

Final Minutes

T11.3 FC-FS and FC-AL-2 Working Group Meeting

June 5-6, 2001 – Minneapolis, Minnesota

5th, 1 PM – 6 PM; 6th, 1 PM – 6 PM

A meeting of working group FC-FS of NCITS Technical Committee T11 Task Group T11.3 was held at Minneapolis, Minnesota on June 5 and 6, 2001. Attendance at this meeting was 57 people representing 40 companies, and is detailed at the end of this document.

1. Opening remarks and introductions: John Scheible

Facilitator John Scheible opened the meeting on Tuesday, June 5, 2001, at 1:30 PM, thanked our host company, Qlogic, and led a round of introductions.

2. Call for changes to minutes

2.1 AL-2/FS report to T11.3 - 04/11/01 ([T11/01-178v1](#)) John Scheible

2.2 AL-2/FS minutes - 04/10/01 ([T11/01-200v0](#)) Bob Nixon

2.3 AL-2/FS minutes - 05/09/01 ([T11/01-229v0](#)) Bob Nixon

3. Approval of this agenda ([T11/01-267v0](#)) John Scheible

added: Implicit Fabric Logout - Jim Coomes ([T11/01-288v0](#))

added: regarding FARP - Ken Hirata

added: Changes to CS-Control field - Jim Nelson

added: Unmanaged entry into FC-Domain - George Penokie

added: Clarification of Management IP address in RNID - Bob Nixon

added: Clarification of Boeing comment on Login by Class of Service (Boeing 007) - Steve Wilson (Boeing)

(Approved agenda later published as [T11/01-267v1](#))

4. Review of Old Action Items ([T11/01-267v0](#)) John Scheible

4.1 AL/2 Action Items – None

4.2 FS Action Items

4.2.1 Dave Peterson to provide text for obsoleting the FC-PH version numbers (01-041v0 as modified at the 2/6/01 meeting) to Jim Nelson to incorporate into FC-FS.

(OPENED 2/6/01) PARTIAL CARRYOVER (CLOSED by editor's discretion).

- 4.2.2 Bob Nixon to send email expressing intent to remove dedicated simplex from the standard unless interested parties appear (via email or in person) to defend it.
(OPENED 5/9/01) (CLOSED – Email to reflector 5/15/2001)
- 4.2.3 Rick Allison to trace all dependencies on R_T_TOV in this and other standards to assure no deleterious side effects.
(OPENED 5/9/01)(CLOSED [T11/01-268v0](#))
- 4.2.4 John Scheible to email Rick Allison about his action item to trace all dependencies on R_T_TOV in this and other standards to assure no deleterious side effects of making it adjustable.
(OPENED 5/9/01) (CLOSED - Done)
- 4.2.5 Jim Coomes will provide a rewrite of clause 17 to improve organization and define the X's and R's.
(OPENED 5/9/01) (CARRYOVER)
- 4.2.6 Bob Snively to rewrite 15.5.25-27 to eliminate inappropriate examples using "IU"
(OPENED 5/9/01) (CARRYOVER)
- 4.2.7 Bob Snively to propose structure for intermix to the reflector.
(OPENED 5/9/01) (CARRYOVER)
- 4.2.8 Mike Dorsett to rewrite clauses 17.6.7-8 to include class 6 support.
(OPENED 5/9/01) (CARRYOVER)
- 4.2.9 John Scheible will request assistance from Gary Stephens in resolving questions concerning Class 4.
(OPENED 5/9/01) (CLOSED - Done)
- 4.2.10 Bob Nixon to send email requesting any known uses of intermix of different classes of service within a single exchange.
(OPENED 5/9/01) (CLOSED - Email to reflector 5/15/2001)
- 4.2.11 Bob Nixon to send email requesting any known uses of different categories of information within a single sequence.
(OPENED 5/9/01) (CLOSED - Email to reflector 5/15/2001)
- 4.2.12 Bob Nixon to send email expressing intent to remove loopback mode from the standard for reasons documented in comment Brocade-068 unless interested parties appear (via email or in person) to defend it.
(OPENED 5/9/01) (CLOSED - Email to reflector 5/15/2001)
- 4.2.13 Bob Nixon to send email expressing intent to remove Annex A from the standard unless interested parties appear (via email or in person) to review it and resolve any comments against it.
(OPENED 5/9/01) (CLOSED - Email to reflector 5/15/2001)

