T10/06-498r0: Minutes of
SCSI Media Changer (SMC) Working Group
for November 6, 2006, 2:55 PM – 7:07 PM PST

1.   Introductions   Group

Michael Banther called the meeting to order at 2:55 PM PST. He thanked Dan Colegrove and
Hitachi Global Storage Technologies for hosting the meeting. Roger Cummings agreed to
serve as the secretary of the meeting.

2.   Approval of the Agenda   Michael Banther

Michael Banther presented the agenda, and noted that item 7.2 should be deleted from this and
future agendas as it had been replaced by item 8.4 under New Business. Kevin Butt made a
motion to accept the agenda as modified. Roger Cummings seconded the motion. The group
passed the motion unanimously.

3.   Attendance and Membership   Michael Banther

Michael Banther reviewed the T10 attendance rules with the group and directed prospective
new members to John Lohmeyer. The attendance report appears below.

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SMC-3 Working Group Attendance Report - November 2006

            Name                    S          Organization
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Mr. Noud Snelder                     V  BDT
Mr. Kevin Marks                      P  Dell, Inc.
Mr. Michael Banther                  V  Hewlett Packard Co.
Mr. Kevin Butt                       A  IBM Corp.
Mr. Paul Entzel                      P  Quantum Corp.
Dr. Paul Suhler                      A  Quantum Corp.
Mr. Rod Wideman                      V  Quantum Corp.
Mr. Roger Cummings                   P  Symantec
Mr. Halvard Eriksen                  AV Tandberg Data ASA

8 People Present

Status Key:  P   - Principal
             A,A# - Alternate
             AV  - Advisory Member
             L   - Liaison
             V   - Visitor
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4.   INCITS Patent Policy   Michael Banther

Michael Banther directed the group to a reading of the T10 Short Summary of the INCITS
Patent Policy.

5.   Approval of Previous Minutes   Group

5.1   Approval of Minutes   Roger Cummings

Roger Cummings asked for any problems with the previous minutes, and none were identified. Roger therefore made a motion to accept the previous meeting minutes (06-423r0). Michael Banther seconded the motion. The group passed the motion unanimously.

5.2   Secretary Discussion   Michael Banther

Michael Banther noted that in September Roger had stated that he was willing to serve as Secretary for the November and January meetings. Michael warned the group that he may need to issue a call in January for someone to serve as a Secretary for alternate SMC-3 meetings, and asked that anyone needing more information contact him. Kevin Butt responded to the call at the meeting, and Michael graciously accepted his offer.

6.   Review of Action Items   Roger Cummings

Roger Cummings reviewed the outstanding action items, and the status of each item was reported as listed below:

06-002   [Michael Banther] Reporting of virtual libraries / partitioning to host.
         Carryover

06-003   [Rod Wideman] Visibility of media type in storage element. Medium Domain (e.g. technology) & Medium type (e.g. WORM, Clean, Data, F/W Upgrade).
         Overtaken by events

06-004   [Roger Cummings] Change the 3rd paragraph of 5.3.1 to clarify addresses and volumes.
         Carryover

06-005   [Roger Cummings] Revise 05-271r2 and post as 05-271r3.
         Carryover

06-006   [Rod Wideman] Write a proposal for items 3.2.6 and 3.2.7 in 05-315r0.
         Closed by 06-110.

06-012   [Rod Wideman] Bring a proposal for a new command/framework per November discussion item 7.4.
         Carryover

06-020   [Robert Payne] Define a philosophy for Write Exclusive Persistent Reservations in SMC.
         Carryover

06-043   [Michael Banther] Revise and post 05-074r1 per June discussion item 4.3.
         Closed by 06-477r0.

06-044   [Roger Cummings] Solicit additional vendor-specific sense codes from library vendors per June discussion item 4.4.
         Carryover

06-045 [Rod Wideman] Bring a proposal for new sense codes for SMC (06-110r0) per June discussion item 4.4.

Carryover

06-050 [Group] Participants representing automation groups will inquire about the difficulty of proposal 06-182r1 with their automation group per July discussion item.

IBM has inquired re 06-182r2 and they are OK with that part of the proposal. BDT also checked and they do not have major issues. Closed because the proposal has been split into three parts, and there are separate AIs for those.

06-051 [Noud Snelder] Update references in SMC-3 to point to SPC-3 and SAM-3.

Carryover. Noud asked for guidance regarding the definition of "Linked Command", and whether he should update that definition to match SAM-3. Some research determined that approved proposal 06-259r1 had listed SMC-3 as one of the command set standards affected by the removal of linked commands.

