

# Draft Minutes

## T11.3 FC-BB-6 ad hoc work group regular meeting

### 4 August 2010 - 9:00 AM to 5:30 PM CDT

### Chicago IL

The FC-BB-6 ad hoc work group of the Fibre Channel Protocol (T11.3) Task Group held a regular meeting at Chicago IL on 4 August 2010, hosted by FCIA and Chris Lyon. Attendance was 37 people from 24 organizations 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

### 1.1 Introductions

Chairperson Claudio DeSanti (Cisco) opened the regular meeting Wednesday, 4 August 2010 at 9:04 AM CDT. He thanked our hosts, FCIA and Chris Lyon, and led a round of introductions.

## 2 Meeting Policy

### 2.1 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.

Those responding are included in the attendance record. They were advised that by remaining in this meeting, they submit themselves and their organizations to INCITS policy for intellectual property, antitrust, and guest membership policy.

### 2.2 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.

### 2.3 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>

### **3 Administrivia**

#### **3.1 Approval of Agenda**

An agenda for the FC-BB-6 ad hoc work group regular meeting 4 August 2010 has been posted as T11/10-353v0.

Presentation "FCoE Path Potholes", T11/10-273, has been updated to v1.

Presentation "The Missing Piece", T11/10-330, has been updated to v1.

***Landon Noll (Cisco) moved and Bob Nixon (Emulex) seconded to accept T11/10-353v0 with the changes noted above as the agenda for this regular meeting. Approved by acclamation.***

#### **3.2 Review of Minutes**

Minutes for the FC-BB-6 ad hoc work group regular meeting 9 June 2010 have been posted as T11/10-250v0.

***Bob Nixon (Emulex) moved and Sandy Wilson (Fujitsu) seconded to accept T11/10-250v0 as the minutes of the FC-BB-6 ad hoc work group meeting on 9 June 2010. Approved by acclamation.***

### **4 Review of Old Action Items**

- 100609-1 Claudio DeSanti to publish a new document reflecting T11/10-019v3 amended as agreed at the FC-BB-6 ad hoc work group regular meeting 9 June 2010.  
(Completed by posting of T11/10-019v4)
- 100609-2 Claudio DeSanti to provide source for a new document reflecting T11/10-019v3 amended as agreed at the FC-BB-6 ad hoc work group regular meeting 9 June 2010 to FC-BB-6 editor.  
(Completed)
- 100609-3 FC-BB-6 editor to incorporate T11/10-019v3 amended as agreed at the FC-BB-6 ad hoc work group regular meeting 9 June 2010 into FC-BB-6.  
(Carry)

- 100609-4 Bob Nixon to coordinate with David Black to propose appropriate text for FC-BB-6 advising its readers that FC-GFPT and FC-PW are not usable at 16GFC.  
(Completed by posting of T11/10-313v0)
- 100609-5 SW to publish T11/10-220v1 reflecting T11/10-220v0 amended as agreed at the FC-BB-6 ad hoc work group regular meeting 9 June 2010.  
(Completed by posting of T11/10-220v1)
- 100609-6 FC-BB-6 ad hoc work group chair to request T11.3 to request T11 to forward the project proposal for FC-SW-6 (T11/10-220v1) to INCITS for further processing.  
(Completed. See minutes of T11.3 plenary meeting 10 June 2010, posted as T11/10-298v0)

## **5 Old Business**

### **5.1 VN\_Port WWPN to Fabric association                      Smith (EMC)                      T11/10-224v1**

The presenter introduced an issue that may arise in cases of Fabric reconfiguration where the assignment of VLANs to FCFs changes. In some such reconfigurations, the change makes established VN\_Port associations impossible to re-establish. He recommended an approach that improved likelihood of successful re-establishment.

There was enthusiastic discussion. Other alternatives were suggested.