- 4.2.14 John Scheible to send email requesting clarification from Neil Wanamaker on comment Akara-4.
(OPENED 5/10/01) (CLOSED - Done)
- 4.2.15 Bob Nixon to send email expressing intent to remove any specification of how FC-4s should use optional headers, including all of clause 19.
(OPENED 5/10/01) (CLOSED - Email to reflector 5/15/2001)
- 4.2.16 Bill Martin to provide a proposal for the login requirement for every ELS.
(OPENED 5/10/01) (CARRYOVER)
- 4.2.17 Bob Nixon to send email expressing intent to delete the LPC ELS unless interested parties appear (via email or in person) to defend it.
(OPENED 5/10/01) (CLOSED - Email to reflector 5/15/2001)
- 4.2.18 Bob Nixon to send email expressing intent to obsolete the SCN ELS unless interested parties appear (via email or in person) to defend it.
(OPENED 5/10/01) (CLOSED - Email to reflector 5/15/2001)
- 4.2.19 Bob Nixon to write up a revised statement replacing "shall" with "if you do this, this is how it will hurt", and review it with Tom Lindsey and Bill Ham.
(OPENED 5/10/01) (CARRYOVER)
- 4.2.20 George Penokie to provide a revised description of RTIN.
(OPENED 5/10/01) (DONE [T11/01-250v0](#))
- 4.2.21 Bob Nixon to provide a revised description of the management IP address parameters.
(OPENED 5/10/01) (CLOSED – presented this meeting)
- 4.2.22 George Penokie to provide a revised description of RNID.
(OPENED 5/10/01) (CLOSED - [T11/01-250v0](#))

5. Old AL-2/AL-3/FS Business (none)

6. Scheduled New Business AL-2/AL-3

6.1 AL-2 Amendment ([T11/01-287v0](#)) Bill Martin

The proposed amendment incorporates previously agreed fixes to errors in the logic defined by AL-2 concerning Setting of ARB Pend and use of Err INIT.

Bill prepared 36 change pages for AL-2, which he reviewed for us.

The revised document will be available for general review promptly, with the expectation of requesting a T11 letter ballot in two months.

7. **Unscheduled New Business AL-2/AL-3 business (none)**

8. **Scheduled New Business FS**

8.1 **RTIN and RNID rewrite ([T11/01-250v0](#)) George Penokie**

Change definition of Domain_ID to remove the underscore and not to require it to be exactly a byte. Add a reference to FC-SW-2.

The proposal was clarified that RTIN is intended to go only to a management server.

In structures that contain both a node name and a global identifier for the same thing, the global identifier will become reserved. If there is only a global identifier, it will be replaced by the node name followed by 8 bytes of reserved.

ACTION: Bob Nixon to provide references for the IP terms used in RNID/RTIN descriptions.

There was a long and productive discussion.

ACTION: George Penokie to update his RTIN/RNID proposal [T11/01-250v0](#) to incorporate changes discussed at this meeting.

8.2 **R_T_TOV action item ([T11/01-268v0](#)) Rick Allison**

Rick was unable to attend. Steve Wilson of Boeing presented in his behalf.

The references in other standards were listed but not individually evaluated for impact. It was agreed that the requested feature would be recast as a simple 100msec / 100 usec alternative.

The proposal included carrying the setting it via PLOGI/FLOGI. The value of this was not clear, and it was not certain it would work in a loop: Do you have to log in with your upstream neighbor, your downstream neighbor, or your favorite partner? It appears the login is intended as informative rather than critical information, so it is also not critical exactly who logs into whom in a loop.