06-052 [Noud Snelder] Create and post 05-414r4 (r3 as revised at the September meeting).

Closed

06-053 [Noud Snelder] Incorporate 05-414r4 into the next revision of SMC-3.

Closed

06-054 [Curtis Ballard] Create and post 06-046r7 (r6 as revised at the September meeting).

Closed

06-055 [Noud Snelder] Incorporate 06-046r7 into the next revision of SMC-3.

Closed

06-056 [Noud Snelder] Distribute the source of 06-397r1 (r0 with columns as created at the September meeting) with initial column contents.

Closed

06-057 [Group] Review 06-397r1 and return alternative column contents to Noud where there is disagreement.

Carryover. HP & Quantum had responded with comments.

06-058 [Kevin Marks] Create and post 06-182r3 (r2 as revised at the September meeting).

Closed

06-059 [Noud Snelder] Incorporate 06-182r3 into the next revision of SMC-3.

Closed

06-060 [Curtis Ballard] Create and post 06-272r1 (r0 as revised at the September meeting).

Carryover

7.   Old Business   Group

7.1   Working List for ISV feedback (SMC/SSC/ADC/SPC) (05-315r3).   Kevin Butt

Kevin Butt requested that this item be deferred to the next meeting.

7.2   SPC-3 SPC-4 SES-2 SMC-3 Command requirements (05-074r1).   Michael Banther

Michael Banther request that this item was deleted from this and future agendas in favor of the proposal referenced in New Business item 8.4.

7.3   SMC-3: Element Statistics log page for SMC (06-394r1)   Kevin Marks

Kevin Marks requested that this item be deferred to the next meeting.

7.4   SMC-3: Diagnostics Data log page (06-395r1)   Kevin Marks

Kevin Marks presented the changes in r1 of his proposal. Michael Banther raised the issue of whether there could be more than one error in the log for each event type, and changes to clarify that this was supported were made. Michael also expressed surprise that the Recovered Error sense code was not included. Kevin Butt asked how often that sense code was reported by automation devices, and Rod Wideman responded that he knew of some devices that never reported recovered errors. The usage of "parameter" versus "parameter entries" was also discussed.

Rod Wideman asked why the proposal used the volume identifier rather than the full volume tag (which incorporates four bytes that contain a sequence number that the library can use to differentiate between volumes with identical identifiers). Section 5.3 of SMC-3 was referenced. Kevin agreed to change to using volume identifier.

Michael Banther raised an issue with the definitions of initial and target address, and there was a long discussion of the use these addresses. A number of different definitions of initial address were investigated, with a conclusion reached that the initial address should be the position when the task is enabled. Kevin Butt said that he needed to take this concept back to his organization for review.

There was also a discussion on usage of zero in the address fields to indicate "not known". Michael Banther suggested that valid bits were a better solution that picking values for n/a or not known. Consensus was reached that zero can be used for this purpose, because an element address of zero is reserved for the medium transport unit, which is not relevant in this context. Kevin Marks agreed to provide more information about what was originally wanted in terms of initial address identification.

Kevin Marks accepted an Action Item to create & post a new revision of his proposal.

7.5   SMC-3 Error codes overview (06-397r0)   Noud Snelder

Noud Snelder presented a document containing a new revision of 06-397r0 that he had distributed in binary form via e-mail plus feedback from HP & Quantum. Noud reviewed the fourth column in the main table in the document, and specifically those codes that should be changed to be not appropriate for a media changer in SPC-4. During this discussion a potential defect in ADC was recognized.

There was a long discussion about the LOGICAL UNIT NOT READY, INITIALIZING COMMAND REQUIRED error code. Rod Wideman noted that a Read Element Status command with the CURDATA bit set to zero may cause device motion to confirm element status data, but that only the CURDATA bit set to one is mandatory. He thought that the error code could be used as part of a reject of the command with the CURDATA bit set to zero. To save meeting time, Halvord Erikson accepted an Action Item to further investigate use of the error code.

There was also a discussion of the offline definition, and suggestions for improvement were made. Noud accepted an Action Item to Create and post a new revision reflecting both discussion at the meeting and the e-mail feedback.

7.6   SMC-3, Report Element Information (06-272r0)   Curtis Ballard

Michael Banther requested that this item be deferred to the next meeting.

