1.2.2. Microcode Upgrade Feature

Logical units that support microcode upgrades shall implement the command specified in “Table 2 - *Microcode Upgrade Command*”.

**Table 2 - Microcode Upgrade Command**

Op Code	Command Description
3Bh	WRITE BUFFER and Mode 101b (Download microcode and save)

### 1.2.3. Class 1 Random Readable Block Device Feature

Logical units that may be used as a random readable block device shall implement the commands specified in “Table 3 - *Class 1 Random Readable Block Device Commands*”.

**Table 3 - Class 1 Random Readable Block Device Commands**

Op Code	Command Description
28h	READ (10)
35h	SYNCHRONIZE CACHE

### 1.2.4. Class 1 Random Writable Block Device Feature

Logical units that may be used as a random writable block device shall implement the commands as specified in “Table 4 - *Class 1 Random Writable Block Device Commands*”.

**Table 4 - Class 1 Random Writable Block Device Commands**

Op Code	Command Description
2Ah	WRITE (10)
2Eh	WRITE AND VERIFY (10)

### 1.2.5. Class 2 Random Writable Block Device Feature

Logical units that use medium that may be formatted shall the commands specified in “Table 5 - *Class 2 Random Writable Block Device Commands*”.

**Table 5 - Class 2 Random Writable Block Device Commands**

Op Code	Command Description
04h	FORMAT UNIT

### 1.2.6. Power Management Feature

Logical units that support power management shall implement the commands specified in “Table 6 - *Power Management Commands*” and the mode parameters specified in “Table 7 - *Power Management Mode Parameters*”.

**Table 6 - Power Management Commands**

Op Code	Command Description
4Ah	GET EVENT STATUS NOTIFICATION
1Bh	START/STOP UNIT and the Power Conditions

1Bh	START/STOP UNIT and the Power Conditions field
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**Table 7 - Power Management Mode Parameters**

Page Code	Page Description
1Ah	Power Condition

**1.2.7. S.M.A.R.T. Feature**

The S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) is a technology developed to manage the reliability of data storage Logical Units. S.M.A.R.T.-capable PC systems have the goal of enhancing system reliability by warning users of some pending Logical Unit or media failures. With sufficient warning, users may have the opportunity to back up vital data and replace suspect Logical Units prior to data loss or unscheduled down time. S.M.A.R.T. capability is a key new element in the PC architecture that will one day provide new levels of data integrity and data availability.

Peripheral data storage Logical Units are complex electromechanical Logical Units and, as such, can suffer performance degradation or failure due to a single event or a combination of events. Some events are immediate and catastrophic while others cause a gradual degradation of the Logical Unit's ability to perform. It is possible to predict a portion of the failures, but S.M.A.R.T. cannot and will not predict all future Logical Unit failures. S.M.A.R.T. should be treated as a feature to assist the computer user in preventing some but not all system down time due to Logical Unit failure.

S.M.A.R.T. capable Logical Units monitor a wealth of information internal to the Logical Unit to assess reliability and predict an impending Logical Unit or medium failure. This information is, in some cases, available through the interface and can be presented to end-users via drivers and supporting applications. This data should not be presented to or interpreted by system users or managers to predict the integrity or reliability of a S.M.A.R.T. Logical Unit. The predictive algorithms in a S.M.A.R.T. Logical Unit are designed to interpret internal conditions in order to detect impending failures and thus users or system managers should not attempt to predict impending Logical Unit failure from this internal data.

S.M.A.R.T. data are not linear predictors of the degrading reliability of a S.M.A.R.T. capable Logical Unit. It is the responsibility of a S.M.A.R.T. Logical Unit to predict an impending failure and report that failure via an Informational Exception Condition.

Logical units that support Self Monitoring Analysis and Reporting shall support the mode pages specified in "Table 8 - S.M.A.R.T. Mode Parameters".

**Table 8 - S.M.A.R.T. Mode Parameters**

Page Code	Page Description
1Dh	Fault/Failure Reporting

### 1.2.8. Event Notification Feature

The Event Notification feature provides a means for an initiator to receive notification of events that are beyond the control of an initiator.

A logical unit that implements Event Notification shall support the commands specified in “Table 9 - Event Notification Commands”.