It will be assumed that a port doing quick R_T_TOV will not speed negotiate, until a SN expert says it won't hurt. (Later email from Tom Lindsay on 6/7/01 and Bill Ham on 6/8/01 agreed this would NOT interfere with SN, therefore the restriction is unnecessary.)

meeting was suspended at 6:00 PM June 5, 2001

Meeting was resumed at 1:20 PM June 6, 2001

8.3 **FC-FS comment compilation ([T11/01-138v5](#)) Jim Nelson**

8.3.1 **Vixel-126**

Pending the RNID rewrite t11/01-250vx.

8.3.2 **Tivoli-475**

Accepted.

8.3.3 **Tivoli-474**

Accepted.

- 8.3.4 Tivoli-486**
Accepted. Text in question was reworded acceptably.
- 8.3.5 Tivoli-490**
Accepted. Text in question was reworded acceptably.
- 8.3.6 Qlogic-070**
Accepted.
- 8.3.7 Tivoli-497**
Accepted. Text in question was reworded acceptably.
- 8.3.8 Tivoli-505**
Accepted.
- 8.3.9 Tivoli-504**
Accepted. Text in question was removed, since it appeared to be redundant with the third paragraph above it.
- 8.3.10 Qlogic-071**
Rejected, either address supports the service.
- 8.3.11 GDIS-001**
Accepted.
- 8.3.12 Tivoli-539**
Accepted.
- 8.3.13 Qlogic-072**
Accepted, delete the sentence.
- 8.3.14 Tivoli-547**
Accepted.
- 8.3.15 Qlogic-073**
Accepted.
- 8.3.16 Seagate-09**
Accepted.
- 8.3.17 Qlogic-074**
Accepted.
- 8.3.18 Emulex-029**
Accepted.

8.3.19 Tivoli-590

Open pending Bill Martin action re login requirements

8.3.20 IBM-025

accepted

8.3.21 Qlogic-080

Rejected, a circuit is inherently bidirectional.

8.3.22 Qlogic-082

Accepted. Change "to" to "between" and change "3" to "4.5". In addition, does not apply to buffered class 1. The editor will remove all reference to buffered class 1

ACTION: Bob Nixon to send out an email notifying the community that buffered class 1 has been eliminated from FC-FS.

8.3.23 Akara-019

Accepted. A volunteer for writing the necessary text is needed.

ACTION: Bob Nixon to send an email to Mike Foster requesting text to satisfy Akara-019.

8.3.24 WG-003

George Penokie pointed out that in table 20 the binary codes do not match the hex values. Also, in the first line, the range "00-01" should be "00-03".

Accepted. the binary values will be removed and the range will be corrected.

8.3.25 WG-004

Bill Martin pointed out that in 15.5.43, "Protocol Logout request sequence" should be "Scan Remote Loop request sequence".

Accepted.

8.3.26 Class 4 related corrections

Gary Stephens proposed resolutions to the following Class 4 related comments. Unless otherwise noted, there was no discussion by the group present. They were all accepted by the group. Gary will upload the corrections as a document.

8.3.26.1 Tivoli-103

fix accepted by commenter.

8.3.26.2 Brocade-165

8.3.26.3 Brocade-169

8.3.26.4 Qlogic-105 and IBM-028

Proposal changed to completely exclude SOFi1

8.3.26.5 Boeing-005

8.3.26.6 IBM-029

8.3.26.7 Boeing-065 and Qlogic-121

8.3.26.8 Qlogic-132

8.3.26.9 Qlogic-133

8.3.26.10 Qlogic-137

8.3.27 Feature removal announcements and resolutions

8.3.27.1 Announcements were sent out of the intention to remove the following features. The group present resolved the intentions as listed below. Dropped functions will be listed in the introduction as obsolete

8.3.27.2 Dedicated simplex – dropped

8.3.27.3 different classes of service within a single exchange – retained
The removal announcement was misstated in a way that may have led potentially interested parties to not comment. Interest was expressed at this meeting.
As a result, Brocade 109 is rejected.

8.3.27.4 different categories of information within a single sequence - dropped

8.3.27.5 loopback mode - dropped

8.3.27.6 Annex A – dropped
It was pointed out that Annex F is the same type of material.
ACTION: Bob Nixon to send out an email notifying the community that Annex F has been eliminated from FC-FS.

