

X3, Information Processing Systems

Doc.No. 96-250R0.doc
Date: Sept 20, 1996
Project: X3T10-1048D
Ref. Doc.:
Reply to: R.K. Roberts

To: Membership of X3T10

From: MMC Working Group

Subject: Letter Ballot, Comment Resolution, MMC Revision 8

The responses listed were developed at the working group meetings on September 10 & 11, 1996. Accepted comments have been incorporated where noted

Adaptec Comments on forwarding MMC to 1PR:

001. Document requires editorial work to get the language in acceptable format for standards.

Response: What else is new?

002. The STOP/PLAY/SCAN (4eh) and SET CD SPEED (BBh) are documented as 12-byte commands in a 10-byte group code.

Response: SET CD SPEED and STOP PLAY/SCAN has been made a 10 bytes command.

IBM Comments on forwarding MMC to 1PR:

(E)=Editorial (T)=Technical (G)=General editorial comment that applies to entire standard.

001-(E) page 1 - 1 - Remove item 5 it is not necessary.

Response: Accepted, Completed, item removed

002-(E) page 2 - 1 - Remove the list of list of standards. It is not accurate and could only be made accurate for a short period of time.

Response: Accepted, Completed,

003-(E) page 3 - 2 - Make sure the normative reference list only contains standards that are needed to use this standard.

Response: Accepted, Completed, new clause 2 inserted.

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

004-(E) page 11 - 4.1.3.2 - figure 3 - All the numbers in the definitions need a 'b' after them to indicate they are binary.

Response: Accepted, Completed

005-(E) page 11 - 4.1.3.2.1 - figure 4 - figure 5 - All the ADR values need a 'b' after them.

Response: Accepted, Completed

006-(E) page 11 and 12 - 4.1.3.2.1 - All the TNO values need a 'bcd' after them.

Response: Accepted, Completed

007-(E) page 12 - 4.1.3.2.1 - The 'ZERO (00000000 binary).' should be ZERO (00000000b).'

Response: Accepted, Completed

008-(E) page 12 - 4.1.3.2.1 - last 3 paragraphs - The 'POINT=A0' give me no indication at what the A0 is. (hex or bcd or something else) Same is true for 'POINT=A1' and 'POINT=A2'.

Response: Accepted, Completed as modified

009-(E) page 13 - 4.1.3.2.2 - figure 6 - 4.1.3.2.3 - figure 7 - All the ADR values need a 'b' after them.

Response: Accepted, Completed

010-(E) page 19 - 4.2 - 3rd para - The 'an-other' should be 'another'.

Response: Accepted, Completed

011-(G) All references in text to check conditions that give a specific sense key and additional sense code should follow the following format:

for whatever reason the command shall be terminated with a CHECK CONDITION status. The sense key shall be set to PLACE SENSE KEY HERE, and the additional sense code set to PLACE ADDITIONAL SENSE CODE HERE.

An example of this format is: ...a Disc in the playing position shall be rejected with a CHECK CONDITION status. The sense key shall be set to ILLEGAL REQUEST and the additional sense code set to MECHANICAL POSITIONING OR CHANGER ERROR.

Note that the hex values are not given for the sense key nor the additional sense codes.

Response: Accepted, Not Completed in Revision 8A

012-(E) page 24 - 5.1 - table 11 - This table should list all the commands used by MMC devices not just the ones defined in MMC standard. Commands that are defined elsewhere should reference the appropriate standard.

Response: Accepted, Completed

013-(E) page 25 - 5.1.1 - 1st para - The statement 'changer posts STATE=(00) READY will' does not make sense because it is not clear what STATE=(00) READY is.

Response: Accepted, Completed changed statement to before the changer enters the READY State(00b), see Table 18.....

014-(G) - All definitions of bits should follow the following format:

A(n) special meaning bit (SPEMEAN) of one(zero) indicatesAll the future references to the special meaning bit should then be as follows:

.... SPEMEAN bit of zero(one)

You could also use in place of zero and one, cleared and set which would then read as follows:

The special meaning bit (SPEMEAN) when set(cleared)

All the future references to the special meaning bit should then be as follows:

.... SPEMEAN bit when set(cleared) ...

Which ever method is selected must be used consistently throughout the standard. Do not which between one/zero and set/clear.

Response: Accepted, Completed

015-(G) All tables and figures must a a reference to them.

Response: Accepted, Completed

016-(E) - page 25 - 5.1.1 - 2nd para after table 12 - table 13 - There is no need to define the START bit twice. I suggest you remove the paragraph and replace it with: The start bit (START) and load/unload bit (LOUNLO) are defined in the load/unload operations table (see table xxx).

Response: Accepted, Completed

017-(E) - page 25 - 5.1.1 - last para - There must be a reference to the software slot selection (bit ?). And it should read 'reports a Software Slot Selection bit (SSS) of one, then....If the device reports a SSS of zero then the...'

Response: Accepted, Completed inserted forward reference

018-(G) - All fields and bits should be use a small caps font (if possible). If you can't do this then expect allot of capitalization changes being requested from the ANSI editors.

Response: Accepted, Completed

019-(G) - All the sense key, ASC, ASCQ tables, that are placed after each command should be remove. These lists are constantly being updated, added to, and changed are only accurate for a short period of time. If they are scattered all over the place there will be inconsistencies and error within a short time of the standard being published. The only way to solve this is that have all ASC/ASCQs defined in a single place. The x3t10 committee is setting up a location on the web where this information will always be current. The standards will reference this location for people waiting to find out the latest version of that list.

