Joint T11/T10 FC-TAPE AdHoc Meeting Minutes   T11/99-231v0
April 14 and 15, 1999 - Palm Springs, California
Stewart Wyatt, Hewlett Packard, FC_TAPE Secretary, stewart_wyatt@hp.com, 208-396-3594

1. Introductions: Group

2. Approval of this Agenda: T11/99-170v0 Group, approved as amended

3. Approval of 3/9 Minutes: T11/99-147v0 Stewart Wyatt, approved

4. Review Old Action Items: Stewart Wyatt

Action items carried over from before the March meeting:
#1. Dave Peterson/Bob Snively - Update the error recovery documentation to resolve the time-out for ELS: Completed
#2. Group - Resolve the issue of signalling support for FC-Tape error recovery, CRN support and data overlay in either/or inquiry data, mode pages, PRLI or by some other means. Completed
#3. Bob Snively - Consider whether SRR is SCSI specific. Put in an annex in FCP-2 for inclusion later in the FC-FS. Completed
#4. Dave Peterson - Report the omission of BLS time-out in FC-PH. Completed
#5. Dave Peterson - Consider modifying the tape model to require that the tape power up uninitialized, unloaded state. SSC issue. Completed
#6. Dave Baldwin - Investigate eliminating TPRLO. Rejected.
#7. Dave Peterson/group - Resolution of need for authentication documentation. Completed - referred to FC-FS see minutes.
#8. Dave Peterson will attempt to document EOD behavior more precisely in the SSC. Completed

Action items from the last meeting (March).
#1. Dave Peterson - Several reviewers noticed problems with the latest draft of the profile. Check the master pages for revision and spelling in the headers. In addition there are many cases of missing letters. These usually occur at the end of the line but sometimes occur in the middle of a line as well. Fixed
#2. Dale Lafollette - Check on status of new TapeAlert flags. The editor now has a direct contact. See the minutes.
#3. Stewart Wyatt - Bob Snively questioned how TapeAlert flags are cleared. He felt the flag should not be cleared until the underlying cause had been corrected. He felt the text was unclear. Stewart will forward his concerns to Stephen Gold for comment. Completed - Bob is still unhappy and will post his issues to the reflector for review by the TapeAlert working group. See the new action items.
#4. Dave Peterson - Clean up TapeAlert description using appropriate standards text. Completed
#5 Erich Oetting - Consider specifying the compression algorithm like supported density is specified. Forwarded to next meeting.
#6 Stewart Wyatt - Post Fibre Channel tape connector specification to the reflector before the next meeting. Completed
#7 Bob Snively - Provide an updated copy of the FCP-2 by March 19th. Completed
#8 Dave Peterson - Provide an updated copy of FC-TAPE on or before April 1. Post issues to the

reflector. Completed

#9 Group - Review letter ballot comments and post disagreements to the reflector. No postings were made.

#10 Stewart Wyatt - Post action items to the reflector two weeks before the next meeting. Completed

#11 Dave Peterson - See item 5 in the minutes for changes to the data compression related mode pages. Completed

#12 Dave Peterson - See item 7 in the minutes for changes to the SRR text description. Completed

5. FC-TAPE Document Review: T11/99-069v2 and T11/99-092v2 Dave Peterson

Dale LaFollette led the group through a page by page review of the latest draft of the proposal. The changes were mostly editorial in nature and are listed below.

Page 2 and 3: Reference numbers incorrect

Page 4 3.1.6 Login_BB_Credit include FLOGI and FDISC

Page 4: 3.1.1.10 Title bold and cross reference errors in 3.1.12 and 13

Page 6 Removed second sentence after 3.3 heading

Page 22 SRR is now an FC-4 Link Service. So it needs to be in a table of its own.

Page 23: Note 3 PRLO misspelled

Page 25: Take out space in note 1

Page 26: Replace Clause 7 on Timers with reference to FCP-2. (FCP-2 will not reference AL_TIME and R_T_TOV)

Page 30 First two paragraphs will to be turned into a table. Reference to SCC should be SAM-2.

