

**Draft Minutes of T11 Plenary Session #74**  
**April 6, 2006**  
**Inn & Spa at Loretto, Santa Fe, NM**

**1 Opening Remarks and Introductions**

The meeting was opened at 3:15 PM by Bob Snively of Brocade, T11 Chair.

Bill Martin of Sierra Logic served as Secretary.

Bob Snively as the meeting host thanked everyone for attending the meeting.

Bob stated that the deadline for the next T11 mailing would be 11:59 PM, April 20, 2006. Documents are placed in the mailing by posting them to the [www.t11.org](http://www.t11.org) website. Postings can be made by any member. Begin by using the "Docs" button, then using the "number document" button. After successfully filling out the registration form for the document, you will be supplied with the several means of uploading the document.

**1.1 Meeting guidelines**

The Chair stated that the meeting was operating under INCITS procedures, and called special attention to the ANSI patent policies and the INCITS antitrust policies. He called especial attention to sections 16 and 17 of the agenda.

**1.2 Electronic Attendance**

Instructions were provided by the Chair as to how to sign into the meeting using the electronic attendance program.

**1.3 Meeting Documents**

The Chair noted that meeting documents are obtainable from <ftp://ftp.t11.org/latest>.

**1.4 Self Introductions**

Bob Snively introduced the officers and then led a round of introductions.

**2 Approval of the Agenda**

The agenda was posted as T11/06-165v3.

It was moved by Bob Nixon of Emulex seconded by Horst Truedstedt of True Focus to approve the agenda as presented. The agenda was approved unanimously.

**3 Attendance and Membership**

**3.1 Gaining and Losing Voting Membership**

Information on how membership is gained, maintained, and lost in any INCITS Technical Committee can be found in <http://www.incits.org/rd2/main.htm>

**3.2 Changes in Representation Since Last Meeting**

**Representative changes:**

Avago Technologies: Randy Clark replaces Roy Elsbernd as Principal. There is no alternate.

PMC-Sierra: Roy Elsbernd replaces Brett Clark as Principal and Brett Clark replaces Neil Wanamaker as Alternate.

IBM: Robert Dugan replaces Ken Hallam as Principal and Scott Carlson replaces Robert Dugan as Alternate.

Symantec: Roger Reich is removed as alternate. Roger Cummings remains Principal with no Alternate.

**Membership changes:**

None.

**New Advisory Members:**

The following company became an advisory member as of March 31, 2006:

Quake Technology, Brad Booth Principal.

**3.3 New Voting Memberships**

The chair called for those organizations wishing to become voting members.

The following organization has met the pre-requisites for membership and became a voting member effective at this meeting:

Catalyst Enterprises with Jan Dedek as Principal and Bart Raudebaugh as Alternate

**3.4 Voting Members in Jeopardy for Non-Attendance**

All representatives of 3 member organizations were informed by document T11/06-162v0 that their organization was in jeopardy of losing its voting membership as the result of not attending the required number of committee meetings. Tim Beyers of Finisar was present at this meeting and so Finisar retains voting membership in this committee. AMCC and SPC lost their memberships effective at this meeting due to non-payment of fees.

**3.5 Voting Members in Jeopardy for not responding to letter ballots**

All representatives of 3 member organizations were informed by document T11/06-164v0 that their organization was in jeopardy of losing its voting membership as the result of not responding to the required number of letter ballots. Representatives of Agere and IBM subsequently participated in a letter ballot and so those organizations retain voting membership in this committee. AMCC lost their memberships effective at this meeting due to non-payment of fees.

**3.6 Membership in Jeopardy for fees**

All representatives of 3 member organizations were informed by email that their organization was in jeopardy of losing its membership as the result of not paying their INCITS fees. Broadcom contacted the chair and informed him that their fees had been paid, so Broadcom retains voting membership. Representatives of AMCC and SPC were not present to address this issue as a result they lost membership effective this meeting.

