

Draft Minutes – FC-FS Working Group Meeting Sept 12, 2000 – Huntington Beach, CA 9 AM - 4 PM

An ad hoc meeting of working group FC-FS of NCITS Technical Committee T11 Task Group T11.3 was held at Huntington Beach, California on September 12, 2000, in conjunction with the plenary meeting of the ANSI/NCITS T10 Technical Committee. Attendance at this meeting is tabulated at the end of this document.

1. Opening remarks and introductions: John Scheible

John Scheible, IBM, called the meeting to order at 9:00 AM, thanked our host company, QLogic, and led a round of introductions.

2. Call for changes to minutes

2.1 FC-FS minutes - 08/08/00 [00-506v0](#) Bob Nixon

The minutes of the previous ad hoc meetings August 8, 2000 were approved with no corrections. It was later noted the AL-2 actions 8.2.5 and 8.2.6 were incorrectly listed as for FS. A [new document](#) will be generated with this change.

2.2 FS report to T11.3 - 08/08/00 [00-501v0](#) John Scheible

This was noted but not presented.

3. Approval of this agenda: [00-546v0](#) John Scheible

The agenda for this meeting was approved with the following [corrections](#):

3.1 Dave Peterson added Worldwide Name Usage

4. Review of old FS action items: [00-546v0](#) John Scheible

4.1 AL-3 Action Items NOT REVIEWED IN THIS MEETING

4.1.1 Horst Truedtedt will write a proposal to show how a second FL_Port or a new FL_Port will be detected so that an F/NL_Port can retire from its fabric functions. CARRYOVER.

4.1.2 Upload Horst Truedtedt proposal presented at the meeting (When an FL_Port detected, how does F/NL Port retire?) CARRYOVER.

4.1.3 Bill Martin to recast [T11-00-474v0](#) as a "FC-AL-2 defect report". NEW (00/08).

4.1.4 Bill Martin to prepare a proposed amendment to FC-AL-2 to correct the defect reported by [T11-00-474v0](#). NEW (8/00).

4.2 FS Action Items

- 4.2.1 Bob Kembel to update his proposal FC Link Services and Login States. CARRYOVER (2/00).
- 4.2.2 Bob Kembel to specify the reason codes for login reject. CARRYOVER (2/00).
- 4.2.3 Bob Kembel to update clause 15 - Link Services. Partial CARRYOVER (6/00).
- 4.2.4 Steve Wilson (Brocade) to provide the editor with clarifications to class 4 - 2 weeks. Partial CARRYOVER (6/00).
- 4.2.5 Bob Snively to complete T11-00-418v0 including state machine diagrams and referencing the relevant UNH tests, assuring that it is obvious this is an option, not a requirement. NEW (00/08). CLOSED (private communication to editor)
- 4.2.6 Scott Kipp and Charles Binford to have a conference call to resolve changes for interswitch distribution of LIRR and RSCN. NEW (00/08) CLOSED (see [00-525v0](#)).
- 4.2.7 Bob Snively to provide the list of FC4 LS references to include in FS. NEW (00/08) CLOSED (private communication to editor).
- 4.2.8 Bob Snively to modify as needed the text of FS regarding REC to allow the usage intended by FCP2. NEW (00/08) CLOSED (see [00-284v5](#)).
- 4.2.9 All interested parties especially FCP-2 to review [T11-00-284v4](#) request 9 including its redefinition of a data frame and establish an opinion. NEW (00/08) CLOSED (approval of [00-284v5](#)).
- 4.2.10 Charles Binford to update [T11-00-361v1](#) to incorporate changes requested at the FC-FS ad hoc meeting on August 8, 2000. NEW (00/08) CLOSED (see [00-538v0](#)).
- 4.2.11 Bob Snively to update [00-415v0](#) to incorporate the changes requested at the FC-FS ad hoc meeting on August 8, 2000. NEW (00/08) CLOSED (see [00-532v0](#)).
- 4.2.12 Mike O'Donnell to document LS-RJT with reason code Protocol Error as proper response if RTIN Request Payload Maximum Size field has value x'ffff'. NEW (00/08) CLOSED (private communication to editor).
- 4.2.13 Mike O'Donnell to change " Port ID" to "Address Identifier of the Node" in RTIN ACCEPT Payload Connectivity Unit Record and in table 132. NEW (00/08) CLOSED (private communication to editor).
- 4.2.14 Jim Nelson to note in the acronym glossary that the old usage of SCR is obsolete and it is now used for "State Change Registration". Elsewhere all reference to "Stacked Connection Request" will be spelled out. . NEW (00/08) CLOSED (editorial action).

4.3 Urgent need for closure on old actions

Resolution of certain longstanding actions is urgently needed for completion of the FC-FS specification.

ACTION: John Scheible to prompt Bob Kembel for resolution of his action items.