Page 32 Table 22 FCP_CONF_REQ

Page 40 Mode Select Page 02 should be an I

Page 41 Mode Sense Page 02 should be an I

Also Page 18 is duplicated in both entries

Page 45 Table 27 header format fixed

Page Note 4 is not referenced in Table 28

Page 49 Note 5 upper case errors on "One"

Table 28 headers - more "Requirement" heading up one line

Index will be taken out

Stewart Wyatt, HP, questioned the implementation requirements for FCP_CONF. This was reviewed and the group decided to leave the text as is.

6. FCP-2: T10 Working Drafts T10/99-168r0 Bob Snively

This agenda item was deferred until Thursday morning (15th). Bob had created a document describing the changes made to FCP-2 revision 1. The minutes from this agenda item reflect this document, T10/99-168r1. Bob intends to update the document (to revision 2) with the comments and decisions made in this meeting and present it to the T10 plenary for approval next month. These minutes will not attempt to reproduce Bob's document. The reader is advised to refer to Bob's document while reading these minutes.

Bob started with his review with clause 5 "Items not planned for inclusion".

Clause 5.1 Definition of mode page parameters for FCP, DTDC field - No action taken. (This item

is the proposal Jim Coomes presented in agenda item 9.1.)

Clause 5.2 Restrict data overlay to error recovery. Decision: This restriction should only be in the tape profile, not in FCP-2.

Clause 5.3 Continuously increasing sequence count. Decision: Okay - adequately covered in other documents.

Clause 5.4 Data checking when doing overlay or out of order transfer. Decision: Bob is adding a warning about the risk of incomplete data transfers when data overlay is allowed.

Clause 5.5 FCP_RSP IU length. Some early implementations issued "good" responses that were 12 bytes in length by not sending invalid fields. These implementations are noncompliant. Action: Bob will look for a place to make the statement that a response will be a minimum of 24 bytes in length.

Clause 5.6 Automatic persistent reservation registration update: Decision already installed.

Clause 5.7 Reference for ABTS. Decision: Included in FCP-2 Annex for inclusion in a later standard. Action: Needs to be reviewed with respect to FC-PH

Clause 5.8 FCP_CONF and linked commands. Decision: FCP_CONF and linked commands are mutually exclusive except for the last command or a check condition that ends the link. Action: Bob will check to see that this is explicitly prohibited in the text.

Clause 5.9 Obsolete Third Party Process Logout. Decision: Cannot be obsoleted. Is documented in FC-FS

Clause 5.10 Rules for ELS generation before Login. Action: Bob will talk to Bob Kembel and get a list of the specific BLS and ELS which are allowed before login. (Login can be implicit.) List in annex for moving to FC-FS

Clause 5.11 SRR transfer of initiative. Decision: No change, current approach is right.

Clause 5.12 Retry Offset. Decision: If the starting point is ambiguous recovery starts at the beginning. Action: Participants requested to review - Bob believes its ok.

Clause 5.13 Review Enable. Decision: No change (This is the same issue as clause 5.1.)

Clause 5.14 Correction of DDIS bit. Discussion: Could also include FDISC and FAN in public environment. Bob noted that this violates FC-AL2. Jim Coomes noted that it also violates PLDA, only shows up in a limited environment. Decision: No change Action: Jim Coomes to make a proposal to limit certain of the mode page bits to private loop applications.

Clause 5.15 Consideration of additional ELS. A request for documenting ADISC, PDISC, FDISC (and FAN) in the FCP-2. Decision: Documented in other places - referred to in FCP-2. Bob noted that Jeff Stai believes that the public loop discovery process documented in FLA has some problems. Discussed where the verification process should be documented. Decided it should go FC-FS. Action: Dave Peterson to write a proposal carry the protocol for discovery to FC-FS.

Clause 5.16 CRN recovery. Action: Bob requested participants to review.

Next Bob reviewed clause 3 "Technical changes to be approved."

Clause 3.1 Timer Definitions RR_TOV, REC_TOV and ULP_TOV. Decision: Yes

Clause 3.2 REC_TOV timer implementation. Relaxing the restriction of a REC_TOV timer per exchange. Decision: Change the proposal to Matt Wakeley's suggestion to require waiting at least REC_TOV and removing the requirement of one timer per exchange.