7.7   SMC-3 TapeAlert Enhancements (06-420r0)   Michael Banther

Michael Banther presented a proposal to clean up Tape Alert, following a similar proposal that have already been incorporated in SSC-3. He noted that the definitions of Tape Alert in SMC-2 & SSC-2 were not identical, and that his proposal maintained those differences into the next generation and made them read sensibly. Rod Wideman suggested an alternative approach in which a model would be defined in SSC-3, and only "deltas" included in SMC-2. This proposal raised issue with coordinating releases between SMC-3 & SSC-3, and was discussed at length. Michael stated that he understood the motivation for the proposal, but that he feared that this was liked "arguing about the last 10 feet when climbing a thousand foot mountain". An Action Item was assigned to Rod Wideman to contact Erich Oetting (the SMC-2 editor) to see if he could shed light on the historical differences, and an Action Item was also assigned to Michael Banther to create and post a new revision reflecting the discussions.

7.8   SMC-3 Discussion: Visibility of Volumes in Elements (06-421r0)   Curtis Ballard

Michael Banther requested that this item be deferred to the next meeting.

7.9   SMC-3 New Additional Sense Codes for Media Changers (06-110r0)   Rod Wideman

Rod Wideman presented document 06-110r0, and stated that he was not intending to move this text for inclusion in SMC-3, but was rather seeking to establish a basis for creating a future proposal for SPC-4. He believed that additional usage information would need to be included in that proposal. He also noted that no sense key had been defined.

Rod asked which direction should be taken for the future proposal, and was directed to produce a new proposal rather than a revision of the current document, which should serve as the continued definition of the consolidated list. Rod also asked if there was interest in using the Information field, as a method of providing information without the need for issuing a separate Read Element Status. Kevin Butt & Roger Cummings stated that the believed that the software applications would probably issue Read Element Status anyway, but there was some interest in using the field as well.

8.   New Business   Group

8.1   SMC-3 Add PREVENT ALLOW MEDIA REMOVAL command (06-442r0)   Noud Snelder
This item was deferred to the next meeting because of a lack of time.

8.2   SMC-3 Medium type codes (06-452r1)   Noud Snelder
This item was deferred to the next meeting because of a lack of time.

8.3   SMC-3 Support column in mode page codes and subpage codes table (06-456r0) Noud Snelder
This item was deferred to the next meeting because of a lack of time.

8.4   SMC-3 Command table and INQUIRY clean-up (06-477r0)   Michael Banther

This item was deferred to the next meeting because of a lack of time.

9.   Next Meeting Requirements   Michael Banther

Subject to approval by the T10 Plenary, the group will hold a meeting on January 15, 2007 during the T10 plenary week in Orlando, FL beginning upon the completion of the ADI-2 Working Group and completing no later than 7PM EST. The group discussed the need for an interim teleconference, and concluded enough work had been deferred from this meeting to justify a call. A date during the week of November 27 was the preferred, and Thursday November 30 at 8am PST, 1600 GMT for two hours was selected.

10.   Review New and Outstanding Action Items   Roger Cummings

Roger Cummings reviewed the following items with the meeting:

06-002   [Michael Banther] Reporting of virtual libraries / partitioning to host.

06-004   [Roger Cummings] Change the 3rd paragraph of 5.3.1 to clarify addresses and volumes.

06-005   [Roger Cummings] Revise 05-271r2 and post as 05-271r3.

06-012   [Rod Wideman] Bring a proposal for a new command/framework per November discussion item 7.4.

06-020   [Robert Payne] Define a philosophy for Write Exclusive Persistent Reservations in SMC.

06-044   [Roger Cummings] Solicit additional vendor-specific sense codes from library vendors per June discussion item 4.4.

06-045   [Rod Wideman] Bring a proposal for new sense codes for SMC (06-110r0) per June discussion item 4.4.

06-057   [Group] Review 06-397r1 and return alternative column contents to Noud where there is disagreement.

06-060   [Curtis Ballard] Create and post 06-272r1 (r0 as revised at the September meeting).

06-061   [Kevin Marks] Create and post 06-395r2 (r1 as revised at the November meeting plus editorial corrections).

06-062   [Noud Snelder] Create and post 06-397r1 (r0 revised as per discussion at the November meeting & also incorporating e-mail feedback).

06-063   [Halvard Eriksen] Investigate use of LOGICAL UNIT NOT READY, INITIALIZING COMMAND REQUIRED error code.

06-064   [Rod Wideman] Send e-mail to Erich Oetting to see if he can shed light on Tape Alert differences between SSC-2 & SMC-2.

06-065   [Michael Banther] Create and post 06-470r1 (r0 as revised at the November meeting).

11.   Adjournment   Group

Paul Suhler made a motion for adjournment. Rod Wideman seconded the motion. The group passed the motion unanimously. Michael Banther adjourned the group at 7:07 PM PST.