### **5.2 FCoE Path Potholes    Carlson (QLogic)                      T11/10-273v1**

The presenter introduced an issue that may arise in cases of multihop configurations in which FCoE traffic is routed over lossy segments. The lossy segment may not be detectable from the end devices, but instead, unpredictable communication degradation would be experienced. It was pointed out that this routing should be prevented by ACLs in FIP-snooping bridges described in FC-BB-5, and FCoE would experience a loss of connectivity rather than degraded communication. In certain configurations, the FIP-snooping bridges may not be adjacent to the lossy link, and ACLs would not be automatically created.

There was enthusiastic discussion. Related issues were raised. A particularly pathological case is of two DCB switches connected by a link that is too long for the buffering capabilities of the switches. This link will be lossy even though the switches will not recognize it to be so.

The presenter desired that normative text be developed to assure routing of FCoE only through lossless (e.g., DCB) links, and to lose connectivity if this is not possible. He requested that the group consider what might be appropriate.

One approach to be further considered is requiring administrative installation of FCoE-blocking ACLs on all links that do not meet the requirements of FCoE.

## **6 Scheduled Business**

### **6.1 FC-BB-6: GFPT and PW require 8B/10B                      T11/10-313v0                      Black and Nixon**

The presentation proposed specific text to be added to FC-BB-6 to advise the reader that the GFPT and PW backbone protocols are specific to 8B/10B encoding, and therefore are not applicable to 16GFC.

***David Black (EMC) moved and Bob Nixon (Emulex) seconded to incorporate T11/10-313v0 into FC-BB-6. The motion passed by acclamation..***

**ACTION** FC-BB-6 editor to incorporate T11/10-313v0 amended as agreed at the FC-BB-6 ad hoc work group regular meeting 4 August 2010 into FC-BB-6.

**6.2 FC-BB-6: ASFC for the FC pseudowire** **T11/10-252v2** **Black (EMC)**

The presentation proposed specific text changes for FC-BB-6 to leverage an existing backbone flow control protocol to replace dependence on an alternate protocol for which the specification in IETF never materialized.

*David Black (EMC) moved and Bob Nixon (Emulex) seconded to incorporate T11/10-252v2 into FC-BB-6. The motion passed by acclamation.*

**ACTION** FC-BB-6 editor to incorporate T11/10-252v2 amended as agreed at the FC-BB-6 ad hoc work group regular meeting 4 August 2010 into FC-BB-6.

**6.3 The Missing Piece** **T11/10-339v1**  
**Hufferd (Hufferd Enterprises)**  
**and Ko (Huawei-Symantec)**

The presentation developed an approach to better meet the needs of what was identified as mid-range configurations. It is based on FCF-assisted VN2VN protocol, giving the additional advantage of an incremental transition from a purely VN2VN protocol to a pure FCF protocol. The presentation listed several perceived advantages of such an intermediate protocol. This includes centralized zoning.

There was enthusiastic discussion. Some of the counterpoints raised were:

- a) some did not see a gap from purely VN2VN protocol to a pure FCF protocol
- b) some felt additional variations of the protocol would increase the likelihood of interoperability difficulties
- c) some felt displacement of iSCSI should not be a driver for FCoE standards development
- d) some did not see FCFs as bottlenecks

The proposal allows concurrent VN2VN routing and FCF routing, but relies on the FCF only for certain generic servers (e.g., Name Server and Zone Server) and not routing. This minimal need was identified with the service iSNS provides to iSCSI, and with the (theoretical) ability in the FC standards to implement FC generic servers in other than FC switches.

A straw poll was taken on the question: ***Should the modality described in T11/10-339v1 continue to be pursued in this project? The response was 4 favoring, 17 opposed.***

**6.4 Spotting the Just-Right FDF** **T11/10-309v0** **Weber (ENDL Texas)**

The presentation pursued methodology for evaluating the “right” content to be specified for the FDF.

The presenter pointed out that the standard should specifically cover the case of an FDF that chooses to forward to an FCF a frame for which the FCF had delegated routing to the FDF.

**6.5 FC-BB-6 FDF Requirements** **T11/10-343v0** **Hathorn (IBM)**

The presentation posed a list of requirements for FDFs as perceived by three member companies. These companies previously drove the primary requirements list for FC-BB-5 FCoE.