**3.7 T11 Voting and Advisory Membership for this meeting**

With 1 new voting member organizations, and 2 voting member organizations losing membership for not attending the required number of meetings and not paying fees, the voting membership of the committee has decreased by 1 member from 53 members to 52 members effective at this meeting.

The current voting membership of the committee is as follows:

<b>Company</b>	<b>P/A</b>	<b>Representative</b>
AGERE	P	Adam Healey
	A	Stephan Bedrosian
Avago	P	Randy Clark
BROADCOM	P	Ali Ghiasi
	A	Murali Rajagopal

<b>Company</b>	<b>P/A</b>	<b>Representative</b>
Brocade	P	Robert Snively
	A	Steven L. Wilson
Catalyst Enterprises	P	Jan Dedek
	A	Bart Raudebaugh
CIENA	P	Sashi Thiagarajan
	A	Chris Janz
Cisco Systems	P	Claudio DeSanti
	A	Fabio Maino
Corning	P	Doug Coleman
	A	Steven E. Swanson
Corrigent	P	Moran Roth
	A	Luis Aguirre-Torres
EMC	P	Gary S. Robinson
	A	David Black
Emulex	P	Bob Nixon
	A	Ken Hirata
ENDL Texas	P	Ralph Weber
	A	Dal Allan
eSilicon	P	Frank Barber
	A	Rakesh Chadha
FCI	P	Kevin Oursler
	A	David Sideck
Finisar	P	Mike Lawson
	A	Tim Beyers
FSI	P	Gary Stephens
Fujitsu	P	Mike Fitzpatrick
Hitachi America	P	Hidehisa Shitomi
	A	Nobuyuki Osaki
Hitachi DS	P	Eric Hibbard
Hitachi GST	P	Dan Colegrove
	A	Sally Castillo

<b>Company</b>	<b>P/A</b>	<b>Representative</b>
HP	P	Bill Ham
	A	Vinod Bhat
IBM	P	Robert Dugan
	A	Scott Carlson
Intel	P	Schelto Van Doorn
	A	Ramamurthy Krithivas
JDS Uniphase	P	Dave Lewis
	A	Mitch Ito
Lightsand	P	Alex Goral
	A	Ilya Alexandrovich
LSI Logic	P	Curtis Ridgeway
	A	Michael Jenkins
	A#	John Lohmeyer
Lucent	P	Richard DiPasquale
Marvell	P	Paul Wassenberg
	A	David Geddes
McData	P	Scott Kipp
	A	Larry Hofer
Microsoft	P	Robert Griswold
	A	Jeff Mastro
	A#	Jeffrey Goldner
Molex	P	Jay Neer
NORTEL	P	Graham Copley
Northrop Grumman	P	James Nelson
PacketLight	P	Eyal Gabay
	A	Koby Reshef
Phyworks	P	Brad Weaterton
	A	Matthew Cui
Picolight	P	Mike Dudek
	A	Mark Hillesheim
PMC-Sierra	P	Roy Elsbernd
	A	Brett Clark

<b>Company</b>	<b>P/A</b>	<b>Representative</b>
PrecisionFC	P	Gary Warden
	A	Jing Kwok
QLogic	P	Craig Carlson
	A	Skip Jones
Samsung	P	Hitoshi Okamura
	A	Kihong Kim
Seagate	P	James Coomes
	A	Allen Kramer
Sierra Logic	P	William R. Martin
	A	Narayan Ayalasomayajula
Smiths Aerospace	P	John Schroeder
	A	Todd Pepper
Solution Technology	P	Robert Kembel
	A	David Deming
ST	P	Gianfranco Scherini
	A	Massimo Pozzoni
Sun Microsystems	P	Vit Novak
	A	Steve Sletten
	A#	Matt Gaffney
Symantec	P	Roger Cummings
Texas Instruments	P	Rajeev Jain
	A	Stephen Hubbins
TrueFocus	P	Horst Truestedt
	A	Jeanne Truestedt
Tyco	P	Andrew Nowak
	A	Michael Fogg
Unisys	P	Wayne Gentry
Xyratex	P	Paul Levin
	A	Rich Ramos