**Table 9 - Event Notification Commands**

Op Code	Command Description
4Ah	GET EVENT STATUS NOTIFICATION (GESN)

In the Polling Mode of Event Notification, an initiator shall repeatedly issue GESN commands with an immediate bit of 1. The logical unit shall complete these commands upon receipt, supplying the initiator with information on the most recent event occurrences, as described in the GESN command. If an event occurrence of the class(es) requested is not in the logical unit event queue, the Logical Unit shall complete the GESN command, and shall set the NEA bit to 1. This shall not be deemed an error.

If command queuing is supported, the host may issue a GESN command with an immediate bit of 0. The command shall not complete until an event occurrence of the class(es) requested is either in the event queue, or occurs.

The logical unit shall maintain a separate queue for each class of Event Notification(s) supported. Events that are generated shall be placed at the tail of the event queue. The depth of the queue(s) is vendor specific, although it shall be at least one. If an overflow occurs, the logical unit shall maintain the most recent Events in the queue.

Each GESN command shall report only one event. If multiple Event Classes are requested and multiple events are available, the logical unit shall report the Event in the Event Class with the lowest Notification Class ordinal.

### 1.2.9. Embedded Changer Feature

Logical units that support an embedded changer shall implement the commands specified in “Table 10 - Embedded Changer Command”.

**Table 10 - Embedded Changer Command**

Op Code	Command Description
A6h	LOAD/UNLOAD MEDIUM
BDh	MECHANISM STATUS

### 1.2.10. Removable Medium Feature

A major shortcoming of removable media Logical Units on PC platforms is their inability to report to the host when the user attempts to eject the medium. Currently most removable media Logical Units just eject the medium when the user presses the Eject button, and potentially any data the operating system has not saved to the Logical Unit is

lost. Various volume tracking and locking schemes reduce this risk, but do not eliminate it. Using this feature, Logical Units will have a means of communicating to the host that the user wants to eject the medium or has inserted a new medium.

A logical unit that implements the Removable Medium Feature shall support the commands as specified in "Table 11 - Removable Medium Commands".

**Table 11 - Removable Medium Commands**

<b>Op Code</b>	<b>Command Description</b>
4Ah	GET EVENT STATUS NOTIFICATION
1Eh	PREVENT/ALLOW
25h	READ CAPACITY
1Bh	START/STOP UNIT and load eject (LOEJ) bit

This section defines a protocol for providing this functionality for removable media Logical Units. The support is enabled using the PREVENT/ALLOW command (Persistent Bit), and the media status is retrieved using the GET EVENT STATUS NOTIFICATION command.

When the Persistent Prevent state is entered, the media shall remain locked in the Logical Unit, until the host issues an eject request, or a power on or hard reset condition occurs. The Persistent Prevent state shall be maintained after the eject request. New media that is inserted into the Logical Unit shall be locked in the Logical Unit after the logical unit reports the NEW MEDIA event. Prior to reporting the NEW MEDIA event, the logical unit may eject media without an explicit eject command from the host. This allows the user to remove incorrectly inserted media without having to wait for host intervention.

While in the Persistent prevent state, the logical unit shall generate Events upon receipt of a User Eject request. The logical unit shall not eject the media on receipt of these requests, if the logical unit has already reported a NEW MEDIA event for this media. When the host receives the Eject Request, and determines that it is safe to eject the medium, an eject command will be issued, at which time the logical unit shall eject the medium.

The logical unit shall only generate MSEN (EJECT REQUEST) events after reporting a MSEN (NEW MEDIA) event, and prior to reporting a MSEN (MEDIA REMOVAL) event for the given media.

To maintain compatibility with existing BIOS implementations and operating systems, the logical unit shall default to Persistent Prevent disabled. When the host enables the support using the PREVENT ALLOW command, the logical unit shall respond as described in this specification. When the host disables this feature, the logical unit must default to normal operating modes. A power on or hard reset shall cause the logical unit to the default Persistent Prevent state.

If the Logical Unit is unable to maintain media status information across a reset or power cycle, the Logical Unit shall generate a NEW MEDIA event.



Commands must be processed exactly the same as they would be if Persistent Prevent was not enabled. For compatibility reasons, UNIT ATTENTION status conditions must still be returned. However, the logical unit shall not return the UNIT ATTENTION status on a GESN command. For example, if the user inserts a new medium and the logical unit is accessed with a command, the CHECK CONDITION with UNIT ATTENTION shall be reported, but the logical unit shall also report the NEW MEDIA Event with the next available GESN (Media Status) command.