One more consideration is that the actual hex values for the sense keys, ASCs, and ASCQs should not be listed in any command standard except SPC. To find out the hex value for a particular ASC, etc. the best thing to do is to go to the web site. This is do for the same reasons as above. Also in is not unusual for a vendor specific ASC/ASCQ to be added to the list. When this occurs one of the reserved code is assigned to that ASC/ASCQ. Then for some period of time a single ASC/ASCQ may actually have two codes; on assigned by the committee and another may be being used by a vendor. Over time the users of the vendor specific code should migrate to the standardized code.

Response: None

020-(G) - When in doubt do not capitalize. For example initiator and target are never capitalized (except if at beginning of sentence).

Response: Accepted, Completed

021-(E) - page 27 - 5.1.2 - last para - The slot table data needs a cross reference.

Response: Accepted, Completed

022-(E) - page 28 - 5.1.2 - 1st para - 1st sentence - Should read 'The mechanism status parameter list (see table xxx) contains a mechanism status header (see table xxx), followed by zero or more fixed-length slot tables (see table xxx).

Response: Accepted, Completed

023-(G) - All bits and fields in all tables must be defined at least once and cross referenced from then on.

Response: Accepted, Completed

024-(E) - page 28 - 5.1.2 - para above table 18 - Remove 'bits 6-5, byte 0,'.

Response: Accepted, Completed

025-(E) - page 28 - 5.1.2 - table 18 - Remove the bit 6, bit 5 and hex columns and replace with a single column labeled 'changer state' and place 00b, 01b, 10b, 11b in the rows.

Response: Accepted, Completed

026-(G) - Do not reference the bit/byte location of a field or bit. For example: 'The current slot field, bits 4-0, indicates' should be 'The current slot field indicates'.

Response: Accepted, Completed

027-(E) - page 29 - 5.1.2 - table 19 - Remove the bit 7, bit 6, and bit 5 columns and rename the hex column to 'CD mechanism state'.

Response: Accepted, Completed

028-(E) - page 29 - 5.1.2 - para above table 20 - First sentence should read 'The slot stable response data format is defined in table 20.'

Response: Accepted, Completed

029-(E) - page 29 - 5.1.2 - table 20 - Byte 0, bits 1-6 need to be labeled reserved.

Response: Accepted, Completed

030-(E) - page 32 - 5.1.4 - The second sentence is very confusing and should be changed to: 'The command function and the output audio signals shall be as specified by the CD audio control mode page (see xxx).'

Response: Accepted, Completed, sentence deleted

031-(E) - page 32 - 5.1.4 - 1st para after table 24 - This paragraph would be better above table 24. It should also be changed to read 'specified in Annex C.'

Response: Accepted, Completed

032-(G) - Always list the sense key and additional sense code when giving the response to a check condition. Always capitalize the actual sense key and additional sense code.

Response: Accepted, see #011

033-(E) - page 34 - 5.1.5 - The second sentence is very confusing and should be changed to: 'The command function and the output audio signals shall be as specified by the CD audio control mode page (see xxx).'

Response: Accepted, Completed

034-(E) - page 34 - 5.1.5 - 1st para after table 24 - This paragraph would be better above table 24. It should also be changed to read 'specified in Annex C.'

Response: Accepted, Completed

035-(E) - page 36 - 5.1.6 - The second sentence is very confusing and should be changed to: 'The command function and the output audio signals shall be as specified by the CD audio control mode page (see xxx).'

Response: Accepted, Completed

036-(E) - page 36 - 5.1.6 - 1st para after table 24 - This paragraph would be better above table 24. It should also be changed to read 'specified in Annex C.'

Response: Accepted, Completed

037-(E) - page 38 - 5.1.7 - The 1st sentence should read 'defines the way digital CD data shall be sent to an external port.'

Response: Accepted, Completed

038-(E) - page 38 - 5.1.7 - table 30 - The transfer length in blocks field should be renamed to 'transfer length/ending address'.

Response: Accepted, Completed as modified...

039-(E) - page 38 - 5.1.7 - 1 para after table 30 - 'The Sector that' should read 'The sector that'.

Response: Accepted, Completed

040-(E) - page 38 - 5.1.7 - 1 para after table 30 - Table 31 should be placed right after 1 paragraph after table 30.

Response: Accepted, Completed

041-(E) - page 38 - 5.1.7 - 3rd para after table 30 - 'CMSF=1' should be 'CMSF is one' and 'CMSF=0' should be 'CMSF is zero'.

Response: Accepted, Completed

042-(E) - page 38 - 5.1.7 - 4rd para after table 30 - A description of the ending address alternate (when CMSF is one) for this field needs to be added.

Response: Accepted, Completed

043-(E) - page 39 - 5.1.7 - 1st and 2nd paragraphs after table 31 appear to be duplicates of paragraphs on page 38. Delete one or the other.

Response: Accepted, Completed

044-(E) - page 41 - 5.1.8 - 2nd para - The second sentence should be changed to; 'Each type of data is enabled via the fields in the READ CD command descriptor block (see table xxx). These fields indicate which information...If a field contains a zero then that particular information is not returned. If all the fields contain zeros then no information is returned...'