The current advisory membership of the committee is as follows:

Company	P/A	Representative
Amphenol	P	Michael Wingard
	A	Ron Kleckowski
Crossroads Systems	P	John Tyndall
	A	Bill Moody
Data Device Corporation	P	Mike Glass
	A	Joe Gelish
Fujitsu Takamisawa	P	Bob Thornton
General Dynamics	P	Tim Luthens
	A	Kent Lindell
Liberty Intl.	P	Phil Zuniga
NeoScale	P	Landon Noll
	A	Robert Lockhart
Quake	P	Brad Booth

#### 4 Document Distribution

The documents presented at the meeting are available from the DOCS page of the T11 website, [www.t11.org](http://www.t11.org). Meeting documents were available from <ftp://ftp.t11.org/latest>

#### 5 Approval of Minutes - T11 Meeting #73, Dana Point, CA

The prior plenary meeting of Technical Committee T11 was #73 on February 9, 2006. The draft minutes of that meeting were posted as document T11/06-166v1.

T11 minutes review is done by reviewing the version that is posted on the web site and requesting corrections either before the subsequent meeting using email to the T11 secretary ([bill\\_martin@sierralogic.com](mailto:bill_martin@sierralogic.com)) or at the subsequent meeting in person.

No corrections were received via the reflector. No corrections were requested at this meeting.

It was moved by Horst Truedtedt of True Focus and seconded by Vit Novak of Sun to approve the minutes as written. The motion carried by acclamation.

#### 6 Review of old Action Items

- 05-047 Following representatives to provide IP letters for ISO FC-SW-3.  
Chair sent renewed reminders, T11/06-171v0, to:  
    Brocade: Completed per e-mail from Walter von Pattay, 2/21/06.  
        Robert Snively  
        Steven Wilson  
    Cisco Systems: (Carry Over)  
        Claudio DeSanti  
        Fabio Maino  
    McData: (Carry Over)  
        Scott Kipp  
        Larry Hofer
- 05-048 Following representatives to provide IP letters for ISO FC-FS.  
Chair sent renewed reminders, T11/06-170v0, to:  
    Cisco Systems: (Carry Over)  
        Claudio DeSanti  
        Fabio Maino  
    IBM: (Carry Over)  
        Robert Dugan  
        Scott Carlson  
    McData: (Carry Over)  
        Scott Kipp  
        Larry Hofer
- 05-050 Chair to send E-mail to Intel, Microsoft, Compaq/HP to solicit letters licensing publication of FC-VI, Oct. 5, 2005.
- Intel has proper person identified. Microsoft and HP letters were sent to T11 representatives. Additional letters were sent to INCITS representatives, Stanwyck, Higginbottom, and Wennblom. Microsoft has granted license (see T11/05-822v0).  
Phone calls were made March 30, 2006 to Intel and HP to encourage the next steps in the resolution process.
- 05-060 IR to convey results of October ISO votes to SC25.  
NWIP for SMS approved. See Action Item 06-009.  
Contribution and NWIP for FCSM approved. See T11/06-248v0. (Closed)
- 05-065 Chair to forward recommendation on access to withdrawn standards to INCITS.
- Sent T11/06-017v0 but no result yet. Reminder e-mail sent February 18, 2006.

- 05-068 IR to forward T11/05-639v1 to the ISO editor in response to the ISO editor's comments on FC-AL-2.  
Completed. See T11/06-256v0. (Closed)
- 05-080 Chair & IR to clarify procedure for handling of comments on ISO drafts  
  
See draft IR guidelines in plenary meeting disk. This will be completed after further review. Note especially the Visio diagram. (Closed)
- 05-083 IR to forward result of ISO vote on FC-AL-2 AMD-2 to SC25  
  
IR is in process of verifying status of document. (Carry Over)
- 05-084 Chair to get OID for T11.  
  