Several possible topologies were introduced. The presenters expressed their initial opinion on a list of them that are desirable to support, and requested the group to plan on eventually reaching a group consensus on some such list.

The presenter was advised that some members considered it desirable, though perhaps not essential, that the FDF architecture be easily reconstructed in a native Fibre Channel environment.

## **6.6 FDF features**

**T11/10-346v0**

**Gai (Cisco)**

The presentation posed a list of possible features for FDFs.

Several possible topologies were introduced. The presenter expressed his initial opinion on whether each should be supported or prohibited in FC-BB-6, and requested if there was group consensus on them. Unusually, there appeared to be consensus on each, and even more unusually, the consensuses matched the presenter's opinions.

## **6.7 Virtual Domain**

**T11/10-345v0**

**Peterson (Brocade)**

The presentation elaborated on a proposal to use a subset of the FSPF protocol for FDF/FCF discovery.

It was established that the details of zoning distribution remained open for future work.

It was understood that FSPF was an interdomain protocol, and that it would need some redesign to use it among devices in the same domain, or between potentially multiple devices in each of multiple domains.

The proposed approach enables FDFs to autonomously discover its optimal routings.

## **6.8 VA\_Ports: FDF / Controlling FCF Protocols**

**T11/10-271v2**

**DeSanti (Cisco)**

This presentation elaborates on a way to initiate a domain that includes one or more FDFs. It adds resolutions to certain issues raised in review of its prior version. These resolutions include a means to provide a backup controlling FCF for a domain including one or more FDFs.

The presentation presumed only one FCF would act as Primary and only one FCF would act as Secondary to a domain at any one time. The secondary could act as an interdomain router for the domain, but could not allocate addresses and distribute zoning information. The presenter did not exclude that additional work might allow more flexible behavior, but warned it would trade off complexity for features of uncertain value.

It was pointed out that the current design may allow failure of a primary to lose undistributed Name Server changes that relate to devices still available via the secondary.

One of the new features of this revised approach is that a VN\_Port can move from one FDF to another in the same domain, and retain its N\_Port\_ID. (This is independent of the backup controlling FCF capability.)

## **7 Unscheduled Business**

It was agreed that the proposed changes in presentations

- a) FC-BB-6: GFPT and PW require 8B/10B (T11/10-313v0); and
- b) FC-BB-6: ASFC for the FC pseudowire (T11/10-252v2)

will be applied to FC-BB-6, but will not initiate an amendment to FC-BB-5.

## 8 Review of Action Items

- 100609-3 FC-BB-6 editor to incorporate T11/10-019v3 amended as agreed at the FC-BB-6 ad hoc work group regular meeting 9 June 2010 into FC-BB-6.  
(Carry)
- 100804-1 FC-BB-6 editor to incorporate T11/10-313v0 amended as agreed at the FC-BB-6 ad hoc work group regular meeting 4 August 2010 into FC-BB-6.
- 100804-2 FC-BB-6 editor to incorporate T11/10-252v2 amended as agreed at the FC-BB-6 ad hoc work group regular meeting 4 August 2010 into FC-BB-6.

## 9 Meeting Schedule

Request 8 hours at the T11 plenary week hosted by Microsoft and Brocade in Seattle WA, 18-22 October 2010.

## 10 Adjournment

***Sandy Wilson (Fujitsu) moved and Eric Smith (EMC) seconded to adjourn. Approved unanimously.***

The regular meeting was adjourned at 5:30 PM CDT on 4 August 2010.

