

Draft Minutes

T11.3 FC-FS-2 ad hoc work group meeting

6 February 2006 - 9 to 11 AM and 3:30 to 6 PM

Dana Point CA

version 1: corrected the year on document 074 in subclause 12.

The FC-FS-2 ad hoc work group of INCITS Technical Committee T11 Task Group T11.3 held a meeting at Dana Point CA on 6 February 2006, hosted by QLogic. Attendance was 19 people from 15 companies and is tabulated at the end of this document.

Minutes were taken by Bob Nixon (bob.nixon@emulex.com). Please report any corrections by email to the T11.3 reflector at T11_3@mail.T11.org.

1 Opening remarks and introductions

Chairperson Bill Martin opened the meeting Monday, 6 February 2006 at 9:02 AM. He thanked our host company, QLogic, and led a round of introductions.

1.1 Review of Minutes

Minutes for the FC-FS-2 ad hoc work group meeting 5 December 2005 have been posted as T11/06-043v0.

Minutes for the FC-FS-2 ad hoc work group teleconference 19 January 2006 have been posted as T11/06-044v0.

It was moved by Bill Martin and seconded by Horst Truedstedt to accept T11/05-833v0 as the minutes of the FC-FS-2 ad hoc work group meeting on 5 December 2005 and to accept T11/06-044v0 as the minutes of the FC-FS-2 ad hoc work group teleconference on 19 January 2006. Approved unanimously.

2 Approval of Agenda

T11/06-079v0

An agenda for the FC-FS-2 ad hoc work group meeting 6 February 2006 has been posted as T11/06-079v0.

It was agreed to change the version of the Letter Ballot Comment Database for the IEEE tutorial from 0 to 1.

It was agreed to change the version of the Letter Ballot Comment Database for FC-FS-2 from 1 to 2.

It was moved by Bill Martin and seconded by Claudio DeSanti to accept T11/06-079v0 with the changes noted above as the agenda for this meeting. Approved unanimously.

3 Review of Old Action Items

AI 100 Bob Dugan to determine what is the documentation for the algorithm that generates the values in the 8B10B table in FC-FS-2 and generate a letter ballot comment to add that informative reference to FC-FS-2.
(Opened 8 August 2005) (CLOSED by email Dugan to Martin, 1 February 2006)

- AI 114 Bob Nixon to propose clarifications to the description of segmentation and reassembly (Emulex-4).
(Opened 3 October 2005) (Carryover)
- AI 117 FC-FS-2 chair to recommend to T11.3 to forward T11-05-639v1 to T11 for forwarding to ISO as T11's
response to the ISO editor's questions concerning FC-AL-2.
(Opened 5 December 2005) (CLOSED at T11.3 plenary 8 December 2005)
- AI 118 FC-FS-2 chair to remind the T11 chair to assure that FC-AL-2 Amendment 2 gets forwarded to
INCITS.
(Opened 5 December 2005) (CLOSED at T11 plenary 8 December 2005)
- AI 119 FC-FS-2 secretary to notify the T11 task group reflectors that the decision on obsoleting Class 4 has
been deferred to the February meeting of the FC-FS-2 work group and that those wishing clarification
on the complexities of making Class 4 acceptable for retention may contact Craig Carlson or Claudio
DeSanti
(Opened 5 December 2005) (CLOSED by email Nixon to T11.3 13 December 2005)
- AI 120 DeSanti/Nixon to publish T11/05-778v1 reflecting T11/05-778v0 and the agreements at the FC-FS-2
ad hoc work group meeting 5 December 2005.
(Opened 5 December 2005) (CLOSED by T11/05-778v1)
- AI 121 FC-FS-2 editor to incorporate T11/05-778v1 into FC-FS-2.
(Opened 5 December 2005) (CLOSED by T11/06-085v0)
- AI 122 FC-FS-2 chair to recommend to T11.3 to recommend to T11 to provide IEEE with the Fibre Channel
tutorial contained in 05-802v0.
(Opened 5 December 2005) (CLOSED at T11.3 plenary 8 December 2005)
- AI 123 FC-FS-2 editor to incorporate the the Fibre Channel tutorial contained in 05-802v0 into FC-FS-2.
(Opened 5 December 2005) (Carryover)
- AI 124 FC-FS-2 chair to set up a teleconference for Thursday January 19, 9 AM to 1 PM Pacific time.
(Opened 5 December 2005) (CLOSED)
- AI 125 FC-FS-2 secretary to send a reflector message requesting responses from anyone who objects to
obsoleting Rotary Groups.
(Opened 19 January 2006) (CLOSED by email Nixon to T11.3 23 January 2006)
- AI 126 Bill Martin to detail the necessary corrections to FC-LS table 182 and the sentence that references it.
(Opened 19 January 2006) (CLOSED by T11/06-078v0)
- AI 127 Bob Nixon to remind the FC-LS chair to take from FC-FS-2 the definitions of Multi-function device,
NAS Server, Storage Access device, Storage subsystem, Virtualization device, and Wavelength
Division multiplexer.
(Opened 19 January 2006) (CLOSED by email Nixon to Coomes 23 January 2006)