In process. INCITS has received its number and is in the final stages of preparing a policy and procedure. (Carry Over)
- 05-085 Chair to write a formal letter establishing liaison with CS1.  
Completed. See T11/06-259v0. (Closed)
- 06-001 TG Chairs to update Project Status Sheet.  
Ongoing
- 06-002 All editors, when posting drafts, upload zip of source to hidden directory  
Ongoing.
- 06-003 Schelto VanDoorn to update project status for FC-PI-2.  
e-mail, February 24, 2006 started this process, but still waiting on resolution of FC-PI-3 status. (Carry Over)
- 06-004 Chair to report the results of the 5-year Maintenance actions to INCITS.  
Completed. See T11/06-172v0. (Closed)
- 06-005 T11 Chair forward the project proposal for FC-SP-2 (T11/06-010v1) to INCITS for further processing.  
Completed. See T11/06-174v0. (Closed)
- 06-006 T11 Chair to forward the latest draft of FC-AE-ASM (T11/05-123v0), Project 1649-DT, to INCITS for further processing.  
Completed. See T11/06-178v0. (Closed)

- 06-007 T11 Chair to forward the latest draft of the IEEE tutorial for FC use of OUI (T11/06-143v0) to IEEE with the request to process it as the replacement for the current IEEE tutorial for FC use of OUI.  
Transmitted to Angela Weaver, IEEE. See T11/06-175v0.  
Contacted Angela Weaver by telephone. Document is in RAC review. (Carry Over)
- 06-008 T11 Chair to request INCITS to withdraw project 1739-DT (FC-DA-2) due to lack of progress and interest.  
Completed. See t11/06-176v0. (Closed)
- 06-009 Chair to perform a T11 letter ballot on recommending that US approve FCD ISO/IEC 24755, Information Technology - Storage Management (SMS).  
Completed. See T11/06-173v0 for ballot and T11/06-247v0 for forwarding letter. (Closed)
- 06-010 T11 Chair to recommend to INCITS to adopt the ISO/IEC Type-3 Technical Report ISO/IEC DTR 14165-117, Information technology - Fibre Channel - Part 117: Methodologies for Jitter and Signal Quality Technical Report (MJSQ) as an INCITS/ANSI technical report.  
Completed. See T11/06-230v0. (Closed)
- 06-011 T11 Chair to recommend to INCITS to adopt the ISO/IEC Standard 14165-414, Information technology - Fibre Channel - Part 414: Generic Services (FC-GS-4) as an INCITS/ANSI standard.  
Completed. See T11/06-221v0. (Closed)
- 06-012 Chair to produce customary liaison reports.  
Completed. See T11/06-199v0. (Closed)
- 06-013 Chair to clear attendance prior to April meeting.  
Process is automated by web-master. (Closed)

## **7 Review of T11 Project and Proposal Status**

### **7.1 Project Status Review**

The T11 Project status sheet was displayed. See [WWW.t11.org](http://WWW.t11.org), using the button "Projects".

### **7.2 INCITS Project Status Report (T11/06-206v0):**

The Chair presented the following report:

#### 1) Project proposals approved:

FC-SP-2

A possible comment was received from Sony indicating that this should be done with CS1. Chair to contact Sony representative to determine if this comment is necessary.

#### 2) Documents in approval process:

FC-BB-3

Project 1639, INCITS 414, Information technology - Fibre Channel Backbone - Generation 3 (FC-BB-3) Public Review closed on 11/21/05. There was one comment from Emulex. Comment is available as T11/05- 817v0. Comment was accepted and the updated document was provided to INCITS February 6, 2006 by letter T11/06-119v0. INCITS is awaiting BSR copy for Management Review. After management review, there will be an INCITS EB vote, then a request for ANSI approval via BSR-9 request, then publication.

