

1. Introductions: Group

The facilitator, Dale LaFollette, called the meeting to order at 5 PM and, as is customary, had the participants introduce themselves.

2. Approval of this Agenda: T11/99-429v0 - Group

The agenda was approved with a number of additions and a few changes that are included in these minutes

3. Approval of 7/13/99 Minutes: T11/99-411v1 - Stewart Wyatt

Approved.

4. Review Old Action Items: Stewart Wyatt

- #1. HP (Steve Jerman): to continue MAM discussion and post presentation. - Ongoing
- #2. Eric Oetting - to collect issues from the SCC letter ballot comments for the SPC-2. - Deferred until next month.
- #3. Dave Peterson: - to update the SSC. - Completed
- #4. Stephen Gold (Stewart Wyatt) HP: Resolve IBM letter ballot comments on TapeAlert. - Ongoing
- #5. Stewart Wyatt: Report on FC Tape Connector resolution. Completed
- #6. Bob Snively and Bob Kembel: Create a list of the specific BLS and ELS which are allowed before Login, including explicit Login, in an annex for later placement in the FC-FS. - Ongoing
- #7. Bob Snively: Review the SRR statement, it may not be flexible enough for the target. SRR must be properly interpreted in context and command known by the target. "Nasty case is did the transfer ready or the response (to an error) get hit." Deferred
- #8. Bob Snively: Return clause 2.8 to previous text. - Deferred
- #9. Bob Snively: Change Table 2 - Discovery of FCP capabilities entry "Initiator performs REC", Discovery mechanism needs to be changed from "None/Process Login" to "See References". - Deferred
- #10. Dave Peterson and group: Extend current document to cover LIP discovery process. Participants asked to communicate concerns to Dave. - Ongoing
- #11. Carl Zeitler: Review need for process associators. - Due in October.

5. SSC: T10 Working Drafts SSC-R18, LB Comment Resolution T10/99-011r3 - Dave Peterson

Will finish by next month. George has asked all SPC references be changed to SPC-2 and all SCSI references should drop the -3 after SCSI. (Use SCSI instead of SCSI-3)

6. FCP-2: T10 Working Drafts FCPR02, Changes to FCP-2, T10/99-211r1 - Bob Snively

Bob reviewed Charles Binford's "two and three star" comments from a file called LSI.PDF. (Charles had graded his comments in order of importance by assigning them one, two or three stars.)

#004 FCP restricts FCP\_CONF to queuing. Charles felt this was unnecessarily restricting. Bob felt that the initiator should know when it could expect that the target could request a confirm. No change

#006 LUN reset should be added to the table 3. Bob agreed

#007 FCP actions should only affect FCP exchanges. Bob agreed.

#008 Charles would like to reserve a device with dual ports where both ports were included in the reservation. He thought this could be facilitated by using the WWN for reservation. This led to a long discussion with the problem that the address space doesn't cross domains. Charles' request is an

architectural issue in violation of SAM. Bob agreed that the concept had merit and wanted to continue the discussion later.

#010 Confirmed Completion allowed. Charles thought the title was misleading especially in view of comment #004. Bob said he may review the title.

#012 page 30, 7.1, 1st paragraph, "the target shall not reject requests for retransmission of FCP\_XFER\_RDY or FCP-RSP". Matthew Wakeley felt that this was too strong of wording. Bob felt that if the device supports the error recovery, it should always comply. It may be necessary to separately specify FCP\_RSP and FCP\_XFER\_RDY. The issue was not resolved.

#014 Bus Inactivity limit and #015 Disconnect time limit. Charles thought these two parameters were specified inconsistently. George thought the specification was taken from earlier SCSI documents. Bob will review to them to make sure they are consistent with previous SCSI documents.

#018 Why is RR\_TOV so huge? Clause 10.3 change "must" to "shall" last paragraph of 10.3. Add default value for RR\_TOV for non REC\_TOV error recovery.

#022 page 57 11.1.2 second to last paragraph - what should a target do if it receives an ABTS? Bob agreed to do research.

#027 REC data count is over exchange not sequence. Check wording.

#029 page 58, 11.2.5 FCP\_RSP Recovery. Charles questioned the statement that a target shall retain exchange information until the queue depth is exceeded. Charles was concerned that the tape requirements are being imposed on disks. Jim Coomes agreed with Charles concern. A long discussion with many tangents followed. Clause 11 needs a statement to make sure that optional error recovery behavior is clearly noted. The end result of the discussion is that if a target is queuing and not using FCP\_CONF, the exchange information retained by the target can only be vendor specific or undefined. A proposal to only keep bad status was rejected since it would not allow differentiating a successfully completed command whose status had been discarded from a command that was lost.