If a changer type Logical Unit uses media status operation, it shall use the following variations. If the changer Logical Unit supports individual slot load and unload capability, the slot number(s) exhibiting the media status change shall be reported in the slot fields of the Media Status Event Data. If the changer Logical Unit uses a cartridge load mechanism, the slot fields shall be set to the start and end slot numbers present in the cartridge.

For non-immediate GESN commands, the host shall use exactly one GET EVENT STATUS NOTIFICATION request for the entire changer Logical Unit. The Logical Unit shall respond as indicated in the Asynchronous Operation section above, indicating the slot information in the Request Sense Data as described above.

**1.2.11. CD-Audio Analog Output Feature**

Logical units that have a CD-Audio analog output shall support the commands specified by "Table 12 - CD-Audio Analog Output Commands" and the mode pages specified in "Table 13 - CD-Audio Analog Output Mode Pages".

A logical unit without a CD-Audio output shall respond to a PLAY AUDIO command, which has a transfer length of zero, with CHECK CONDITION status, and set the sense key to ILLEGAL REQUEST. This behavior allows an initiator determine if a CD-Audio analog output is supported.

**Table 12 - CD-Audio Analog Output Commands**

OpCode	Command Description
BDh	MECHANISM STATUS
4Bh	PAUSE/RESUME
45h	PLAY AUDIO (10)
47h	PLAY AUDIO MSF
42h	READ SUBCHANNEL
4Eh	STOP PLAY/SCAN

**Table 13 - CD-Audio Analog Output Mode Pages**

Page Code	Page Description
0Eh	CD Audio Control Mode Page

### 1.2.12. CD-Audio Digital Output Feature

Logical units that have a CD-Audio digital output, shall support the commands specified by “Table 14 - CD-Audio Digital Output Commands” and mode pages specified by “Table 15 - CD-Audio Digital Output Mode Pages”.

**Table 14 - CD-Audio Digital Output Commands**

OpCode	Command Description
BDh	MECHANISM STATUS
4Bh	PAUSE/RESUME
45h	PLAY AUDIO (10)
47h	PLAY AUDIO MSF
4Eh	PLAY CD
42h	READ SUBCHANNEL
4Eh	STOP PLAY/SCAN

**Table 15 - CD-Audio Digital Output Mode Pages**

Page Code	Page Description
0Eh	CD Audio Control Mode Page

### 1.2.13. CDROM Feature

Logical units that read CDROM media shall support the commands specified in “Table 16 - CDROM Commands”.

**Table 16 - CDROM Commands**

Op Code	Command Description
BEh	READ CD
51h	READ DISC INFORMATION
43h	READ TOC/PMA/ATIP
52h	READ TRACK INFORMATION

### 1.2.14. CDR Feature

Logical units that write and read CDR media shall support the commands specified in “Table 17 - CDR Commands”.

**Table 17 - CDR Commands**

Op Code	Command Description
5Bh	CLOSE TRACK/SESSION
53h	RESERVE TRACK

### 1.2.15. CDRW Feature

Logical units that write and read CDRW media shall support the commands specified in “Table 18 - CDRW Command”.

**Table 18 - CDRW Command**

Op Code	Command Description
A1h	BLANK

**1.2.16. DVD-ROM Feature**

Logical units that read CDRW media shall support the commands specified in “Table 19 - DVD-ROM Commands”.

**Table 19 - DVD-ROM Commands**

Op Code	Command Description
51h	READ DISC INFORMATION
ADh	READ DVD STRUCTURE
52h	READ TRACK INFORMATION

**1.2.17. DVD-R Feature**

Logical units that write and read DVD-R media shall support the commands specified in “Table 20 - DVD-R Commands”.

**Table 20 - DVD-R Commands**

Op Code	Command Description

**1.2.18. DVD-RAM Feature**

Logical units that write and read DVD-RAM media shall support the commands specified in “Table 21 - DVD-RAM Commands”.

**Table 21 - DVD-RAM Commands**

Op Code	Command Description

**1.2.19. DVD-Video Feature**

Logical units that support DVD-Video CSS (Content Scramble System) shall implement the commands specified by "Table 22 - DVD-Video Commands".