4 Meeting Policies

4.1 Attendance and Membership

Bill Martin stated that all persons present are considered members of this meeting and may vote on questions, limited to one vote per company present. Attendance at this meeting does not count toward attendance at the plenaries of T11 and its task groups (i.e., being here will not get you out or keep you out of membership jeopardy).

4.2 Patents

Bill Martin indicated that among the rules and policies under which this working group operates are the INCITS patent policies. He requested persons wishing to make statements or ask questions relevant to this policy not to do so at this work group meeting, but instead to do so at the T11.3 or T11 plenary meeting.

The INCITS patent policies are specified in subclause 8.4 of RD-1, "Policies and Guidelines", available at

http://www.incits.org/sd9_rev1c.htm#p8-4

4.3 Antitrust

Bill Martin indicated that among the rules and policies under which this working group operates are the INCITS Antitrust Guidelines. Any member of the meeting is responsible for objecting if he believes discussion in the meeting violates those guidelines. If such discussion is not immediately terminated, it is the chairperson's responsibility to terminate the meeting.

The INCITS Antitrust Guidelines are available at

<http://www.incits.org/inatrust.htm>

5 FC-AL-2 Business

No FC-AL-2 business was presented.

6 IEEE Tutorial

6.1 IEEE tutorial Letter Ballot Resolution

T11/06-054v1

6.1.1 Cisco-04

Accept. Add E_Ports and B_Ports and Switches but not Bridges. Change the list to an e.g. list introduced by "Fibre Channel entities", and change N_Ports to Nx_Ports and F_Ports to Fx_Ports.

6.1.2 Emulex-01

Accept. Specific changes were worked out at the meeting.

6.1.3 Brocade-02

Reject. Revisit when it is stable at IEEE. On a conference call with the commenter later in the meeting, it was agreed that the progress in IEEE should be monitored carefully, and that when the IAB is well-specified, that it be reconsidered promptly

6.1.4 Cisco-02

Accept partially. It was observed that other IEEE tutorials are written byte-wise, but the tables will explicitly indicate multi-byte fields, e.g., by an ellipsis row for the extended IEEE registered, explicit numbering for anything shorter.

6.1.5 Brocade-01

Accept.

6.1.6 Cisco-01

Accept.

6.1.7 Cisco-03

Accept in principle. The statement was generalized to "several protocols..."

6.1.8 Cisco-05

Accept.

6.1.9 Microsoft-01

Accept.

6.1.10 status of the proposed tutorial

All letter ballot comments have approved resolutions.

It was moved by Bill Martin and seconded by Jim Coomes to accept T11/06-054v2, incorporating T11/06-054v1 and the agreements at the FC-FS-2 ad hoc work group meeting 6 February 2006, as containing the resolution of all letter ballot comments against the IEEE tutorial, and to recommend to T11.3 to recommend to T11 to forward a new document, incorporating T11/05-802v1 and the comment resolutions contained in T11/06-054v2, to IEEE as the Fibre Channel OUI tutorial. Approved 11Y, 0N, 1A.

ACTION: Bob Nixon to publish a new document, incorporating T11/05-802v1 and the comment resolutions contained in T11/06-054v2.

ACTION: Bill Martin to publish T11/06-054v2, incorporating T11/06-054v1 and the agreements at the FC-FS-2 ad hoc work group meeting 6 February 2006.

ACTION: FC-FS-2 chair to recommend to T11.3 to recommend to T11 to accept T11/06-054v2, incorporating T11/06-054v1 and the agreements at the FC-FS-2 ad hoc work group meeting 6 February 2006, as containing the resolution of all letter ballot comments against the IEEE tutorial, and to forward a new document, incorporating T11/05-802v1 and the comment resolutions contained in T11/06-054v2, to IEEE as the Fibre Channel OUI tutorial.