5. Old FS Business

5.1 FC-FS approved schedule [00-345v1](#) John Scheible

We are still expecting to request ballot next meeting, but not clear whether T11.3 or T11 yet.

6. Scheduled New Business FS

6.1 FC-FS document status [00-___v_](#) Jim Nelson

6.1.1 Status report

The content change to be expected (so far) in the next version of the FC-FS specification (version 0.40) was summarized by Jim Nelson.

6.1.2 Class 6 clarification

It was observed that certain expected clarifications to Class 6 behavior had not yet been delivered.

ACTION: Mike Dorsett to provide clarifications to Class 6 behavior to Jim Nelson.

6.1.3 Review of tables

Jim presented for review some tables that were revised to reflect removal of ACK_N. The group identified that in Table "ACK precedence" the second and fourth rows and the second and fourth columns should be removed. Table "N_Port Class Service Parameters - ACK Support" raised no immediate issues.

6.1.4 Conflicting values for Basic Link Service timeout

In an apparent conflict between [99-179v0](#) and [99-189v0](#), 99-189 won ("2 x R_A_TOV", not "2 x E_D_TOV").

6.2 Speed negotiation update [00-543v0](#) Carl Zeitler

The status of the speed negotiation study group was presented by Carl Zeitler. Ad Hoc meetings were held 8/3 and 8/28. They were very productive.

- The Lindsay algorithm, with important transplants from the Zeitler algorithm, was chosen as base.
- Restriction to point-to-point operation was accepted in order to limit the convergence time. (L_port-to-hub is considered a valid instance of point-to-point)
- Requiring error-free "follow" time was rejected. It was intended as a robustness test, however, it introduced potential infinite cycles that the group was unable to resolve.
- A draft proposal for incorporating this into FS has been published (00-544v0, see 6.3).

A "snoop" proposal, intended to reduce processor time allocated to disconnected ports and minimize disruption of active loops on legacy hubs, was presented but withdrawn due to perceptions of incompleteness.

ACTION: Speed Negotiation Working Group to generate for letter ballot a snoop algorithm to resolve the processor load and hopefully also the interruption of established loops.

6.3 Speed negotiation [00-544v0](#) Carl Zeitler

Document [00-544v0](#) was distributed prior to the meeting. [00-544v1](#) was presented with a few changes. It was updated during the meeting to correct wording and very minor technical issues.

00-544 was accepted without objection in the pending [v2 version](#), as modified during the meeting.

ACTION: Bill Ham to provide [00-544v2](#) to Jim Nelson before 9/19/00 for incorporation into FS.

ACTION: Bill Ham to schedule a Speed Negotiation teleconference before the next plenary.

6.4 LIRR proposal [00-538v0](#) Charles Binford

6.4.1 Charles Binford presented revisions to the link incident report registration format for the following purposes:

6.4.1.1 *Add a means of registration for either conditional or unconditional reception of RLIR.*

6.4.1.2 *Add a code to register for only "common link incident record".*

6.4.2 Discussion was deferred in order to consider it along with the next presentation, at which time the following changes to his proposal were requested as conditions of approval:

6.4.2.1 *Clarify that a sender of RLIR must attempt up to every port registered to conditionally receive the report, until one attempt is accepted.*

6.4.2.2 *Make automatic deregistration on delivery failures optional.*

6.4.2.3 *Make other minor clarifications in wording not captured here.*

6.5 Common format for RLIR [00-532v0](#) Bob Snively

6.5.1 Bob Snively presented revisions to the common link incident record format for the following purposes:

6.5.1.1 *Assure that a RLIR may be originated from a port other than the incident port (which, obviously, may not be capable of originating anything).*

6.5.1.2 *Allow an extended common link incident record, while retaining full backward compatibility.*

6.5.1.3 *Allow RLIR to indicate that ONLY the common record is present (see 6.4.1.2). It was observed that current products can not legally allow registration for only the common part, and therefore it may be awkward to someday REQUIRE support for it.*

6.5.1.4 *Define content for the extended common link incident record, most of which is optional.*

6.5.2 The following changes to his proposal were requested as conditions of approval:

6.5.2.1 *Insert wording change suggested by Miles Frazier to limit how many ports can report the same incident.*

6.5.2.2 *Define "incident port", "connected port", and "reporting port" and use them to unambiguously describe the referent of "port" and "node" values.*

6.5.2.3 *Remove example casting E-ports as lacking a valid port id, and clarify the rules for how much of the port id may be zero.*

6.5.2.4 *Make the physical port number mandatory and remove the value for "unknown".*

6.5.2.5 *Make the transaction id start at one and reserve value zero to mean "explicitly unspecified".*

6.5.2.6 *Remove wraparound and low-order byte content constraints on vendor-specific time stamp.*

6.5.2.7 *Remove resynchronization requirement on timeserver-based timestamp.*

6.5.2.8 *Remove "vendor-specific" and "seconds" formats for the time stamp.*

6.5.2.9 *Remove the mandatory sense of the examples of content of specific link incident records.*

6.5.2.10 *Use Giles Frazier's wording for changes required in [FC-SB-2](#).*

6.5.2.11 *Make other minor clarifications in wording not captured here.*

6.5.3 A straw poll marginally affirmed the question "Shall the timestamp remain in the common link incident record format?": yes 6; no 5; abstain 7.

