

## Draft Minutes

### T11.3 FC-FS-4 ad hoc work group regular meeting

### 05 February 2014 – 4:00 PM to 6:00 PM CDT

### New Orleans LA

The FC-FS-4 ad hoc work group of the Fibre Channel Protocol (T11.3) Task Group held a regular meeting at New Orleans, LA on 05 February 2014, hosted by FCIA. Attendance was 19 people from 15 organizations and is tabulated at the end of this document.

Minutes were taken by Patty Driever (IBM) (pgd@us.ibm.com). Please report any corrections by email to the T11.3 reflector at [T11\\_3@mail.T11.org](mailto:T11_3@mail.T11.org).

## 1 Opening remarks & Introductions

Chairperson Dave Peterson (Brocade) opened the regular meeting Wednesday, 05 February 2014 at 3:30 PM CDT. He thanked our host organization, FCIA, and led a round of introductions.

### 1.1 Attendance and Membership

The chair explained that attendance is recorded electronically at [www.t11.org/att](http://www.t11.org/att), and explained the procedure. 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).

The chair stated that all persons present are considered members of this meeting and may vote on questions, limited to one vote per company present. He advised that although T11 does not limit participation in the activities of its work groups to representatives of T11 member organizations, it requires nonmembers to identify themselves as such. Nonmembers that expect they may participate in the activities of T11 regularly were encouraged to become members.

### 1.2 Patents

The chair indicated that among the rules and policies under which this working group operates are the ANSI intellectual property policies as specified in pages 1-3 of [http://www.incits.org/pat\\_slides.pdf](http://www.incits.org/pat_slides.pdf). He displayed these pages without comment or explanation, and directed that questions about the policy should be referred to the questioner's legal counsel or the ANSI General Counsel.

### 1.3 Antitrust

The chair 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. As examples, there should never be discussion of the following topics at any INCITS or INCITS subgroup meeting:

- Any company's prices or pricing policies;
- Specific R&D, sales and marketing plans;
- Any company's confidential product, product development or production strategies;
- Whether certain suppliers or customers will be served;
- Prices paid to input sources; or
- Complaints about individual firms or other actions that might tend to hinder a competitor in any market.

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>

## 2 Approval of Agenda

An agenda for the FC-FS-4 ad hoc work group regular meeting 05 February 2014 has been posted as T11/14-028v0. Two agenda items were added.

Lou Ricci (EMC) moved and Roger Dickerson (Oracle) seconded to accept T11/14-028v0 as modified as the agenda for this regular meeting. Approved unanimously.

## 3 Review of Past Business

### 3.1 Review of Minutes

Minutes for the FC-FS-4 ad hoc work group regular meeting 04 December 2013 have been posted as T11/13-494v0. Lou Ricci (EMC) moved and Roger Dickerson (Oracle) seconded to accept T11/13-494v0 as the minutes of the FC-FS-4 ad hoc work group meeting on 04 December 2013. Approved unanimously.

### 3.2 Review of Old Action Items

- 1312-01 Editor to resolve Editor's notes in 13-113v1 (**CARRY**)
- 1312-02 Editor to incorporate editorial changes identified in 13-445v0 except for last two (**CARRY**)
- 1312-03 Howard Johnson (Brocade) and Dave Peterson (Brocade) to bring in proposal next meeting cycle on FEC error counters (**CARRY**)
- 1312-04 Scott Kipp (Brocade) to bring in revised/new definitions for 'link' and 'lane', along with examination of where these terms are used in other places in the standard to ensure the new definitions are consistent with these uses, or the language in the standard appropriately modified (**Added to today's agenda as unscheduled business – 14-003v0**)
- 1312-05 Anil Mehta to post 13-369v1 incorporating changes identified to 13-369v0 in December meeting (**COMPLETE – posted as 14-019v0**)
- 1312-06 Anil to send source of 13-369v1 to editor (Craig) (**COMPLETE**)
- 1312-07 Editor to incorporate changes identified in 13-369v1 (**COMPLETE**)

## 4 Old Business

## 5.0 Scheduled Business

### 5.1 FC-EE Analysis & Feedback (14-036v0) Butter (IBM)

Based on a review of Energy Efficient FC, a series of comments were submitted. EE-FC is supposed to be closely aligned with Energy Efficient Ethernet 802.3az and 802.3bj specs. Results of the review found 23 issues documented and posted to T11 website (latest as 14-010v1). 21 were identified as FC-FS-4 issues and 2 as 128GFC architecture text issues. Some of these require additional information, and some of that info is documented in this presentation, specifically info required to resolve issues IBM-23, IBM-18, IBM-21, and IBM-22.

**IBM-23:** how state machines are documented lacks clarity and precision needed. Adrian provided info on what 802.3az provides in this regard. Editor's response is agreement that such a section is needed and will take an **action item to bring in a proposal that includes such info in a way that makes sense in FC-FS-4**. However he doesn't want to duplicate state machine information in multiple places and formats, and would prefer to add additional content to the existing format.

**IBM-18:** Low Power Idle mode use case – Adrian can't make this case work going through the current state machine.

**Editor (Craig) agreed that state machine needs to be updated to cover this use case** – currently this is only referenced in text. Adrian provided a proposed resolution to the state machine diagram to resolve this.

**IBM-21:** FC-FS-4 lacks sufficient detail to support FC-EE at 128G. Adrian proposed changes to the LPI Receive state diagram RX\_FW state for 128G FC-EE. Craig indicated to add the requested state machine format may be too great a change for FC-FS, but he will take a look at it.