**Table 22 - DVD-Video Commands**

Opcode	Command Description
A2h	REPORT KEY
A3h	SEND KEY
A7h	SET READ AHEAD

### 1.2.20. Serial Disks Feature

### 1.2.21. Serial Tapes Feature

## 1.3. Profile Definitions

### 1.3.1. Disk Drive Profiles

#### 1.3.1.1. 1394 Simple Hard Disk Drive Profile

Logical units that support the 1394 Simple Hard Disk Drive Profile shall implement the features shown in “Table 23 - 1394 Simple Hard Disk Drive Features”.

**Table 23 - 1394 Simple Hard Disk Drive Features**

<b>Command/Profile/Feature</b>	<b>Extensions and Limitations</b>	<b>Type</b>	<b>Ref</b>
Core Device	INQUIRY and REQUEST SENSE shall be supported by SBP-2 transport; MODE SENSE/MODE SELECT block descriptors shall not be supported	M	
Class 1 Random Readable Block Device	Mode Page 3Eh shall be supported	M	
Class 1 Random Writable Block Device	FUA field shall be supported in WRITE(10);	M	
Power Management	load eject (LOEJ) bit of START/STOP UNIT shall not be supported	M	
Event Notification	Asynchronous mode of GET EVENT STATUS NOTIFICATION shall be supported by SBP-2 transport	M	

#### 1.3.1.2. 1394 Removable Medium Disk Drive Profile

Logical units that support the 1394 Simple Hard Disk Drive Profile shall implement the features shown in “Table 23 - 1394 Simple Hard Disk Drive Features”.

**Table 24 - 1394 Removable Medium Disk Drive Features**

<b>Command/Profile/Feature</b>	<b>Extensions and Limitations</b>	<b>Type</b>	<b>Ref</b>
Core Device	INQUIRY and REQUEST SENSE shall be supported by SBP-2 transport; MODE SENSE/MODE SELECT block descriptors shall not be supported	M	
Class 1 Random Readable Block Device		M	
Class 1 Random Writable Block Device	FUA field shall be supported in WRITE(10);	M	
Class 2 Random Writable Block Device		M	
Power Management		M	
Event Notification	Asynchronous mode of GET EVENT STATUS NOTIFICATION shall be supported by SBP-2 transport	M	
Removable Medium		M	

**1.3.2. CDROM Profiles**

**1.3.2.1. 1394 CDROM Profile**

Logical units that support the 1394 CDROM Profile shall implement the features shown in “Table 25 - 1394 CDROM Features”.

**Table 25 - 1394 CDROM Features**

<b>Command/Profile/Feature</b>	<b>Extensions and Limitations</b>	<b>Type</b>	<b>Ref</b>
Core Device	INQUIRY and REQUEST SENSE shall be supported by SBP-2 transport; MODE SENSE/MODE SELECT block descriptors shall not be supported	M	
Class 1 Random Readable Block Device		M	
Power Management		M	
Event Notification	Asynchronous mode of GET EVENT STATUS NOTIFICATION shall be supported by SBP-2 transport	M	
Removable Medium		M	
CDROM		M	

*Note: should optional features be listed?*

**1.3.2.2. ATAPI CDROM Profile**

Logical units that support the ATAPI CDROM Profile shall implement the features shown in “Table 26 - ATAPI CDROM Features”.

**Table 26 - ATAPI CDROM Features**

<b>Command/Profile/Feature</b>	<b>Extensions and Limitations</b>	<b>Type</b>	<b>Ref</b>
Core Device	MODE SENSE/MODE SELECT block descriptors shall not be supported	M	
Class 1 Random Readable Block Device		M	
Removable Medium		M	
CDROM		M	

**1.3.2.3. SCSI CDROM Profile**

Logical units that support the ATAPI CDROM Profile shall implement the features shown in “Table 27 - SCSI CDROM Features”.

**Table 27 - SCSI CDROM Features**

<b>Command/Profile/Feature</b>	<b>Extensions and Limitations</b>	<b>Type</b>	<b>Ref</b>
Core Device		M	
Class 1 Random Readable Block Device		M	
Removable Medium		M	
CDROM		M	

**1.3.3. CDR Profiles**

**1.3.3.1. 1394 CDR Profile**

Logical units that support the 1394 CDR Profile shall implement the features shown in “Table 28 - 1394 CDR Features”.