FC-PI-2

ANSI editor is preparing the final BSR copy of the draft. After that, it will go through a management review, an INCITS 30-day letter ballot, and then the final paperwork will be submitted to ANSI. Publication is expected in June 2006.

FC-AL-2 Amendment 2

The public review ended February 20, 2006 with no comments received. Queries from the ANSI editor were received and resolved. Final approval is expected in the INCITS meetings the week of April 25. ANSI then approves it for final publication.

FC-AE-RDMA

Project 1651, INCITS/TR-40, Information technology - Fibre Channel Avionics Environment - SCSI-3 Remote Direct Memory Access (FC-AERDMA) The management review was sent to the INCITS SDB Liaison for recommendation in document in050937 at: <http://www.incits.org/archive/2005/in050937/in050937.htm>. Seven-day review by INCITS SDB closed March 31, 2006. If there are no objections, INCITS 30-day LB will be conducted. Request for ANSI publication follows if approved.

FC-SW-4

Public review closed March 13, 2006 on Project 1674-D, INCITS 418, Information technology - Switch Fabric - Generation 4 (FC-SW-4). No comments were received. A technical problem was identified by T11.3 and a new revision will be forwarded to INCITS for second public review. Aside from that, INCITS is awaiting a BSR copy for Management Review. After the second letter ballot, there will be a new management review, an INCITS EB vote, a request for ANSI approval via BSR-9 request, then publication.

FC-AE-ASM

Project 1649-DT, INCITS/TR-41, Information technology - Fibre Channel -Avionics Environment - Anonymous Subscriber Messaging (ASM) (FC-AEASM) is awaiting BSR copy for Management Review. After management review, an INCITS EB vote will be held, then a request for ANSI approval via BSR-9 request will be made, and the document will be published.

3) Projects withdrawn:

FC-DA-2

Withdrawal of project 1739-DT approved by INCITS Executive Board on March 23, 2006. ANSI notified of withdrawn status. We have to withdraw it from ISO as well.

FC-FG

Withdrawal of project 958-D, INCITS 289:1996 approved by ANSI, March 30, 2006.

4) Documents published

None

5) Documents in liaison

INCITS project 1789-L, INCITS 413, RapidIO Interconnect Specification Project 1789-L, INCITS 413, Information technology - RapidIOTM Interconnect Specification (version 1.3) was created to develop an American National Standards using the INCITS Fast Track process. The public review closed on 11/21/05 and no comments were received. A second public review was requested for 4/7/06 - 5/22/06.

6) Documents in maintenance.

Ten documents with maintenance recommendations for 2006. See <http://www.incits.org/archive/2006/in060114/in060114.htm>. Public Review period is 3/10/06 to 4/24/06. INCITS Letter Ballot and BSR-9 request for ANSI approval will follow upon close of PR period.

7) Other standard status

INCITS project 1787, INCITS 411, iSCSI Management API (IMA)

A new draft was received and a second public review requested. The public review was completed March 13, 2006. A set of serious public review comments was received and were referred to SNIA for correction.

INCITS project 1788, INCITS 412, SNIA Multipath Management API

A new draft was received and a second public review requested. The public review was completed March 13, 2006. Editorial comments were referred to SNIA for correction. INCITS is now awaiting a BSR copy for Management Review. After management review, there will be an INCITS EB vote, then a request for ANSI approval via BSR-9 request, then publication.

8) International Processing

New published standards:

None

Completed action items:

US voted to approve ISO/IEC FCD 24755, Information Technology - Storage management (SMS) on March 28, 2006.

**8 Results of Non-ISO Letter Ballots**

There were no Non-ISO letter ballots.

**9 Old Business**

**9.1 Virtual Interface Specifications**

See Action Item 05-050.