**IBM-18/IBM-21 :** Adding Fast Wake capability requires adding associated Link Layer services. 802.3bj does this via auto-negotiation and exchanging TLV messages. Adrian proposed new ELS Exchange Energy Efficient Parameters ELS with descriptors in TLV format. Craig had earlier submitted a proposal for an ELS to optionally exchange relevant values, or provide a means to change from default values, but there wasn't much thought that this was necessary. Craig will take an **action item to update the old proposal based on this request and bring it back in here for review (after which it should go to FC-LS-3 and/or FC-SW-6)**.

**IBM-22:** request for section 10.1 be updated to provide more clarity regarding Wake time negotiation. Craig suggested changing 'devices use' to 'devices may use', and otherwise had no objection to the proposed text.

### 5.2 Proposed Updates to Support FC-EE (14-010v1) Butter (IBM)

Dave reviewed the latest FC-FS-4 doc and discovered some editorial changes required.

Action Item: Editor to incorporate editorial changes identified in 13-445v0 (which does not include the last 2 items Dave identified, which are just place holders at this point).

### **5.3 Editor's response to FC-EE comments (14-058v0) Carlson(QLogic)**

Craig reviewed his answers to open comments on FC-FS-4 Rev0.3 13-113v1.

### **5.4 Questions on 128GFC and rapid synchronization (14-064v0) Thaler (Broadcom)**

Pat presented on some ambiguity/open questions she found in reviewing the RS-FEC rapid codeword synchronization for both 32G (128G in the title is a misnomer).

- 1) When scrambler bypass=TRUE, does this turn off both the 64B/66B and 256B/257B scramblers? This needs to be more clearly described.
- 2) Draft uses 'RS-FEC codeword', but never defines the term.
- 3) Pat pointed out issues with the FEC description in clause 5.4.2.

**Action Item: Editor accepts the proposal in principle and will add appropriate new comments to the 14-058v0 spreadsheet to track to resolution.**

## **6 Unscheduled Business**

### **6.1 Parallel Links in 128GFC (14-003v0) Kipp (Brocade)**

Scott presented on the use and definition of the term 'link' in FC specs, and what 'parallel link' means and needs to mean. For 128GFC he is proposing 'parallel link' refers to the collection of pairs of unidirectional fibers and their associated transmitters and receivers. Each individual pair is still a 'link'. However much discussion ensued over what the pair of fibers should be called vs the set of 8 fibers vs one pair of the 8 fibers operating independently. Also use of 'lane' vs 'link'. New definitions for 'link' and 'lane' were developed.

Scott Kipp (Brocade) made a motion to accept the revised definitions developed today as modified, seconded by Craig Carlson (QLogic). Motion passed by acclamation.

## **7 Project Schedule**

| <b>Milestone</b>     | <b>Expected Date</b> |
|----------------------|----------------------|
| Last technical input | April 2014           |
| T11 Letter Ballot    | June 2014            |
| Forward to INCITS    | TBD                  |

## **8 Review of Action Items**

### **Action Items Carried Forward:**

- 1312-01 Editor to resolve Editor's notes in 13-113v1 (**CARRY**)
- 1312-02 Editor to incorporate editorial changes identified in 13-445v0 except for last two (**CARRY**)
- 1312-03 Howard Johnson (Brocade) and Dave Peterson (Brocade) to bring in proposal next meeting cycle on FEC error counters (**CARRY**)

### **New Action Items:**

- 1402-01: Editor (Craig Carlson) to bring in a proposal that includes the type of information requested in comment IBM-23 provided in such a manner as makes sense in FC-FS-4.
- 1402-02: Editor (Craig Carlson) to update state machine to cover the Low Power Idle use case documented in comment IBM-18.
- 1402-03: Editor (Craig Carlson) to review the requested state machine format in comment IBM-21 for appropriateness to FC-FS-4.
- 1402-04: Editor (Craig Carlson) to update an older proposal for an ELS to optionally Exchange Energy Efficient Parameters and bring it back into FC-FS-4 meeting, in response to comments IBM-18 and IBM-21.
- 1402-05: Editor accepts the proposal 14-064v0 in principle and will add appropriate new comments to the 14-058v0 spreadsheet to track to resolution.
- 1402-06: Scott Kipp to update 14-003v0 with new definitions and post as 14-003v1.

1402-07: Editor (Craig Carlson) to incorporate 14-003v1.

## 9 Meeting Schedule

### 9.1 Next Plenary Week

Request 4 hours at the T11 plenary week hosted by FCIA in Scottsdale AZ, 31 March-03 April 2014.

## 10 Adjournment

Lou Ricci (EMC) moved and Craig Carlson (QLogic) seconded to adjourn. Approved unanimously.  
The regular meeting was adjourned at 5:58 PM CDT on 05 February 2014.

## 11 Attendance

| <b>Organization</b> | <b>Attendee</b>        |
|---------------------|------------------------|
| Broadcom            | Pat Thaler             |
| Brocade             | Scott Kipp             |
| Brocade             | David Peterson         |
| Brocade             | Steven L Wilson        |
| Cisco Systems       | Landon Noll            |
| EMC                 | Louis Ricci            |
| Emulex Corporation  | Gautam Shiroor         |
| FutureWei           | Alan Yoder             |
| Hewlett Packard Co. | Nadaraha Navaruparajah |
| IBM                 | Adrian Butter          |
| IBM                 | Patty Driever          |
| IBM                 | Roger Hathorn          |
| JDSU                | Jason Rusch            |
| LSI Corp.           | John Lohmeyer          |
| NETAPP              | Frederick Knight       |
| Oracle              | Roger Dickerson        |
| QLOGIC CORP.        | Craig W. Carlson       |
| Solution Technology | David Deming           |
| VMWARE              | Neil MacLean           |