Following is a summary of the cases of where the target can clearly know when to discard completed exchange data in regard to using FCP\_CONF:

Class 2 works with and without FCP\_CONF - FCP\_CONF is optional.

Class 3 error retry and queuing, FCP\_CONF is required, keep all FCP\_RSP not confirmed.

Class 3 no error retry, queue or not, without FCP\_CONF (Bob: retry optional and random results)

The discussion went down a significant tangent about moving the FC-TAPE developed error recovery approach into the FCP-2. The problem is that it appeared that tape error recovery requirements were being imposed on disk drives. Also what subset of the tape error requirements could a disk adopt without breaking it. There was a concern that the FCP was making guidelines a part of a standard. The discussion focused on the effect on disk drives that may want to use FCP\_CONF but don't want the restrictions that Bob has required the error recovery. Bob was restricting the use of FCP\_CONF to the applications described in a model that was developed last year. This limited FCP\_CONF to bad status responses and queuing. Ed Gardner and Dal Allan argued that the target should be able to ask for the CONF at its discretion and that an initiator should always comply. A straw poll vote was taken with 14 in favor of the change and 2 in favor of retaining the current wording. Bob asked Dal for a new model to justify the change.

#033 Target needs to provide a unique RX\_ID when FCP\_CONF is used. RX\_ID = FFFFh invalid, class independent.

6.1 Jim Coomes: 99-226r0

Jim's proposal was to clarify the Fibre Channel Control Mode page 19, Disable Soft Address (DSA). The clarification limits address selection to the hard address phase only (LIHA). Otherwise the device goes into nonparticipating mode. The intent of this bit was to not only to preclude the device from choosing an address during the soft address phase (LISA) but to preclude it from selecting its address during the previously assigned address phase (LIPA).

Matt Wakeley was concerned that this would break some existing implementations. Jim notes that this is the way that Seagate implemented this function. Bob Snively thought that this was the way most disks were implemented. Jeff Williams asked for a delay to check the impact on his design. This started a long discussion which resulted in a straw poll with the result that 8 voted to oppose a delay and 7 voted to allow delay. A second straw poll was taken asking if the change should be included in the next revision of the FCP (rev 3). The results were 7 for, 7 opposed. Another heated discussion followed about whether this was a technical or editorial change. There was also a proposal to change the name to something like, "Select only Hard Address."

## 6.2 Charles Binford: LSI.PDF

While the facilitator added this as a separate agenda item, it was actually covered in item #6, FCP review.

## 6.3 MCM George Penokie: T11/99-206r0

George proposed adding three fields to Fibre Channel Control page 19 for controlling MCM applications. Bob Snively objected to using mode pages because the applications are not FCP functions and apply to other protocols as well. He thought they should be controlled by the use of either an ELS or a login procedure. Jeff Williams noted that the other bits in this page are also not necessarily SCSI specific either and failed to see Bob's distinction. Bob Kembel raised a concern that these behaviors will affect protocols other than SCSI. Dal Allan spoke in favor of George's proposal by noting that there was no precedence for using ELS or login procedures for these controlling this type of parameters. SCSI has traditionally used mode pages to tune operations. If other protocols want these controls let them work out a procedure. Ed Gardner encouraged those who want to use an ELS for this purpose to make a proposal that could be reviewed. George said he would be revising the proposal with input from an earlier meeting where the proposal was also presented. Bob raised a second issue about the proposal in that it extended the length of the page. George noted that the page length is part of the payload. Bob wanted to make additional page length optional, as he is concerned about compliance to FCP-2.

## 7. Media Auxiliary Memory T10/99-223r1 - Sid Crighton

Last month Steve Jerman made a presentation. As a result of discussion during and after the meeting the proposal was modified. Sid Crighton gave a quick overview of the old proposal and described the changes that have been made. The changes included dropping the use of Read Element Status and the use of Log page 0Ah. The terminology is changed from "parameters" to "attributes". The addition includes two new commands for the SPC-2, Write Attribute and Read Attribute. The Inquiry VPD page is to be retained to allow read access for reserved devices.

The justification of moving the documentation to the SPC is that this capability has application to any type of removal media device.

## 8. Tape Connector Update SFF8072 - Stewart Wyatt

Stewart reviewed the changes made to the proposal. The 12 Volt pins had been reduced from 8 to 5 to improve compatibility with the SCSI connector with the understanding that the pins were rated more than 1 Amp each. Dal Allan reported that the pins were capable of handling 1.5 Amps currently. This could be improved by changing the material of the connector.