Response: Accepted, Completed

045-(T) - page 41 - 5.1.8 - table 34 - The use of byte 9 of a 12 byte CDB for something other than transfer length, when transfer length is needed by the command, violates the general rules for CDBs and could cause problems for automated hardware. I suggest moving the current byte 9 to byte 10 and moving the sub-channel selection field to byte 1 bits 7-5.

Response: Rejected... ATAPI devices are currently shipping products that use this CDB format. This command is CD specific..

046-(G) - All field need a definition of all possible values for that field. This includes all 1 bit fields.

Response: Accepted, Completed

047-(G) - SCSI standards do not have 'flags', we have bits and fields.

Response: Accepted, Completed global change has been done.

048-(E) - page 42 - 5.1.8 - table 35 - 'Hdr' should be 'header' the acronym hdr is not define anywhere in this standard.

Response: Accepted, Completed

049-(E) - page 42 - 5.1.8 - 2nd paragraph above table 36 - It should read 'The error flags field (see table 36)...' and the next paragraph should be deleted.

Response: Accepted, Completed

050-(E) - page 42 - 5.1.8 - 1st para after table 36 - It should read 'The sub-channel data selection field (see table xxx)...' and the next paragraph should be deleted.

Response: Accepted, Completed

051-(E) - page 43 - 5.1.8 - table 37 - The first column should be titled 'sub-channel data selection value'.

Response: Accepted, Completed

052-(E)- page 43 - 5.1.8 - table 38 - This table seems to come out of nowhere. There is no description of what it is supposed to represent or where the bytes come from or go to?

Response: Accepted, Completed

053-(E)- page 43 - 5.1.8 - 1st para after table 38 - What bytes are being referred to and where are they returned from?

Response: Accepted, Completed

054-(E) - page 43 - 5.1.8 - last para - 'and treated as Illegal.' should be 'and treated as illegal.' and 'responds to many of the requests possible.' should be 'responds to many of the requests.'.

Response: Accepted, Completed

055-(E) - page 44 - 5.1.8 - table 39 - There is no cross reference for or definition of CD-DA, Mode 1, Mode 2, Mode 2 Form 1, or Mode2 Form2. There is no explanation of the meaning of the + or & symbols.

Response: Accepted, Completed

056-(E) - page 44 - 5.1.8 - note 2 after table 39 - This note should read 'Byte 9 of the READ CD command descriptor block.'

Response: Accepted, Completed

057-(E) - page 45-49 - 5.1.8 - All the information on these pages looks like it should be part of the model. I recommend to be placed in the model section and some additional words about the usage of this information.

Response: Rejected --- this information pertains only to this command..

058-(E) - page 46 - 5.1.8 - table 41 - What is a b0, b1, etc. that is not the standard way of listing fields. It should be changed to field name with MSB and LSB in the appropriate locations.

Response: Accepted, Completed

059-(E) - page 46 - 5.1.8 - para after table 41 - 1st sentence should be 'capability as described in the CD Capabilities and Mechanical Status page (see xxx).'

Response: Accepted, Completed

060-(E) - page 50 - 5.1.9 - There is no description of what this command does.

Response: Accepted, Completed

061-(E) - page 50 - 5.1.9 - last para - The last sentence should be made into it's own paragraph.

Response: Accepted, Completed

062-(E) - page 52 - 5.1.10 - 1st para - The 'CD Table of Contents' needs to either be defined in the glossary or a cross reference to where it is defined. The last sentence should be deleted or made into an Implementors note.

Response: Accepted, TOC or Table of Contents is defined in the glossary. Completed

063-(E) - page 52 - 5.1.10 - paragraphs between tables 47 and 48 - The first sentence of the second paragraph should be placed right after table 47. Next should come the PMI bit description as a paragraph. Then the read cd recorded paragraph and the last sentence of the second paragraph should be deleted.

Response: Accepted, Completed

064-(E) - page 52 - 5.1.10 - 1st paragraph after table 47 - The 1st sentence should read 'The read CD recorded capacity parameter list (see table xxx) shall be the ...' and the title of table 48 should be changed to 'Read CD recorded capacity parameter list'.

Response: Accepted, Completed

065-(E) - page 54 - 5.1.11 - Delete 1 st sentence after table 50. Move paragraph before table 53 to right after table 50.

Response: Accepted, Completed

066-(E) - page 54 - 5.1.11 - Combine the 2nd and 3rd paragraphs after table 50 and delete the first sentence of 3rd paragraph.

Response: Accepted, Completed

067-(E) - page 54 - 5.1.11 - para before table 51 - Change to: 'If the MSF bit is zero the read header LBA parameter list (see table 51) defines the CD data block address header of the requested logical block. If the MSF bit is one the read header MSF parameter list (see table 53) defines the CD data block address header of the requested logical block.'

Response: Accepted, Completed

068-(E) - page 55 and 56 - 5.1.11 - table 51 and 53 - Change 'data format' to 'parameter list'.

Response: Accepted, Completed

069-(E) - page 56 - 5.1.12 - note under table 55 - Move note to before table 55.

Response: Accepted, Completed

070-(E) - page 57 - 5.1.12 - The MSF bit is not described.

Response: Accepted, Completed

071-(E) - page 57 - 5.1.12 - 2nd note under table 55 - Delete this note. The statement is true for all reserved fields in SCSI and need not be stated here.