8.3.27.7 specification of how FC-4s should use optional headers – dropped

8.3.27.8 LPC ELS - dropped

8.3.27.9 SCN ELS - dropped

9. Unscheduled new FS business

9.1 Implicit Fabric Logout ([T11/01-288v0](#)) - Jim Coomes

This was to have been a request from FC-MI, but was withdrawn before presentation.

9.2 FARP discrepancies with FS - Ken Hirata

This was actually discussed as the first item under "Scheduled New Business" so Ken could attend another meeting.

ACTION – Ken Hirata to upload his presentation on FARP Discrepancies as a document (later published as [T11/10-307v0](#))

RFC2625 and FC-FS differ about the values to be used in DF_CTL, R_CTL, and TYPE fields of FARP.

Bob Snively counterproposed that FARP is an FC-4 issue, and should be left to the FC-4 folks to define.

But the fields in question have FC-2 significance. Is it violated?

Yes, the DF-CTL value says there is a network header, but there isn't.

Good evidence was given that this is a cut and paste error from a data frame table to the FARP frame table.

ACTION: Bob Nixon to write a message to the reflector noting the FARP discrepancy and asking for implementer input, copy the authors of the RFC.

ACTION: John Scheible to allow time in the next meeting to discuss feedback on FARP header discrepancies.

The first paragraph in clause 15.5.30.1 says FARP is used only if there is not a directory server. RFC2625 requires it unconditionally. (VI requires FARP unconditionally in one place and later eases the requirement). The group agreed the conditions limiting use of FARP should be eliminated from FS.

9.3 Changes to CS-Control field - Jim Nelson

Jim requested that in classes 2 and 3, the currently reserved bits carry the DSCP value from diffserve (RFC 2474/2475). It is expected that there will be a presentation at the QOS workgroup tomorrow. A minor modification to the proposal was accepted, that if the bits were not so used (as indicated by a flag bit already proposed), they would remain reserved. There was no strong objection to this, but it will be deferred until the next meeting, pending some additional clarity from the QOS study group.

9.4 Unmanaged entry into FC-Domain - George Penokie

not presented.

9.5 Clarification of Management IP address in RNID - Bob Nixon

There were actually two proposals: a clarification to existing text and an enhancement to allow for management protocols other than SNMP over UDP. The clarification was to qualify the RNID response parameters for IP Version, UDP Number, and IP address to all refer to a management entity. The enhancement was to split the IP version field into 2 one-byte fields, one to remain the IP version and the other to identify management protocol combinations. Done carefully, this would include existing implementations as a subset.

The following changes to the proposal were requested:

- Add RFC references for the IP protocols referenced here.
- Clearly distinguish "Management Entity" and "Management Protocol" from the GS concept of "Management Server". At least define the terms, and alter them if practical.

Both proposals were accepted with the requested changes.

ACTION: Bob Nixon to modify the proposal for Clarification of Management IP Address as requested at 6/6/01 meeting and provide the text to George Penokie to incorporate into his RNID proposal.

9.6 Clarification of Boeing comment on Login by Class of Service (Boeing 006 and 007) - Steve Wilson

The question concerned the reasoning behind the requirement on PLOGI to use lowest numbered class of service that was required (but not FLOGI).

PLOGI is end to end. If accepted, it means all intermediate switches have seen it and agree to support its class and all higher numbered classes. Motivation was that lower number classes are harder to support, so a switch could be expected to support all higher classes as well as the class requested. This seems to break down for classes 4 and 6, which are higher numbered than 3 but are much more demanding of the switches.

FLOGI doesn't use this strategy because only the adjacent switch sees it. There is nothing "intermediate".

It was observed that the class validity bits in FLOGI may represent only the local switch, not the whole fabric. Likewise, the class validity bits in PLOGI represent only the peer device, not the intervening fabric.

There is remnant text in 17.3.3 that suggests a required order to the class of service used in a series of retries of FLOGI. This text will be removed.