7 FC-FS-2 Business

7.1 Eliminate Class 4 from FC-FS-2

Nixon/Emulex

Email to the T11 reflectors on 5 October 2005 reported that those attending the FC-LS and FC-FS-2 ad hoc work group meetings on October 3, 2005 have recommended that Class 4 service be obsoleted and that specifications for Class 4 service and its supporting functions be removed from the FC-LS and FC-FS-2 draft standards.

Email to the T1.3 reflector on 13 December 2005 advised that retention of the specifications for Class 4 service depended on completion of certain onerous bodies of supporting specification in what was believed to be an unrealistically short time.

Since there have been no volunteers for the Herculean intellectual labors thought to be necessary, the FC-FS-2 work group meeting on 6 February 2006 has agreed to obsolete the specifications of Class 4 service.

It was moved by Bob Nixon and seconded by Claudio DeSanti to obsolete Class 4 service and remove its specification from FC-FS-2. Approved 10Y, 0N, 4A.

ACTION: Bob Nixon to inform the chair of FC-LS work group that the specifications for Class 4 service will be removed from FC-FS-2 and that the FC-LS work group is advised to do likewise.

ACTION: Bob Nixon to publish a new document for review, instructing the FC-FS-2 editor how to remove Class 4 service from FC-FS-2 (Editor-Late-002).

7.2 Eliminating Transmitter State Machine

T11/06-045v0

Nixon/Emulex

In an earlier meeting of this work group, the relevance of the transmitter state machine specified in FC-FS-2 was questioned. An earlier version of this presentation gave background that led to proposing elimination of the transmitter state machine specified in FC-FS-2. This presentation incorporates changes requested in work group review of the earlier proposal.

It was agreed to clarify the new introduction to clause 6. Wording was worked out.

It was agreed to strike the subclause (new 6.3) that explained there is not an FC-1 transmitter state machine.

T11/06-045v0 and the agreements at the FC-FS-2 ad hoc work group meeting 6 February 2006 were accepted as the resolution to letter ballot comment Sierra_Logic-037.

It was moved by Bob Nixon and seconded by Ralph Weber to accept T11/06-045v1, reflecting T11/06-045v0 and the agreements at the FC-FS-2 ad hoc work group meeting 6 February 2006, as resolution of letter ballot comment Sierra_Logic-037. Approved unanimously.

ACTION: Bob Nixon to publish T11/06-045v1 into FC-FS-2, reflecting T11/06-045v0 and the agreements at the FC-FS-2 ad hoc work group meeting 6 February 2006.

ACTION: FC-FS-2 editor to incorporate T11/06-045v1 into FC-FS-2, reflecting T11/06-045v0 and the agreements at the FC-FS-2 ad hoc work group meeting 6 February 2006, into FC-FS-2.

7.3 Additional Issues with version 0.90

T11/06-055v0

Nixon/Emulex

The issues raised in this report were accepted for consideration as letter ballot comments.

It was moved by Bill Martin and seconded by Bob Nixon to incorporate T11/06-055v0 into the FC-FS-2 letter ballot comment database. Approved unanimously.

ACTION: Bill Martin to incorporate the issues raised in T11/06-055v0 into the FC-FS-2 letter ballot comment database.

7.4 Modification for Table 182

T11/06-078v0

Martin/Sierra Logic

It was agreed that the table number should be an Annex number. The editor will correct it.

It was agreed to change link failure counts to Link Failure Counters in the subclause header and the introduction to the table 182.

T11/06-078v0 and the agreements at the FC-FS-2 ad hoc work group meeting 6 February 2006 were accepted as the resolution to letter ballot comment FC-LS-Late-002.

It was moved by Bill Martin and seconded by Horst Truedstedt to accept T11/06-078v1, reflecting T11/06-078v0 and the agreements at the FC-FS-2 ad hoc work group meeting 6 February 2006, as resolution of letter ballot comment FC-LS-Late-002. Approved unanimously.

ACTION: Bill Martin to publish T11/06-078v1, reflecting T11/06-078v0 and the agreements at the FC-FS-2 ad hoc work group meeting 6 February 2006.

ACTION: FC-FS-2 editor to incorporate T11/06-078v1, reflecting T11/06-078v0 and the agreements at the FC-FS-2 ad hoc work group meeting 6 February 2006, into FC-FS-2.