Response: Accepted, Completed

072-(E) - page 57 - 5.1.12 - para before table 56 - Delete last sentence of this paragraph. It gives the same information as table 56.

Response: Accepted, Completed

073-(E) - page 57-59 - 5.1.12 - Need some kind of parameter list definition that can allow for the different sub-channel formats that are returned.

Response: Accepted, Completed

074-(E) - page 57 - 5.1.12 - 2nd para after table 57 - The last sentence needs a cross reference for the 'Audio Control Mode Page'.

Response: Accepted, Completed

075-(E) - page 58 - 5.1.12.2 - table 61 - These four bits should be named and defined as individual fields.

Response: Accepted, Completed, definition added

076-(E) - page 59 - 5.1.12.3 - 1st paragraph after table 62 - The MCVAl bit is not defined nor cross referenced.

Response: Accepted, Completed, definition added

077-(E) - page 59 - 5.1.12.3 - 1st para before table 63 - The AFRAME field values of 4Bh to FFh are not defined.

Response: Accepted, Completed

078-(E) - page 60 - 5.1.12.4 - 1st paragraph after table 64 - The MCVAl bit is not defined nor cross referenced.

Response: Accepted, Completed

079-(E) - page 60 - 5.1.12.4 - 2nd para after table 64 - Move this paragraph to right before the paragraph that starts with 'ISRC data returned...' and change the 1st sentence to 'Track ISRC data (see table 65) may be from any...' and change the 'can' in the last sentence to 'shall'.

Response: Accepted, Completed

080-(E) - page 60 - 5.1.12.4 - 3rd para from bottom - There is no cross reference to the ADR field nor the Control fields.

Response: Accepted, Completed

081-(E) - page 61 - 5.1.12.4 - table 65 - There is no description of any of the fields in table 65. They need to be described.

Response: Accepted, Completed

082-(E) - page 63 - 5.1.13 - 1st para after table 67 - Make second sentence a new paragraph. Place table 68 right after the new paragraph.

Response: Accepted, Completed

083-(E) - page 64-67 - 5.1.13 - There needs to be an overall parameter list set up for the READ TOC/PMA/ATIP command.

Response: Accepted, Completed

084-(E) - page 65 66, and 67 - 5.1.13.1, 5.1.13.2, and 5.1.13.3 - 1st para after table 69 - The first sentence should read 'The TOC data length field indicates the length in byte of the following TOC data.'

Response: Accepted, Completed

085-(E) - page 65, 66, and 67 - 5.1.13.1, 5.1.13.2, and 5.1.13.3 - 4th para after table 69 - Change to 'The ADR field indicates the attributes of the track. (see table 61).

Response: Accepted, Completed

086-(E) - page 65, 66, and 67 - 5.1.13.1 - 5.1.13.2 - 5.1.13.3 - 5th para after table 69 - Change to 'The control field indicates the attributes of the track. (see table 61).

Response: Accepted, Completed

087-(E) - page 67 - 5.1.13.3 - Table 71 - Fields in bytes 2-10 are not defined. Why are those fields labeled 'Byte x or'?

Response: Accepted, Completed, labels have been removed. This is how the fields are defined in the books of color.

088-(E) - page 67 - 5.1.13.3 - 1st sentence after table 71 - This sentence does not have any meaning. What is it supposed to be talking about.

Response: Accepted, Completed

089-(E) - page 67 - 5.1.13.3 - 2nd para after table 71 - Should the should be a shall?

Response: Accepted, Completed

090-(E) - page 67 - 5.1.13.3 - 4th para after table 71 - The 'is' should be a 'shall be'.

Response: Accepted, Completed

091-(G) - The term 'device' is used throughout this standard. What is meant by this? It probably should be device server or target.

Response: The term 'device' is generally used to replace the term "drive" or "disc". The term 'Device server' does not fit the usage of a CD. The current usage in the CD world is not "target" and that includes scsi products.

092-(E) - page 68 - 5.1.13.3 - table 72 - There are several formatting problems with this table that need to be fixed.

Response: Accepted, Completed

093-(E) - page 68 - 5.1.13.3 - sentence after table 73 - It should read 'The disc byte field (see table 74) contains...'.
Response: Accepted, Completed

Response: Accepted, Completed

094-(E) - page 68 - 5.1.13.3 - sentence after table 73 - The term 'definition' does not make it very clear as to what is contained in the table.

Response: Accepted, Completed

095-(E) - page 69 - 5.1.13.3 - sentence after table 74 - There are two cross references in this sentence. There should only be one.

Response: Accepted, Completed, sentence deleted.

096-(E) - page 70 - 5.1.13.4 - Table 75 - Fields in bytes 2-10 are not defined. Why are those fields labeled 'Byte x or'?

Response: Accepted, Completed

097-(E) - page 70 - 5.1.13.4 - 1st sentence after table 71 - This sentence does not have any meaning. What is it supposed to be talking about.

Response: Accepted, Completed

098-(E) - page 70 - 5.1.13.4 - 2nd para after table 69 - The first sentence should read 'The PMA data length field indicates the length in ...'.

Response: Accepted, Completed

099-(E) - page 71 - 5.1.13.5 - 2nd and 3rd para after table 76 - Field is missing.

Response: Accepted, Completed

100-(E) - page 71 - 5.1.13.5 - 3rd para after table 76 - The reference speed fields values 2-7 are not defined.