Clause 3.3 Negotiation of FCP recovery capabilities. This issue is how to determine that a device supports FC-Tape recovery. Decision: Accepted a proposal made by Dave Baldwin to use the FCP_CONF bit in the PRLI to indicate support for FCP_CONF, REC, and SRR capabilities. The bit will renamed to TBD. Vote: 10 approve, 2 against, 5 abstain.

Clause 3.4 Obsolete mixed command/data and data/response obsolete. Bob noted that these capabilities are incompatible with tape error recovery. Voted 19 approve, 0 opposed, 0 abstain.

Clause 3.5 Obsolete First Burst Length parameter definition. Decision: Changed proposal to say: Applies only if outbound (write) operation transfer and write XFER-RDY disabled otherwise the field is ignored. Action: Bob Needs to review proposal for improper references to loop and tenancies. Vote: 11 approve, 0 opposed, 9 abstaining.

Clause 3.6 Interpretation of FCP_RSP. This proposal clarifies the text. Vote: 14 approve, 0 opposed, 1 abstaining. Discussion: Kurt request that when validity = 0, implies that the content is undetermined as a general rule be explicitly stated. Action: Bob Check to be sure that "ignored" = 0 length.

Clause 3.7 SRR Reason Code incorrect. Action: Neil Wanamaker to provide corrected values.

Clause 3.8 SRR to be rewritten. This proposal is to make SRR an FC-4 link data frame. This is the first time that an FC-4 link data frame has been defined. Vote: 10 yes. 0 opposed, 4 abstain.

Clause 3.9 Make class independent recovery optional for FCP-2. Wordage changed to make the recovery process not tape exclusive. Decision: OK.

Next Bob reviewed Clause 1.0 Technical Changes. Only two items were reviewed.

Clause 1.4 RR_TOV Timer defined in mode page. Decision: Changed defined values for RR_TOV units to 1, 3, 5. 0 is defined to mean that there is no timer specified in this mode page, all other values are reserved. Voted: 13 approve, 0 opposed, 1 abstaining.

Clause 1.5 Long CDB definition. Discussion about the position on FCP_DL unclosed. Action: Review proposal with respect to the position of FCP-DL.

7. SSC: T10 Working Drafts Dave Peterson

The next draft is waiting for TapeAlert text that is to come from a TapeAlert working group meeting held the previous day. Dave expects that he should have this input by next Tuesday and be able to issue a new draft. There was some concern expressed that the SSC not be held up if the information from the TapeAlert group is not received promptly.

8. T11 New Business Group

8.1 FC-Tape Possible actions, 2LB or 1PR, Dale LaFollette
The group discussed the next action to take with the FC-TAPE proposal. The options are to request another letter ballot review from T11 or to forward for public review. The discussion revealed that forwarding for public review essentially publishes the document. Dale called a vote. The results were 3 votes for a second letter ballot and 9 votes for public review. Action: Dale Lafollette to forward FC-TAPE for further processing for public review.

8.2 Connector Proposal, Stewart Wyatt, Hewlett Packard: Stewart presented an argument to change the pinout in his proposal for a 68 pin SCA-2 connector from the existing 40 pin connector defined in SFF-8067. There was no support for the change. Action: Stewart will modify his proposal to match SFF-8067.

8.3 Private only. Joe Breher, Exabyte. Requested support for private loop only operation - supported by Tak Seto, Quantum, and Jim Coomes, Seagate. Customers have requested this as a

means of limiting access to the drive. Dale Lafollette said that he has customers that don't want the tape to be a public device either. Dal Alan, ENDL, thought that a "private only" mode page bit might be needed. Joe's proposal was unanimously defeated. While a venndor can implement a private loop device, this behavior will be non-compliant to this profile.