At 11:00 AM, the meeting was recessed until 3:30 PM.

7.5 Obsoleting the RSS ELS

T11/06-074v1

Nixon/Emulex

This proposal was accepted earlier by the FC-LS work group, but it requires minor changes to FC-FS-2 for completeness. This was accepted (see comment Emulex-025).

7.6 FC-FS-2 Letter Ballot Comments

T11/06-004v2

Martin/Sierra Logic

7.6.1 Emulex-025

Accepted. See 06-074v1.

7.6.2 Emulex-004

Open. No proposed resolution was provided.

7.6.3 Emulex-Late-003

Accepted. See resolution at Sierra-Logic-013.

7.6.4 Sierra-Logic-013

Accept.

7.6.5 Agilent-008

Accept. Sierra-Logic-013.

7.6.6 Sierra-Logic-043

Accepted in principle. Class 4 is obsoleted. See Editor-Late-002. But FC-SW-x needs to retain a fabric internal version of VC_RDY. FC-FC-2 should retain its definition of VC_RDY but reference FC-SW-4 for its description.

7.6.7 Editor-Late-002

Open. See AI-132

7.6.8 Emulex-Late-009

Accept.

7.6.9 Cisco-005

Accept. A response was captured during discussion.

7.6.10 Emulex-020

Open. See AI-114.

7.6.11 Comments resolved at the conference call 19 January 2006

All were resolved as recommended in 06-004v2 unless noted below.

7.6.12 Emulex-Late-011

Accepted.

7.6.13 Emulex-Late-015

Accepted.

7.6.14 Cisco-009

Accepted. Remove the subclause defining Rotary Groups.

7.6.15 Emulex-Late-002

Accepted.

7.6.16 Sierra-Logic-36

Accepted in principle. The text at issue was removed by Sierra_Logic-37.

7.6.17 Sierra-Logic-53

Accepted.

7.6.18 Sierra-Logic-73

Rejected. The intent is to that the value never be used for any purpose.

7.6.19 Emulex-Late-012

Accept.

7.6.20 Emulex-Late-013

Accept.

7.6.21 Emulex-Late-014

Accept.

7.6.22 Emulex-Late-024

Accept.

7.6.23 Emulex-Late-023

Accept.

7.6.24 Emulex-Late-026

Accept.

7.6.25 Emulex-Late-027

Accept.

7.6.26 Emulex-Late-028

Accept.

7.6.27 Emulex-Late-029

Accept.

7.6.28 Emulex-Late-030

Accept.

7.6.29 Emulex-Late-006

Accept.

7.6.30 Emulex-Late-007

Accept.

7.6.31 Emulex-Late-008

Accept.

7.6.32 Emulex-Late-005

Accept.

7.6.33 Emulex-Late-004

Accept.

7.6.34 Emulex-Late-001

Accept.

7.6.35 Sierra-Logic-063

Accept.

7.6.36 letter ballot comment resolution status

All comments have been considered and resolved except for those that have been considered and are dependent on open action items.

8 Project Schedule

Milestone	Expected date
Final new technical input	Completed April 2005
Letter Ballot	Completed September 2005
INCITS First PR	May 2006

9 Meeting Schedule

9.1 Interim request

A teleconference will be held Tuesday March 14, noon to 2 PM PST.

ACTION: Bill Martin to set up an FC-FS-2 teleconference Tuesday March 14, noon to 2 PM PST.

9.2 Next Plenary Week

Request 4 hours at the T11 plenary week hosted by Brocade in Santa Fe NM, 3-6 April 2006.

10 Review of Action Items

AI 114 Bob Nixon to propose clarifications to the description of segmentation and reassembly (Emulex-4 and Emulex-020).
(Opened 3 October 2005) (Carryover)