Response: Accepted, Completed, values 2-7 are reserved.

101-(E) - page 72 - 5.1.13.5 - 4th, 5th, and 6th para - The A1, A2, and A3 bits should be placed in a table with all combinations listed.

Response: Accepted, Completed

102-(E) - page 72 - 5.1.13.5 - 7th and 8th para - All the ATIP start time of lead-in and ATIP last possible start time of lead-out fields should be listed and defined.

Response: Accepted, Completed

102A-(E) - page 72 - 5.1.13.5 - There are two tables on this page without titles or table numbers. This needs to be fixed.

Response: Accepted, Completed

103-(E) - page 72 - 5.1.13.5 - The last several paragraphs are unclear as to what they are trying to accomplish.

Response: Accepted, Completed, clarification added

104-(T) - page 66 and 69 - 5.1.13.2 and 5.1.13.3 - The READ TOC command with a format flag=4 (Format=0100b) returns the LBA of the last session (table 70 in section 5.1.13.2). If this command also returned the CD disc type (i.e., mode 1, mode 2, CDI, or CD-DA CD..), then an initiator could be ready to use the disc after a single READ TOC command. Without this information, an additional command (READ HEADER or READ TOC with a different format flag) is required to get this information.

The disc type information, given in table 74, could go into any one of the two currently reserved bytes (byte 0 or byte 3 of the TOC track descriptor) in the data (table 70) which the READ TOC command returns for format flag=4.

These comments do not represent a review of the entire MMC standard. I fully expect I will have further comments on problems occurring beyond page 74 but I have run out of time. It appears to me that this standard is in need of an editors meeting or meetings to get the bugs out of it. Until such a review is complete I would strongly suggest not moving this standard into public review.

Response: Rejected ... Legacy. Current CD drives shipping today have the data in these locations...

Milligan (Seagate) Comments on forwarding MMC to 1PR:

001) On the cover page replace "Any commercial or for-profit use is strictly prohibited." with "Any commercial or for-profit replication or republication is prohibited."

Response: Accepted, Completed

002) In the abstract replace "shall define" with "define".

Response: Accepted, Completed

003) In the foreword change:

"The SCSI-3 Multimedia Commands specification at present consists of five major clauses. Additional clauses will be added as necessary to describe multimedia extensions for additional devices. This document describes the CD device class (common to all CD devices) in clause 4 and the CD-R/E device class (Write Once devices) in clause 5. All other clauses will be applicable to any device class described in this document unless explicitly stated otherwise." with

"The SCSI-3 Multimedia Commands standard consists of six clauses and three annexes. In addition there are three informative annexes. This standard describes the CD device class (common to all CD devices) in clause 4 and the CD-R/E device class (Write Once devices) in clause 5. All other clauses are applicable to any device class described in this standard unless explicitly stated otherwise."

Response: Accepted, Completed

004) Why do the annex designations jump from C to N?

Response: Leaving room for DVD normative references, that need to be in front of Informative annexes.

005) In the Clause 4, 5, and 6 description delete "extensions" or change it to "multimedia extensions". I am not sure which since I have not yet determined to what extent this is a freestanding document versus a delta document.

Response: Accepted, Completed

006) Change "Where possible, this standard is consistent with the accepted industry standards that were consulted." to "Where practical, this standard is consistent with the accepted industry standards that were consulted."

Response: Accepted, Completed

007) In the introduction change "the SCSI-3 Architectural Model Specification." to "the SCSI-3 Architecture Model (X3.270-199x) (SAM) standard."

Response: Accepted, Completed

008) Change "All standard updates are subject to the rules of ANSI for such procedures and involve a public review period and balloting process." to "All standard updates are subject to the X3 policies and procedures accredited by ANSI and involve a public review period and balloting process."

Response: Accepted, Completed

009) In the scope change "This standard defines the multimedia command set extensions for all classes of SCSI devices. The commands specified within this standard shall specify standard access and control to those features of the device that are used in multimedia applications (audio, video, animation). The entire standard command set available for a subject device shall be fully specified by the clause/clauses of this standard pertaining to that device, the applicable clauses of SCSI-3 Primary Commands, and any additional command set specifications pertaining to the subject device as documented in the SCSI-3 standard." to "This standard defines the multimedia command set extensions for all classes of SCSI devices. The commands specified within this standard define standard access and control to those features of the device that are used in multimedia applications (audio, video, animation). The entire standard command set available for a subject device is fully specified by the clause/clauses of this standard pertaining to that device, the applicable clauses of SCSI-3 Primary Commands, and any additional command set standards pertaining to the subject device as documented in the SCSI-3 family of standards."

Response: Accepted, Completed

010) Delete "This document provides focus on CD device class instruction sets. It is anticipated that it will be updated with additional clauses to define multimedia instructions for other classes of devices commensurate with technological advances in the multimedia field. It is anticipated that the need to specify device profiles will arise."

Response: Accepted, Completed

011) Change "The SCSI-3 command set and these extensions are transport independent and may be implemented across a wide variety of environments for which a SCSI-3 command mapping and delivery vehicle has been specified. To date these may be SSA, Fibre Channel, SCSI Parallel Interface, and IEEE 1394. Reference these documents as listed in clause Normative References for a complete specification of these environments." to "The SCSI-3 command set and these extensions are transport independent and may be implemented across a wide variety of environments for which a SCSI-3 command mapping and delivery vehicle has been defined. To date these include Fibre Channel, High Performance Serial Bus, SCSI Parallel Interface, and Serial Storage Architecture."