**Table 28 - 1394 CDR Features**

<b>Profile/Feature/Command</b>	<b>Extensions and Limitations</b>	<b>Type</b>	<b>Ref</b>
1394 CDROM		M	
CDR		M	

**1.3.3.2. ATAPI CDR Profile**

Logical units that support the ATAPI CDR Profile shall implement the features shown in “Table 29 - ATAPI CDR Features”.

**Table 29 - ATAPI CDR Features**

<b>Profile/Feature/Command</b>	<b>Extensions and Limitations</b>	<b>Type</b>	<b>Ref</b>
ATAPI CDROM		M	
CDR		M	

**1.3.3.3. SCSI CDR Profile**

Logical units that support the ATAPI CDR Profile shall implement the features shown in “”.

**Table 30 - SCSI CDR Features**

<b>Profile/Feature/Command</b>	<b>Extensions and Limitations</b>	<b>Type</b>	<b>Ref</b>
SCSI CDROM		M	
CDR		M	

**1.3.4. CDRW Profiles**

**1.3.4.1. 1394 CDRW Profile**

Logical units that support the 1394 CDRW Profile shall implement the features shown in “Table 31 - 1394 CDRW Features”.

**Table 31 - 1394 CDRW Features**

<b>Command/Profile/Feature</b>	<b>Extensions and Limitations</b>	<b>Type</b>	<b>Ref</b>
1394 CDROM		M	
1394 CDR		M	
CDRW		M	

*Note: do not show 1394 CDROM?*

**1.3.4.2. ATAPI CDRW Profile**

Logical units that support the ATAPI CDRW Profile shall implement the features shown in “”.

**1.3.4.3. SCSI CDRW Profile**

Logical units that support the ATAPI CDRW Profile shall implement the features shown in “”.

**1.3.5. DVD-ROM Profiles**

**1.3.5.1. 1394 DVD-ROM Profile**

Logical units that support the 1394 DVD-ROM Profile shall implement the features shown in “Table 32 - 1394 DVD-ROM Features”.

**Table 32 - 1394 DVD-ROM Features**

Command/Profile/Feature	Extensions and Limitations	Type	Ref
Core Device	INQUIRY and REQUEST SENSE shall be supported by SBP-2 transport; MODE SENSE/MODE SELECT block descriptors shall not be supported	M	
Class 1 Random Readable Block Device		M	
Power Management		M	
Event Notification	Asynchronous mode of GET EVENT STATUS NOTIFICATION shall be supported by SBP-2 transport	M	
Removable Medium		M	
DVD-ROM		M	

**1.3.5.2. ATAPI DVD-ROM Profile**

Logical units that support the ATAPI DVD-ROM Profile shall implement the features shown in “Table 33 - ATAPI DVD-ROM Features”.

**Table 33 - ATAPI DVD-ROM Features**

Command/Profile/Feature	Extensions and Limitations	Type	Ref
Core Device	MODE SENSE/MODE SELECT block descriptors shall not be supported	M	
Class 1 Random Readable Block Device		M	
Power Management		M	
Event Notification		M	
Removable Medium		M	
DVD-ROM		M	

**1.3.5.3. SCSI DVD-ROM Profile**

Logical units that support the SCSI DVD-ROM Profile shall implement the features shown in “Table 34 - SCSI DVD-ROM Features”.

**Table 34 - SCSI DVD-ROM Features**

Command/Profile/Feature	Extensions and Limitations	Type	Ref
Core Device		M	
Class 1 Random Readable Block Device		M	
Power Management		M	
Event Notification		M	
Removable Medium		M	
DVD-ROM		M	



### **1.3.6. DVD-R Profiles**

#### **1.3.6.1. 1394 DVD-R Profile**

Logical units that support the 1394 DVD-R Profile shall implement the features shown in “”.

#### **1.3.6.2. ATAPI DVD-R Profile**

Logical units that support the ATAPI DVD-R Profile shall implement the features shown in “”.

#### **1.3.6.3. SCSI DVD-R Profile**

Logical units that support the SCSI DVD-R Profile shall implement the features shown in “”.

### **1.3.7. DVD-RAM Profiles**

#### **1.3.7.1. 1394 DVD-RAM Profile**

Logical units that support the 1394 DVD-RAM Profile shall implement the features shown in “”.

#### **1.3.7.2. ATAPI DVD-RAM Profile**

Logical units that support the ATAPI DVD-RAM Profile shall implement the features shown in “”.