**9.2 Approve new name "INCITS Fibre Channel (T11) Technical Committee"**

The group discussed possible name options. The name "INCITS Fibre Channel Technical Committee (FC-TC)". Schelto VanDorn of Intel moved and Gary Stephens of FSI seconded accepting this name. The motion passed unanimously

Claudio DeSanti of Cisco moved and David Black of EMC seconded to change the name to "INCITS Fibre Channel T11 Technical Committee (FC-TC)." The motion passed unanimously.

**9.3 T11 OID Value**

See AI 05-084. We have an OID value, but still need policies and procedures and policies for administering it.

**9.4 Consider mechanisms for indicating when new standards replace old.**

Claudio DeSanti is preparing a document to address this issue, and we will address this at the next plenary meeting.

## **10 Task Group T11.2 Physical Variants**

### **10.1 T11.2 Plenary Meeting Report**

Schelto van Doorn of Intel, T11.2 Chair, made the following report:

The present membership in T11.2 is 39

#### **Electrical WG – Mike Jenkins**

- Differential Group Delay Impact on Unscrambled 8GFC Electrical Links, (T11/06-246v0), David Stauffer, IBM Microelectronics
- Unified Electrical Proposal for 8.5Gig/10Gig, (T11/06-271v0), Ali Ghiasi, Broadcom
- 8GFC Delta Point Amplitude Spec Issues, (T11/06-304v0), Mike Jenkins, LSI Logic

#### **Optical WG – Tom Lindsay**

- Structured Optical Cabling in the Data Center/SAN, 06-258v0, Doug Coleman, Corning
- Summary, 8GFC Core Market, 06-249v1, Scott Kipp, McData
- Unified Electrical Proposal for 8.5Gig/10Gig, 06-271v0, Ali Ghiasi, Broadcom
- Proposal for 8GFC 850nm Serial Data Links, 06-319v0, Jim Tatum, AOC
- JDSU Proposal for 8G Multimode Optical Variants, 06-267v0, Dave Lewis, JDSU
- An 850nm 8G FC Limiting Proposal, 06-227v1, Mike Dudek, Picolight
- SFP+ Linear delta point Signal Quality Compliance, 06-210v2, Tom Lindsay, ClariPhy
- SFP+ Simulations and Recommendations, 06-239v1, Tom Lindsay, ClariPhy
- Proposed Specifications for 8GFC Linear SFP+, 06-290v0, Tom Lindsay, ClariPhy

Straw Polls:

- Should the T11.2 optical working group provide a solution for 8.5Gbps 850nm that achieves 300 meters on OM3 fiber with 1.5dB connector loss?
- Should the T11.2 optical working group include two variants for 850nm, one aimed at low cost, shorter reach objectives, and one for 300 meters on OM3 fiber? Result Yes
- Should all 8.5Gb, 850nm variants from straw poll 2 included in FC-PI-4 have electrically compatible delta point specifications (be able to implement a common host solution)? Result Yes

#### **.MSQS – Bill Ham**

There was major progress on several key areas:

- Creating a practically usable causality test for S-Parameter files
- Completing the list of recommendations/requirements for effective and transportable simulations.
- Addressing the issues with composite S-parameter files created from multiple independent S-parameter files that have different properties in their details
- Further refining the role and responsibilities of the model supplier with respect to changes required in files required to eliminate quality test failures.
- Identification of staged simulations where two tools are used in series  
– major benefits in some cases

- Adding more entries to the hypothetical transmitter device simulations results table – this work is effectively complete and the results are quite interesting
- Work on the core MSQS topics is expected to begin next meeting with an initial focus on establishing a complete link model to be used as the basis for developing budgeting methodologies.

### **FCSM-2 (Signal Modeling) - Dean Wallace**

- Reviewed modeling page and put together document on how to assemble the modeling page.
- Presentation comparing simulation results between ADS, HSPICE, Genesys using the Transmitter device model. Mike Fogg, Tyco.
- Presentation about modeling questioning whether you are getting what you think you are. There were discussions about model boundaries, de-embedding questions and how much should be included in the model. Mike Fogg (Tyco)
- Causality presentation. Discussed how you can determine and force causality on S parameter data using Hilbert Transform. Larry Barnes, Qlogic.