Response: Accepted, Completed

012) Change "1) To provide a specification of command format and functionality independent of delivery, protocol/signaling or transport mechanism. Architectural constraints regarding command function across the various transports are addressed in SCSI-3 Architectural Model and the document specific to the transport in question." to "1) To provide a definition of the command format and functionality independent of the delivery, protocol/signaling or transport mechanism. Architectural constraints regarding command function across the various transports are addressed in the SCSI-3 Architecture Model and the standards for the specific to the physical transport." In addition the correction of the name of SAM should be a global change.

Response: Accepted, Completed

013) Change "Thus, different disk drives, tape drives, printers, optical media drives, and other devices can be added to host computers without requiring modifications to generic system hardware and software." to "Thus, different tape

drives, optical media drives, and other devices can be added to host computers without requiring modifications to generic system hardware and software."

Response: Accepted, Completed

014) Change "4) To provide compatibility such that properly conforming SCSI-2 devices may inter-operate with SCSI-3 devices given that the systems engineering is correctly done. Properly conforming SCSI-2 devices should respond in an acceptable manner to reject SCSI-3 protocol extensions, as defined within the SCSI-3 specifications for that environment. SCSI-3 protocol extensions are designed to be permissive of such rejections and thus allow the SCSI-2 device to continue operation without requiring the use of the extension." to "4) To provide compatibility such that conforming SCSI-2 devices may inter-operate with SCSI-3 devices given that the systems engineering is correctly done. SCSI-3 protocol extensions are designed to be permissive of rejections by conforming SCSI-2 devices and thus allow the SCSI-2 device to continue operation without requiring the use of the extension."

Response: Accepted, Completed

015) I like the construction of Figure 1 but do not fully agree with the description of Figure 1. However the implication that CAM relates to the physical layers is questionable in my mind and I welcome input regarding the CAM relationships. However I assume X3T10 will arrive at a standard Figure 1 along with a standard description.

Response: When T10 comes up with a new one we will incorporate it here. I think the list of documents is not needed.

016) ANSI does not approve standards. They publish standards and approve development processes.

Response: Accepted, Completed

017) Change "The term SCSI is used wherever it is not necessary to distinguish between the versions of SCSI. The original Small Computer System Interface Standard, X3.131-1986, is referred to herein as SCSI-1. SCSI-1 was revised resulting in the Small Computer System Interface - 2 (X3.131-1994), referred to herein as SCSI-2 and approved by ANSI on January 31, 1994.

The term SCSI-3 refers collectively to the following documents that fall under the jurisdiction of X3T10 (formerly X3T9.2)"

with

"The term SCSI is used wherever it is not necessary to distinguish between the versions of SCSI. The Small Computer System Interface -2 (X3.131-1994) is referred to herein as SCSI-2.

Response: Accepted, Completed

The term SCSI-3 refers collectively to the following documents:"

018) Replace "SCSI-3 Parallel Interface (SPI) X3T10/855D
SCSI-3 Interlocked Protocol (SIP) X3T10/856D
SCSI-3 Fiber Channel Protocol (FCP) X3T10/993D
SCSI-3 Serial Bus Protocol (SBP) X3T10/992D
SCSI-3 Architecture Model (SAM) X3T10/994D
SCSI-3 Primary Commands (SPC) X3T10/995D
SCSI-3 Block Commands (SBC) X3T10/996D
SCSI-3 Stream Commands (SSC) X3T10/997D
SCSI-3 Graphic Commands (SGC) X3T10/998D
SCSI-3 Medium Changer Commands (SMC) X3T10/999D
SCSI-3 Multimedia Command Set (MMC) X3T10/1048D"

with

"SCSI-3 Parallel Interface [X3T10/855D][X3.253]
SCSI-3 Interlocked Protocol [X3T10/856D]
Serial Storage Architecture Transport Layer 1 [X3T10/989D]
SCSI Common Access Method-2 [X3T10/990D]
SCSI-3 Fibre Channel Protocol [X3T10/993D][X3.269]
SCSI-3 Serial Bus Protocol [X3T10/992D][3.268]
SCSI-3 Architecture Model [X3T10/994D][X3.270]

SCSI-3 Primary Commands [X3T10/995D]
SCSI-3 Block Commands [X3T10/996D]
SCSI-3 Stream Commands [X3T10/997D]
SCSI-3 Graphic Commands [X3T10/998D]
SCSI-3 Medium Changer Commands [X3T10/999D]
SCSI-3 Controller Commands [X3T10/1047D][X3.276]
SCSI-3 Fast-20 Parallel Interface [X3T10/1071D][X3.277][X3.277]
SCSI-3 Multimedia Command Set [X3T10/1048D]
Serial Storage Architecture SCSI-3 Protocol [X3T10/1051D]
Serial Storage Architecture Physical Layer 1 [X3T10/1145D]
Serial Storage Architecture Physical Layer 2 [X3T10/1146D]
Serial Storage Architecture Transport Layer 2 [X3T10/1147D]"

Make the equivalent change to those SCSI-3 documents which are normative in Clause 2.