#### **1.3.7.3. SCSI DVD-RAM Profile**

Logical units that support the SCSI DVD-RAM Profile shall implement the features shown in “”.

### **1.3.8. Tape Profiles**

#### **1.3.8.1. 1394 Tape Profile**

Logical units that support the 1394 Tape Profile shall implement the features shown in “”.

#### **1.3.8.2. ATAPI Tape Profile**

Logical units that support the ATAPI Tape Profile shall implement the features shown in “”.

#### **1.3.8.3. SCSI Tape Profile**

Logical units that support the SCSI Tape Profile shall implement the features shown in “”.

The review of Randy’s document prompted several enhancements and the following issues:

1. Define a Morphing Feature set that includes the Persistent bit set in the Prevent/Allow command.
2. Multiple initiators environments must work with defined feature sets. In the future peripherals will be controlling other peripherals. A simple multiple

initiator environment could be a host and a front panel display that supports record.

3. Support for 10 and 12 Byte commands.
4. Hard disk mode page
5. Smart mode page.
6. What will be done with unsolicited status notification.
7. Request sense command should become part of the core feature set so that additional error data not provided by the 1394 protocol can be reported.

6.2 - Review MMC2 Draft ANNEXES M ,N, O, P  
Completed in the previous agenda item.

6.3 - Review MMC2 Document D1228-R1 Section 6

6.3.1 A straw vote was taken to forward at the July 17 plenary the following recommendation:

Those areas that are used by MMC-2 that are different/new from SPC-2 be included into the SPC - 2 effort and not included in the MMC-2 document. These include but are not limited to:

- Request Sense
- Inquiry
- Test Unit Ready
- Mode Sense/Select
- Write Buffer
- Error Reporting
- Man./Opt. Command def.
- Power Management
- Time-out
- Get Event Status Notification
- Persistent Prevention
- Send Event
- SMART
- Get Configuration (Morphing)

The MMC group will bring proposals for these to the SPC-2 group. In addition SBC will no longer be a normative reference for MMC-2.

The vote passed 8 for, 0 against and 1 abstention.

Significant changes to the command section of MMC II:

- Made the PLAY CD command obsolete, the next version of MMC(III) the command will be removed.
- Made the READ BUFFER CAPACITY command obsolete, the next version of MMC(III) the command will be removed.
- Made the READ CD/DVD RECORDED CAPACITY command obsolete, the next version of MMC(III) the command will be removed.
- Made the READ HEADER command obsolete, the next version of MMC(III) the command will be removed.
- Made the READ MASTER CUE command obsolete, the next version of MMC(III) the command will be removed.
- Made the SET C/DVD SPEED Command obsolete, the next version

of MMC(III) the command will be removed.

-The SYNCHRONIZE CACHE Command's name has been changed to FLUSH CACHE.

-The following purposed MMC command OP codes will be recovered:

48	Play Track Index
49	Play Track Relative
B8 & BB	Set Speed
AA	Write CD
A2	Write CD MSF

-The following new OP code assignments are requested:

OP Code	Command Name	Device Class
46	Get Configuration	All Devices
4A	Get Event Status Notification	All Devices
4F	Send Event	All Devices
23	Read Format Capacities	D/W/R/O
A3	Send Key	R
A4	Report Key	R
A7	Set Read Ahead	R
AC	Report Performance	D/W/R/O
AD	Send DVD Structure	R
B6	Set Streaming	D/R

-Rename the CD devices class to C/DVD.

-Ask for a new device class, X.

## 7.0 New Business

### 8.0 Review of Action Items

Ten byte commands must be supported. How to manage feature sets that have 10 and 12 byte commands will have to be resolved.

A feature set must be immutable (unchangeable) in time. Once a feature set is defined it will not be changed. A change to a feature set will require a new feature set.

The group will devise a new table name for Recommended Errors .

Randy of Philips and Dave of IOMEGA will research the use of the Read CD/DVD Recorded capacity command.

Ron Roberts will maintain record speed information when integrating DVD information into MMC II.

Ron Roberts and Devon Worrell will resolve NDA issues associated with DVD-R and DVD-RAM

9.0 Future Meeting Schedule

Next meeting in San Jose the week of August 11 site to be determined.

10.0 Adjournment

The meeting adjourned at 5:00 PM, July 16, 1997.