### 8.1 Curt Ridgeway 99-410v1

Curt had a counter proposal to the one made by Stewart. Curt's proposal was for a "fat pipe" proposal of 8 channels on the same connector to enable improved performance by striping the data transfer across 4 dual port channels. While Curt was successful in demonstrating that it was possible, he agreed to rework his proposal with a 100 pin connector to provide some spare pins and to avoid slowing down the tape connector proposal which is a critical path activity for the tape manufacturers.

9. T11 New Business: Group

None

10. T10 New Business: Group

None

11. Next Meeting Requirements: Group

Four hours minimum

12. Review New Action Items: Stewart Wyatt

Old forwarded action items

#1. Eric Oetting - to collect issues from the SCC letter ballot comments for the SPC-2. - Deferred until next month.

#2. Stephen Gold (Stewart Wyatt) HP: Resolve IBM letter ballot comments on TapeAlert. - Ongoing

#3. Bob Snively and Bob Kembel: Create a list of the specific BLS and ELS which are allowed before Login including explicit Login in an annex for later placement in the FC-FS. - Ongoing

#4. Bob Snively: Review the SRR statement, it may not be flexible enough for the target. SRR must be properly interpreted in context and command known by the target. "Nasty case is did the transfer ready or the or response (to an error) get hit." Deferred

#5. Bob Snively: Return clause 2.8 to previous text. - Deferred

#6. Bob Snively: Change Table 2 - Discovery of FCP capabilities entry "Initiator performs REC", Discovery mechanism needs to be changed from "None/Process Login" to "See References". - Deferred

#7. Dave Peterson and group: Extend current document to cover LIP discovery process. Participants asked to communicate concerns to Dave. - Ongoing

#8. Carl Zeitler: Review need for process associators. - Due in October.

New Action Items

#1. HP (Steve Jerman/Sid Crighton): Continue MAM discussion. Post presentation made today. Contact Ralph Weber about including MAM in the SPC-2. Make presentation to SCSI working group next month. Resolve issues with Sony AIT per Joe Breher's concerns. Determine need, if any, for content to be placed in the SSC.

#2. Bob Snively: (Binford FCP comment #006) LUN reset should be added to the table 3.

#3. Bob Snively: (Binford FCP comment #007) FCP actions should only affect FCP exchanges.

#4. Bob Snively: (Binford FCP comment #014 and #015) Check to see that Bus Inactivity limit and Disconnect time limit are specified consistently with other SCSI standards.

#5. Bob Snively: (Binford FCP comment #022) Define what a target shall do when it receives a ABTS.

#6. Bob Snively: (Binford FCP comment #027) Check wording to see that REC data is counted is over an exchange not a sequence.

#7. Bob Snively: (Binford FCP comment #029) Optional error recovery procedures need to be clearly marked. The requirements for using error recovery procedures in class 3 need to be clearly specified for disk drives. A target may request an FCP\_CONF at its disgression.

#8. Bob Snively: (Binford FCP comment #033) Target must use valid RX\_ID (<> FFFFh) when using FCP\_CONF.

#9. Bob Snively: (Binford FCP comment #018) Add a default value for RR\_TOV for non REC\_TOV error recovery.

#10. Bob Snively: Binford FCP comments #008, using WWN for reservations, and #010, title for Confirmed Completion Allowed, appeared to be unresolved without specific action items. In addition the proposal by Jim Coomes to clarify the DSA field appeared unresolved as well as a proposal to rename it more appropriately.

13. Adjournment: Group - At 9:20

Attendance:

Dale LaFollette	Storage Tek	Horst Truedtedt	True Focus
Cutis Ridgeway	LSI	Charles Binford	LSI Logic
Dave Ford	Clariion	Arlan Stone	UNISYS
Sid Crighton	HP	Joe Breher	Exabyte
Gile Frazier	IBM	Damian Bannon	SSL
Bill Lynn	Adaptec	Shinya Iguchi	Hitachi
Mark Dewilde	Pathlight	Matt Gaffney	StorageTek
Mike Fitzpatrick	Fujitsu CPA	Edward A. Gardner	Ophidian Designs
Pak Seto	Quantum	Matt Wakeley	HP
Jim Coomes	Seagate	Bill Martin	Gadzoox Networks
Stewart Wyatt	HP	Danny Ybarra	TI
Paul Suhler	Seagate	Bob Kembel	Connectivity Solutions
Carl Zeitler	Compaq	Paul Entzel	Quantum
Dave Baldwin	Emulex	John Lohmeyer	LSI Logic
Dal Allan	ENDL	George Penokie	IBM
Jeff Williams	WD	Dennis Moore	KnowledgeTek