Response: Accepted, Completed with new reference outline from X3

019) I agree with the definition of obsolete but I am surprised to see it in MMC since there was not a prior version of MMC to obsolete something.

Response: Working group decided to incorporate the full set of keywords described in the ATA/ATAPI-4 document.

020) In 4.1.1 and if there are other instances there also, change "this International Standard" to "this standard".

Response: Accepted, Completed

021) Several places in MMC values are written as something of the form "address 00/02/00". According to the conventions these numbers are decimal. However I think they actually should be of the form "address 00/02/00". If I am correct make a global change of the form " 00h/02h/00h".

Response: Accepted, Completed

022) I think MMC needs to be scrubbed for the consistency of how numbers are called out, In 4.1.3.2.2 "ADR = 1 (0010)" I think should be "ADR = 1 (0010bcd)" but on the other hand why isn't it "ADR = 2 (0010bcd)"?

Response: Accepted, Completed

023) In 4.1.5 change "SCSI BLOCK COMMANDS DOCUMENT" to SCSI-3 Block Commands standard".

Response: Accepted, Completed

024) In Table 11 the use of "R = mandatory command for CD-R/E devices" may cause confusion with reserved. Some other letter (e.g. E would avoid this problem). (E is used elsewhere but I forget if it is used for this set or another.)

Response: key definition is located directly below the tables

025) In Table 39 what does the "9" in the Byte column refer to?

Response: Accepted, Completed definition has been added

026) Referring to Table 63, where is MCVAL defined?

Response: Accepted, Completed

027) Under Table 63 change "All Nxx bytes are specified in ASCII." to "All Nxx bytes are ASCII." An analogous change should be global.

Response: Accepted, Completed

028) In Table 77 and other tables, what is the meaning of blank ASCQs?

Response: All of the ASC ASCQ tables are being redone. See IBM's comment.

029) Regarding Table 93 the reference column is missing the entries.

Response: Accepted, Completed

030) Below Table 94 change "NOTE: It is recommended that a Logical Unit type RESERVE be issued prior to starting audio play operations with an Immed bit of one in any multiple initiator environment." to "NOTE: It is recommended that a Logical Unit reservation be established prior to starting audio play operations with an Immed bit of one in any multiple initiator environment."

In addition I think notes are supposed to be numbered.

Response: Accepted, Completed

031) What is the meaning of "(60)" and "(75)" in Table 96? The text is clear on these values but their use in the table seems inappropriate.

Response: Accepted, Completed, these are hardwired values, numbers have be removed from the table

032) The note under Table 96 is not clear "NOTE: Higher values in this parameter may have an adverse effect on the drive MTBF, in some implementations." Higher than what? Does a values of 1 cause a lower MTBF than zero? If so, the note is clear.

Response: Accepted, Completed, note deleted

033) The inactivity timer multiplier does not seem to be a multiplier but a set of values. Why isn't it called inactivity timer value?

Response: Accepted, Completed

034) The statement under Table 98 "The error recovery parameter bits are defined in SCSI Block Commands." seems inappropriate since the allowed values are given in Table 99. The terminology for this parameter is inconsistent between Table 98, the text, and Table 99. In addition it seems odd to mix bit significance (implied by reserved bits) and hex values which encompass the reserved bits.

Response: Accepted, Completed

035) For Table 100, why is there two definitions for Byte 5 bit 1?

Response: Accepted, Completed

036) Why is there a discrepancy in bit numbering between the text and Table 101?

Response: Accepted, Completed. fixed

037) Regarding Table 102 it is not clear what the Speed entries are. Most of the values can be inferred (if they are multipliers) but I can not infer what the values is for X2.2.

Response: Accepted, Completed

038) Under Table 102 delete "It is also important to understand that".

Response: Accepted, Completed

039) In Table 113, 116, 122 and any other tables it is in, change "In process of becoming ready - writing" to all caps.

Response: Accepted, Completed

040) Under Table 114 change "sesense data set to 05/10/04" and "05/71/04" to the text definition.

Response: Accepted, Completed

041) Change "(table x+1)" to Table 118.

Response: Accepted, Completed

042) For Table 131 the OPC value definition is not clear.

Response: Accepted, Completed, OPC values are vendor specific

043) Make a global change from "An Allocation Length of zero is not to be considered an error." to "An Allocation Length of zero is not an error."

Response: Accepted, Completed

044) Under Table 142 what does "The Track Start Address is the starting address for the track as is specified or would be specified in the PMA" mea?

Response: Accepted, Sentence changed to "The Track Start Address is the starting address for the specified track."

045) In 6.2.13 change "The SYNCHRONIZE CACHE command (Table 167) is inserted here for reference. reference. See SCSI-3 BLOCK COMMANDS for complete description." to "The SYNCHRONIZE CACHE command (Table 167) is shown for reference. See SCSI-3 BLOCK COMMANDS for a complete description."

Response: Accepted, Completed

046) Regarding Annex A, add a statement as to how ASC/ASCQs are added after publication.

Response: Accepted, Completed

047) In addition to Annex B, host has been used in the main body of MMC rather than initiator or application client. I didn't comment on this until I saw Annex B.

Response: Accepted, Completed

048) Something strange happened to Table B.2. This may be a PDF artifact.

Response: Accepted, Completed

049) In B4.2 change "All parameters are the same as defined for SCSI devices, except that the IMMED shall be set to 1." to "All parameters are the same as defined for SCSI devices, except that the IMMED flag shall be set to 1."