9. T10 New Business: Group

9.1 FCP-2 Jim Coomes, Seagate, Mode page control of FCP IUs in a Loop Tenancy. An unspecified initiator requires that the FCP_RSP be sent in a different loop tenancy than the last FCP_DATA read frame. Need to control whether the FCP_RSP can be sent in the same loop tenancy as the last FCP_DATA frame. Bob Snively suggested changing the proposal 1 IU per tenancy. The group voted 2 to 14 against incorporating this in the FCP-2. A suggestion was made to document this in a vendor unique manner and to make that information available for others who need it. Note that this issue is also discussed in the FCP review, agenda item 6.

9.2 SSC Carl Zeitler, Compaq. Information field value after space command early termination. Copying from Carl's overhead, A change was noted in SSC from SCSI-2. It relates to the last sentence of the second paragraph (on filemarks) on page 44: "A CHECK CONDITION caused by an early termination of any SPACE command shall not result in a negative information field value." Carl illustrated a case where a negative value can be calculated. Action: He asked the tape vendors to clarify how this is implemented. Carl will post an explanation of the issue to the reflectors.

10. Review New Action Items: Stewart Wyatt

General Action Items
#1. Erich Oetting - Consider specifying the compression algorithm like the supported density is specified.
#2. Bob Snively - Post concerns about TapeAlert to reflector.
#3. Dale LaFollette - Ask T11.3 plenary for public review of FC-TAPE.
#4. Stewart Wyatt - New connector proposal matching 40 pin SFF-8067 connector.
#5. Carl Zeitler - post question about negative information field values on early termination of SPACE command to reflector
#6. Tape vendors to reply to Carl's issue.

FC-TAPE action items
#1. Dave Peterson, make the changes identified in these minutes under agenda item 5.

FCP-2 action items.
#1. Bob Snively will look for a place to make the statement that a response will be a minimum of 24 bytes in length.
#2. Bob Snively will review the ABTS changes in the FCP-2 draft with respect to FC-PH.
#3 Bob Snively will check the text to see that it states that FCP_CONF and linked commands are mutually exclusive except for the last command or a check condition that ends the link.
#4 Bob Snively and Bob Kembel and list the specific BLS and ELS which are allowed before login including explicit Login in an annex for later placement in FC-FS.
#5 Bob Snively requested that the error retry offset text (Clause 5.12 in T10/99-168r1) should be

reviewed by the participants.

#6 Jim Coomes will make a proposal to limit certain of the mode page bits to private loop applications.

#7 Dave Peterson to write a proposal to carry the protocol for discovery to FC-FS.

#8 Bob Snively requested participants to review the CRN recovery (T10/99-168r1 Clause 5.16).

#9 Bob Snively needs to review the proposal for first burst length parameter definition.

#10 Bob Snively check to be sure that "ignored" = 0 length in FCP_RSP and other relevant places.

#11 Group review Long CDB definition proposal with respect to the position of FCP-DL.

11. Adjournment: Group

Table 1: Attendance List

Name	Company	Name	Company
Dale Lafollette	StorageTek	Pak Seto	Quantum
Dave Peterson	StorageTek	Jim Coomes	Seagate
Stewart Wyatt	HP	Gary Warden	SRB Consulting
Jeff Stai	QLogic	Paul Suhler	Seagate
John Scheible	IBM	David Ford	Clariion
Carl Zeitler	Compaq	Robert Pedersen	General Dynamics
Neil Wanamaker	Crossroads	Neil Edmunds	Xyratex
Arlan Stone	Unisys	Mark DeWilde	Pathlight
George Penokie	IBM	Matthew Gaffney	StorageTek
Jeff Williams	WD	Mike Fitzpatrick	Fujitsu CPA
Bob Snively	SUN	Lloyd Thorsbakken	Unisys
Charles Binford	LSI	Matt Wakeley	HP
Curt Ridgeway	LSI	Ron Martin	Seagate Software
Dave Baldwin	Emulex	Bill Martin	Gadzoox Networks
Joe Breher	Exabyte	Horst Truestedt	ENDL
Steve Luning	Dell	Jim Nelson	Northrop Grumman
Brad Culp	HP	Danny Ybarra	Texas Instruments
Colin L. Schaffer	MYLEX	Bob Kembel	Connectivity Solutions

Table 1: Attendance List

Name	Company	Name	Company
Dennis Moore	Knowledgetek		