- AI 123 FC-FS-2 editor to incorporate the the Fibre Channel tutorial contained in a new document based on 05-802v1 into FC-FS-2.
(Opened 5 December 2005) (Carryover)
- AI 128 Bob Nixon to publish a new document, incorporating T11/05-802v1 and the comment resolutions contained in T11/06-054v2.
(Opened 6 February 2006)
- AI 129 Bill Martin to publish T11/06-054v2, incorporating T11/06-054v1 and the agreements at the FC-FS-2 ad hoc work group meeting 6 February 2006.
(Opened 6 February 2006) (CLOSED by T11/06-054v2)
- AI 130 FC-FS-2 chair to recommend to T11.3 to recommend to T11 to accept T11/06-054v2, incorporating T11/06-054v1 and the agreements at the FC-FS-2 ad hoc work group meeting 6 February 2006, as containing the resolution of all letter ballot comments against the IEEE tutorial, and to forward a new document, incorporating T11/05-802v1 and the comment resolutions contained in T11/06-054v2, to IEEE as the Fibre Channel OUI tutorial.
(Opened 6 February 2006)
- AI 131 Bob Nixon to inform the chair of FC-LS work group that the specifications for Class 4 service will be removed from FC-FS-2 and that the FC-LS work group is advised to do likewise.
(Opened 6 February 2006) (CLOSED at FC-LS meeting 6 February 2006)
- AI 132 Bob Nixon to publish a new document for review, instructing the FC-FS-2 editor how to remove Class 4 service from FC-FS-2 (Editor-Late-002).
(Opened 6 February 2006)
- AI 133 Bob Nixon to publish T11/06-045v1 into FC-FS-2, reflecting T11/06-045v0 and the agreements at the FC-FS-2 ad hoc work group meeting 6 February 2006.
(Opened 6 February 2006) (CLOSED by T11/06-045v1)
- AI 134 FC-FS-2 editor to incorporate T11/06-045v1 into FC-FS-2, reflecting T11/06-045v0 and the agreements at the FC-FS-2 ad hoc work group meeting 6 February 2006, into FC-FS-2.
(Opened 6 February 2006)
- AI 135 Bill Martin to incorporate the issues raised in T11/06-055v0 into the FC-FS-2 letter ballot comment database.
(Opened 6 February 2006) (CLOSED by T11/06-004v3)
- AI 136 Bill Martin to publish T11/06-078v1, reflecting T11/06-078v0 and the agreements at the FC-FS-2 ad hoc work group meeting 6 February 2006.
(Opened 6 February 2006) (CLOSED by T11/06-078v1)
- AI 137 FC-FS-2 editor to incorporate T11/06-078v1, reflecting T11/06-078v0 and the agreements at the FC-FS-2 ad hoc work group meeting 6 February 2006, into FC-FS-2.
(Opened 6 February 2006)
- AI 138 Bill Martin to set up an FC-FS-2 teleconference Tuesday March 14 noon to 2 PM PST.
(Opened 6 February 2006) (CLOSED by online meeting calendar 7 February 2006)

11 Adjournment

It was moved by Bob Nixon and seconded by Bill Martin to adjourn. Approved unanimously.

The meeting was adjourned at 5.36 PM on 6 February 2006.

12 Status of Open Proposals

Document Title	Number	Disposition
Eliminating Transmitter State Machine	T11/05-777	Close. Replaced by T11/06-045.
IEEE OUI tutorials for SCSI, FC, & ATA	T11/05-802	Reopened by letter ballot comments. Close, replaced by T11/06-143v0
IEEE OUI tutorial for FC	T11/06-143	Close, recommended forwarding to IEEE.
IEEE tutorial Letter Ballot Resolution	T11/06-054	Close. Accepted T11/06-054v2.
Eliminating Transmitter State Machine	T11/06-045	Close. Accepted T11/06-045v1
Additional Issues with version 0.90	T11/06-055	Close. Accepted T11/06-055v0
Modification for Table 182	T11/06-078	Close. Accepted T11/06-078v1
Obsoleting the RSS ELS	T11/06-074	Close. Accepted T11/06-074v1
FC-FS-2 Letter Ballot Comments	T11/06-004	Open for further updates. Current version is T11/06-004v3

13 Attendance

Organization	Represe tative
AVAGO TECHNOLOGIES	Roy Elsbernd
CISCO SYSTEMS	Claudio DeSanti
EMULEX	Bob Nixon
EMULEX	Ken Hirata
ENDL TEXAS	Ralph Weber
IBM POUGHKEEPSIE	Robert Dugan
LSI LOGIC	David Weber
MCDATA	Scott Kipp
MCDATA	Joe Pelissier
NORTHROP GRUMMAN	James Nelson
PMC-SIERRA	Brett Clark
QLOGIC	Craig Carlson
SEAGATE	James Coomes
SIERRA LOGIC	William R. Martin
SOLUTION TECHNOLOGY	Robert Kembel
SUN MICROSYSTEMS	Matt Gaffney
SUN MICROSYSTEMS	Michael Roy
SUN MICROSYSTEMS	Vit Novak
TRUE FOCUS	Horst Truestedt