Response: Accepted, Completed

050) In B4.3 change "In the Write Parameters Mode Page, (Write Type field) support for Packet and Track at Once shall be mandatory. Sessin at Once and Raw are optional." to "In the Write Parameters Mode Page, (Write Type field) support for Packet and Track at Once shall be mandatory. Session at Once and Raw are optional." This suggests a need to run a spelling check.

Response: Accepted, Completed

051) Other than being a statement in a meeting, In O1.1 what does "The working group should use the initiator/target hierarchy." mean?

Response: Accepted, Changed

052) Same comment for "The MMC working group is attempting to develop a document listing a set of commands that will provide for accessing a CD-ROM, CD-R, and other technologies incorporating video, audio, and data. The working group determined that a set of functional requirements should be developed in order provide a means of merging multiple proposals in to one document."

Response: Accepted, Changed

053) Change the note under Figure O.5 from "Note: Sectors that contain Sub Q Mode 0 shall be considered as no EFM." to "Note: Sectors that contain Sub Q Mode 0 should be considered as no EFM." or "Note: Sectors that contain Sub Q Mode 0 is considered as no EFM."

Response: Accepted, Completed

054) Annex O has numerous other "shall" requirements that need to be changed to an informative style or the annex changed to normative.

Response: Accepted, Completed

Symbios Logic Comments on forwarding MMC to 1PR:

001 (E) pg: 101, table 110

pg: 155, table N.1

Change "BLANK Command" to "BLANK". Delete the blank row at the bottom of the table.

Response: Accepted, Completed

002 (T) pg: 150, table B.1

Is it really intended that Prevent/Allow Medium Removal be mandatory? It was not mandatory in previous version of the CD-ROM definition.

Response: YES The command is mandatory for ATAPI products

003 (T) pg: 151, table B.1

pg: 155, table N.1

pg: 156, table N.2

SBC recently made the SEEK command obsolete. MMC cannot reference SBC for the description of the SEEK command. MMC cannot list the SEEK command as being defined, without including that definition in MMC.

Response: Retracted

004 (T) pg: 151, table B.1

pg: 157, table N.3

Is it really intended that Start/Stop Unit be mandatory? It was not mandatory in previous version of the CD-ROM definition.

Response: Accepted, Completed, The command is mandatory for ATAPI products and MMC

005 (T) pg: 155, table N.1

pg: 156, table N.2

Change the operation code for FORMAT UNIT from 56h to 04h.

Response: Accepted, Completed

006 (T) pg: 155, table N.1

Change the operation code for READ DISC INFORMATION from 52h to 51h.

Response: Accepted, Completed

007 (E) pg: 155, table N.1

pg: 156, table N.2

Change "SYNCHRONIZE CACHE (FLUSH)" to "SYNCHRONIZE CACHE".

Response: Accepted, Completed

008 (E) pg: 156, table N.2

Add BLANK and RESERVE TRACK to table N.2.

Response: Accepted, Completed

009 (T) pg: 157, table N.3

SBC has made REZERO UNIT and the SEARCH DATA xxx commands obsolete. MMC cannot reference these commands without adding text describing them to MMC.

Response: Accepted, Completed, commands removed from MMC

010 (T) pg: 157, table N.3

Most of the rest of SCSI is making READ(6) optional. Should table n.3 continue to show it as mandatory?

Response: Accepted, Completed

011 (E) pg: 157, table N.3

Change "RESERVE" to "RESERVE(6)". Change "RELEASE" to "RELEASE(6)". Add RESERVE(10).

Response: Accepted, Completed

Toshiba Comments on forwarding MMC to 1PR:

001) P 78 Section 5.1.16. Table 86 STOP PLAY/SCAN Command This command (4Eh) is a group 2 command. Group 2 command must be 10 bytes long but the Table 86 describes this command as a 12 bytes long command. This should be corrected.

Response: See Adaptec #002 Completed

Eastman Kodak Comments on forwarding MMC to 1PR:

From: Rick Bohn, (bohn@sector.kodak.com)

K001 - Session at Once

If the host specifies that they are sending subcode information in either raw or pack form, does the drive generate the P-Q channels or is it taken from the host supplied subcode data? Is it the intent of the host supplied subcode to only provide the R-W channels?

Using the host supplied P & Q channels would seem to override the information in the cue sheet. Ref. page 135.

Response: Accepted, sentence added

K002 - On page 48, Figure 11, READ CD Sub-Channel, R-W(100b) and associated text. As it is defined in MMC the 4 Groups of 24 words does not supply the host with the needed 96 six bit R-W symbols.

Response: Accepted, Figure 11 modified.

K003 - Raw Write Mode

Rev 8.0 states that for a write type of RAW, only data block formats 1 and 2 are accepted. This prohibits the sending of raw subcode data (96 bytes). Either we need another data block format code or we allow the use of a vendor specific code for this case. Prefer using one of the reserved codes(eg: 3). Can someone give a better definition for the meaning of 2352 raw data bytes for block formats 1 and 2? Especially for mode 1 or mode 2 form 1.

Response: Yamaha proposes to use Value=3 for this format, 2352 bytes of raw data + 96 bytes of raw P-W sub-channel

Response: Accepted, table 110 modified, value 3 added.