6.5.4 The proposals [00-532v0](#) (Snively) and [00-538v0](#) (Binford) were accepted without objection pending the changes enumerated in sections 6.5.2 and 6.5.2 of these minutes.

ACTION: Bob Snively to modify [00-532v0](#) in accord with discussion at the FC-FS ad hoc meeting 9/12/00 and deliver to Jim Nelson for incorporation into FS.

ACTION: Charles Binford to modify [00-538v0](#) in accord with discussion at the FC-FS ad hoc meeting 9/12/00 and deliver to Jim Nelson for incorporation into FS.

6.6 FLOGI Payload size correction [00-451v0](#) Craig Carlson

Craig Carlson tried to present [00-451v0](#), but it was approved by acclamation before he could start. (This was previously tentatively approved pending an email survey, since completed.)

ACTION: Craig Carlson to deliver [00-451v0](#) to Jim Nelson for incorporation into FS.

6.7 FS changes from FCP-2 review [00-284v5](#) Bob Snively

Bob Snively presented the latest FS changes requested by FCP-2.

- 6.7.1 Change REC from an ELS to an FC4-LS, taking it out of FS entirely ([284v5](#) section 8). Approved as written without objection.
- 6.7.2 Allow FC-4 specific use of the Parameter field in the frame header when not used for relative offset ([284v5](#) section 9). Approved as written without objection.

6.8 Event Qualifier for RSCN [00-415v1](#) Bob Snively

Bob Snively presented a corrected version of his proposal for RSCN Event Qualifiers, which was previously approved pending this change. No discussion was requested. It was delivered to Jim Nelson for incorporation into FS.

6.9 FS technical review comments [00-456v3](#) John Scheible

John Scheible continued resolution of FS internal review comments began last meeting. Summary:

JS001-T CLOSED
JS002-T RESOLVED
JS003-T CLOSED
JS004-T CLOSED
JS005-T CLOSED
JS006-T OPEN
JS007-T OPEN
JS008-T OPEN
JS009-T CLOSED
JS010-T CLOSED
JS011-T CLOSED
JS012-T CLOSED
JS013-T OPEN
JS014-T OPEN
JS015-T OPEN
RW001-T CLOSED
RW002-T CLOSED
GC001-T CLOSED AS FOLLOWS: LS_RJT with protocol error
GC002-T CLOSED AS FOLLOWS: Use the term "Address ID of the node"
GC001-T OPEN pending Kembel action

7. Unscheduled new AL-3/FS business

7.1 Clock Sync Quality of Service [00-547v0](#) Jim Nelson

Jim Nelson presented a proposal to augment clock synchronization to communicate some quality of service indications. Since the document was not available until this morning and was not presented in detail here, the group's general opinion was not to allow it in the next revision of the FS document.

7.2 WWN usage [00-548v0](#) Dave Peterson

Dave Peterson posed some questions relating to allowing WWPNS to be changed to enable transparent field replacement of units. The answers were generally not supportive of the intended technique. Using type 3 (locally assigned) WWNs was considered legal but dangerous (ie, a business decision). The problem posed by fixed WWPNS to transparent field replacement was considered important for future consideration so...

ACTION: Dave Peterson to deliver his presentation on WWPN of transparent field replacement units to the T11 FTP server.

8. Review of FS action items

8.1 AL-3 Action Items

- 8.1.1 Horst Truedstedt will write a proposal to show how a second FL_Port or a new FL_Port will be detected so that an F/NL_Port can retire from its fabric functions. CARRYOVER.
- 8.1.2 Upload Horst Truedstedt proposal presented at the meeting (When an FL_Port detected, how does F/NL Port retire?) CARRYOVER.
- 8.1.3 Bill Martin to recast [T11-00-474v0](#) as a "FC-AL-2 defect report". CARRYOVER (00/08).
- 8.1.4 Bill Martin to prepare a proposed amendment to FC-AL-2 to correct the defect reported by [T11-00-474v0](#). CARRYOVER (8/00).