ACTION: Jim Coomes to include corrections to 17.3.3 concerning FLOGI class of service in his rewrite of clause 17.

There was a good deal of discussion of removing the class restrictions from PLOGI as well, relying on the validity bits to determine the classes supported by the peer and tolerating a later failure if the fabric internally does not support a class that the end points do. An implementation could pre-verify classes of interest by using them for ADISC or PDISC (or something else harmless) before the application tries them. This was accepted.

ACTION: Jim Coomes to include changes to remove PLOGI class of service restrictions in his rewrite of clause 17.

10. Review of AL-2/FS action items

10.1 AL/2 Action Items – None

10.2 FS Action Items

10.2.1 Jim Coomes will provide a rewrite of clause 17 to improve organization and define the X's and R's.

(OPENED 5/9/01) (CARRYOVER)

10.2.2 Bob Snively to rewrite 15.5.25-27 to eliminate inappropriate examples using "IU"

(OPENED 5/9/01) (CARRYOVER)

10.2.3 Bob Snively to propose structure for Intermix to the reflector.

(OPENED 5/9/01) (CARRYOVER)

10.2.4 ACTION Mike Dorsett to rewrite clauses 17.6.7-8 to include class 6 support.

(OPENED 5/9/01) (CARRYOVER)

- 10.2.5 ACTION: Bill Martin to provide a proposal for the login requirement for every ELS.
(OPENED 5/10/01) (CARRYOVER)
- 10.2.6 ACTION: Bob Nixon to write up a revised statement replacing “shall” with “if you do this, this is how it will hurt”, and review it with Tom Lindsey and Bill Ham.
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- 10.2.7 Bob Nixon to provide references for the IP terms used in RNID/RTIN descriptions.
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- 10.2.8 George Penokie to update his RTIN/RNID proposal [T11/01-250v0](#) to incorporate changes discussed at this meeting.
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- 10.2.9 Bob Nixon to send out an email notifying the community that buffered class 1 has been eliminated from FC-FS.
(OPENED 6/6/01)
- 10.2.10 Bob Nixon to send an email to Mike Foster requesting text to satisfy Akara-019.
(OPENED 6/6/01)
- 10.2.11 Bob Nixon to send out an email notifying the community that Annex F has been eliminated from FC-FS.
(OPENED 6/6/01)
- 10.2.12 Ken Hirata to upload his presentation on FARP Discrepancies as a document
(OPENED 6/5/01)
- 10.2.13 Bob Nixon to write a message to the reflector noting the FARP discrepancy and asking for implementer input, copy the authors of the RFC
(OPENED 6/5/01)
- 10.2.14 John Scheible to allow time in the next meeting to discuss feedback on FARP header discrepancies.
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- 10.2.15 Bob Nixon to modify the proposal for Clarification of Management IP Address as requested at 6/6/01 meeting and provide the text to George Penokie to incorporate into his RNID proposal.
(OPENED 6/6/01)
- 10.2.16 Jim Coomes to include corrections to 17.3.3 concerning FLOGI class of service in his rewrite of clause 17.
(OPENED 6/6/01)
- 10.2.17 Jim Coomes to include changes to remove PLOGI class of service restrictions in his rewrite of clause 17
(OPENED 6/6/01)

11. Future meeting plans

8 hours will be requested in the T11 slot during the July T10 plenary meeting.
As much as possible at the August T11 plenary meeting.

12. Adjournment (FS WG)

The meeting was adjourned at 5:48 PM Wednesday, June 6, 2001.

13. Attendance

T11 FC-FS Working Group Meeting Attendance – 6/5/01-6/6/01

Company Represented	Last Name	First Name	Email
Adaptec	MacLean	Neil	neil_maclean@corp.adaptec.com
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Seagate	Suhler	Paul	Paul_A_Suhler@seagate.com
Smiths Industries	Schroeder	John	schroeder_john@si.com

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Sun Microsystems	Moe	Ken	kenneth.moe@sun.com
Systran	Fearday	Alan	afearday@systran.com
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