## 11 Status of Open Proposals

Document Title	Number	Disposition	Author
Distributed FCF functionality	T11/10-028	Carry. Most recent version presented was T11/10-028v0	Gai (Cisco)
VN_Port to VN_Port Virtual Links	T11/10-037	Carry. Most recent version presented was T11/10-037v0	Peterson (Brocade)
Jet Assist for FCoE P2P N_Port_ID Selection	T11/10-119	Carry for further consideration. Most recent version presented was T11/10-119v0	Weber (ENDL Texas)
Harmonized (Direct Mode) Adapter Based Shortcut	T11/10-133	Carry for further development. Most recent version presented was T11/10-133v0.	Hufferd (Hufferd Ent.)
The sFCF	T11/10-131	Carry for further development. Most recent version presented was T11/10-131v0.	Hufferd (Hufferd Ent.)
FCoE Topologies	T11/10-130	Close. Replaced by T11/10-346. Most recent version presented was T11/10-130v0.	Gai (Cisco)
FCoE End-to-End Connection	T11/10-132	Close. Replaced by T11/10-339.. Most recent version presented was T11/10-132v1	Ko (Huawei Symantec)

Document Title	Number	Disposition	Author
ENode functionality	T11/10-232	Close. Advisory, not a proposal. Most recent version available was T11/10-232v0	Peterson (Brocade)
Single Domain FCoE Fabrics	T11/10-233	Close. Replaced by T11/10-345. Most recent version presented was T11/10-233v0	Peterson (Brocade)
ASFC for the FC pseudowire	T11/10-252	Close. Accepted version was T11/10-252v2	Black (EMC)
VA_Ports: FDF / Controlling FCF Protocols	T11/10-271	Carry for further development. Version presented was T11/10-271v2	DeSanti (Cisco)
VN_Port WWPN to Fabric association	T11/10-224	Carry for further development. Version presented was T11/10-224v1	Smith (EMC)
FCoE Path Potholes	T11/10-273	Close. Advisory, not a proposal. Most recent version available was T11/10-273v0	Carlson (QLogic)
Spotting the Just-Right FDF	T11/10-309	Close. Advisory, not a proposal. Version presented was T11/10-309v0	Weber (ENDL Texas)
GFPT and PW require 8B/10B	T11/10-313	Close. Accepted version was T11/10-313v0.	Black (EMC)
The Missing Piece	T11/10-339	Close, no followup was requested. Version presented was T11/10-339v1.	Hufferd (Hufferd Ent) and Ko (Huawei Symantec)
FC-BB-6 FDF Requirements	T11/10-343	Carry for further development. Version presented was T11/10-343v0.	Hathorn (IBM)
Virtual Domain	T11/10-345	Carry for further development. Version presented was T11/10-345v0.	Peterson (Brocade)
FDF features	T11/10-346	Close, accepted in principle. Accepted version was T11/10-346v0.	Gai (Cisco)

## 12 Attendance

Organization	Representative
BLADE NETWORK TECHNOLOGIES	Chetan Yaliwal
BROADCOM	Niranjan Vaidya
BROADCOM	Pat Thaler
BROCADE	David Peterson
BROCADE	Steven L. Wilson
CISCO	J Metz
CISCO	Joe Pelissier
CISCO SYSTEMS	Landon Noll
CISCO SYSTEMS	Silvano Gai
CISCO SYSTEMS, INC.	Claudio DeSanti
DELL, INC.	Glenn Virball
EMC	David Black
EMC	Erik Smith
EMC	Gary S. Robinson
EMULEX	Bob Nixon
EMULEX	William R. Martin
ENDL TEXAS	Ralph Weber
FORCE10 NETWORKS	T Sridhar
FUJITSU AMERICA, INC.	Sandy Wilson
HEWLETT-PACKARD COMPANY	Barry Maskas
HUAWEI SYMANTEC	Michael Ko
HUFFERD ENTERPRISES	John Hufferd
IBM	Louis Ricci
IBM	Roger Hathorn
IBM	Scott Carlson
INTEL CORPORATION	Prafulla Deuskar
JDSU	Jason Rusch
JUNIPER	Joseph White
MELLANOX TECHNOLOGIES	Diego Crupnicoff
NETAPP	Frederick Knight
ORACLE	Matt Gaffney
ORACLE	Michael Roy
QLOGIC CORP	Alan Spalding

<b>Organization</b>	<b>Representative</b>
QLOGIC CORP.	Craig W. Carlson
SOLUTION TECHNOLOGY	Robert Kembel
SYMANTEC	Roger Cummings
VMWARE	Lawrence Lamers