8.2 FS Action Items

- 8.2.1 Bob Kembel to update his proposal FC Link Services and Login States. CARRYOVER (2/00).
- 8.2.2 Bob Kembel to specify the reason codes for login reject. CARRYOVER (2/00).
- 8.2.3 Bob Kembel to update clause 15 - Link Services. Partial CARRYOVER (6/00).
- 8.2.4 Steve Wilson (Brocade) to provide the editor with clarifications to class 4 - 2 weeks. Partial CARRYOVER (6/00).
- 8.2.5 Mike Dorsett to provide clarifications to Class 6 behavior to Jim Nelson. NEW (9/00)
- 8.2.6 Speed Negotiation Working Group to generate for letter ballot a snoop algorithm to resolve the processor load and hopefully also the interruption of established loops. NEW (9/00)
- 8.2.7 Bill Ham to provide [00-544v2](#) to Jim Nelson before 9/19/00 for incorporation into FS. NEW (9/00)
CLOSED
- 8.2.8 Bill Ham to schedule a Speed Negotiation teleconference before the next plenary. NEW (9/00)
- 8.2.9 Bob Snively to modify [00-532v0](#) in accord with discussion at the FC-FS ad hoc meeting 9/12/00 and deliver to Jim Nelson for incorporation into FS. NEW (9/00)
- 8.2.10 Charles Binford to modify [00-538v0](#) in accord with discussion at the FC-FS ad hoc meeting 9/12/00 and deliver to Jim Nelson for incorporation into FS. NEW (9/00)
- 8.2.11 Craig Carlson to deliver [00-451v0](#) to Jim Nelson for incorporation into FS. NEW (9/00)
- 8.2.12 Dave Peterson to deliver his presentation on WWPN of transparent field replacement units to the T11 FTP server. NEW (9/00)
- 8.2.13 John Scheible to prompt Bob Kembel for resolution of his action items. NEW (9/00)

- 8.2.14 John Scheible to prompt Steve Wilson (Brocade) for resolution of his action item to clarify certain behaviors of Class 4. NEW (9/00)
- 8.2.15 John Scheible to prompt Mike Dorsett for resolution of his action item to clarify certain behaviors of Class 6. NEW (9/00)

8.3 Changes to the FC-FS specification approved at this meeting

- 8.3.1 Remove the second and fourth rows of Table "ACK precedence". Approved without objection.
- 8.3.2 Basic Link Service timeout as defined in [99-189v0](#). Approved without objection.
- 8.3.3 Speed Negotiation as defined in [00-544v2](#). Approved without objection.
- 8.3.4 LIRR / RLIR changes proposed in 00-538v1 and 00-538v1, both as modified in accord with discussion at the FC-FS ad hoc meeting 9/12/00. Approved without objection.
- 8.3.5 FLOGI Payload size correction to 116 bytes ([00-451v0](#)). Approved by acclamation.
- 8.3.6 Change REC from an ELS to an FC4-LS, taking it out of FS entirely ([00-284v5](#) section 8). Approved as written without objection.
- 8.3.7 Allow FC-4 specific use of the Parameter field in the frame header when not used for relative offset ([00-284v5](#) section 9). Approved as written without objection.
- 8.3.8 A corrected version of RSCN Event Qualifiers ([00-415v1](#)), which was previously approved pending this change.

9. Future meeting plans

- 9.1 The usual time in conjunction with the October 2000 T11 plenary at Nashua, NH
- 9.2 No meeting in conjunction with the November 2000 T10 plenary at Monterey, CA

10. Adjournment (FS WG).

Meeting adjourned at 4:07 PM.

Attendance - FC-FS ad hoc meeting 09/12/00

First Name	Last Name	Company Represented	Email
Robert	Snively	Brocade	rsnively@brocade.com
Bill	Ham	Compaq	bill_ham@ix.netcom.com
Carl	Zeitler	Compaq	carl.zeitler@compaq.com
Bob	Nixon	Emulex	bob.nixon@emulex.com
Dal	Allan	FSI	endlcom@acm.org
Mike	Fitzpatrick	Fujitsu	mfitzpatrick@fcpa.fujitsu.com
William R.	Martin	Gadzoox	bmartin@gadzoox.com
Giles	Frazier	IBM	grf@us.ibm.com
Phil	Mills	IBM	millsp@us.ibm.com
John	Scheible	IBM	jpscheible@aol.com
Pak	Seto	Interphase	pseto@iphase.com
Charles	Binford	LSI Logic	charles.binford@lsil.com
Scott	Kipp	McData	skipp@mcdata.com
Michael	O'Donnell	McData	modonnell@mcdata.com
Charles	Monia	Nishan	cmonia@nishansystems.com
James	Nelson	Northrop Grumman	nelsoja5@mail.northgrum.com
Craig	Carlson	Qlogic	craig.carlson@qlogic.com
James	Coomes	Seagate	jim_coomes@seagate.com
David	Peterson	StorageTek	dap@network.com
Ken	Moe	Sun Microsystems	kenneth_moe@sun.com
Ken	Hirata	Vixel	khirata@vixel.com
Dave	Lewis	Vixel	dlewis@vixel.com