### **PI-3&4 Documents - Schelto van Doorn**

Content, status and structure of FC-PI-3 Document

- Schelto agreed to become the new editor
- Target for next draft 2 weeks prior to the next plenary. Target for stabilization and first T11.2 letter ballot at next T11.2 plenary

Content, status and structure of FC-PI-4 Document

- Motions made in T11.2 on behalf of Working Group

That FC-PI-4 will be a self contained document that contains all material addressing the topics in PI-2 that are needed + all variants that should be carried forward (except PI-3)

That the 4 GFC EDC variant presently in rev 0.00 of FC-PI-4 be removed.

That a 10km SM 8GFC variant be added to FC-PI-4.

That a new 8GFC interoperability point to be applied at backplane connectors be included in FC-PI-4.

That the optical Gamma specifications in 06-319v0 replace the existing baseline for the 8GFC low cost MM optical variant in the next draft of FC-PI-4.

That a delta point variant optimized for passive electrical cables be included in FC-PI-4 for use in 8GFC capable ports only.

That the 8 GFC optical Gamma specifications in 06-290v0 for the 300 meter MM optical variant be included as the baseline in the next draft of FC-PI-4.

That the 8 GFC electrical deltaR specifications in 06-290v0, with maximum differential pp voltage changed to 1200 mV, be included as the baseline linear specifications in the next draft of FC-PI-4.

That the return loss at the points deltaT and deltaR as specified in 06-271v0 be included as the baseline for 8GFC in the next draft of FC-PI-4

All motions passed unanimously in T11.2

### **10.2 Proposals for new projects**

There were no project proposal requests.

### **10.3 Other Actions**

None

#### 10.4 Other Items

None

### 11 Task Group T11.3 Interconnection Schemes

#### 11.1 T11.3 Plenary meeting Report

Craig Carlson of QLogic, T11.3 Chair, made the following report:

38 Members

Project Status

FC-AE-x – Reviewed AE-1553 - almost ready for letter ballot

FC-BaseT - Reviewed PMA Training, Scrambling

FC-BB-4 – Played Pool

FC-FS-2 – completed T11 LB comment resolution

FC-GS-5 – almost completed T11 LB comment resolution; reviewed FC-GS-6 project proposal

FC-IFR – Consolidated Routing Support, IFR Text From FS-2, Distributed IFR Services

FC-LS – continued T11 LB comment resolution

FC-SATA – Approved Information Units and FC-2 proposals

FC-SCM - Reviewed proposed outline, soliciting input

FC-SP – Planning to forward in June, waiting on IETF RFC Publication

FC-SW-5 – FFI (Annex D) changes, FDMI v2 Requirements, FC-SW-4 issues

#### 11.2 Proposals for new projects

##### 11.2.1 FC-GS-6 Project Proposal (T11/06-104v1)

Craig Carlson of QLogic moved and Steve Wilson of Brocade seconded to accept the Project Proposal for FC-GS-6 (T11/06-104v2) and forward to INCITS for further processing. The motion passed with 37 for, 0 opposed, 0 abstained, and 15 not voting. This met the 2/3 rule.

#### 11.3 Other Actions

##### 11.3.1 Approve response to INCITS editor's comments, FC-AE-RDMA (T11/06-149v0)

Craig Carlson of QLogic moved and Jim Nelson of Northrup Grumman seconded to approve the resolution of comments from the ANSI editor on FC-AE-RDMA (project 1651-DT) as documented in 06-149v0. The motion passed 36 for, 0 opposed, 0 abstained, and 16 not voting.

##### 11.3.2 Approve FC-SW-4 to second public review

Craig Carlson of QLogic moved and Steve Wilson of Brocade seconded to accept the changes documented in 06-329v0 and forward revision 7.8 of FC-SW-4 (06-296v0), Project 1674-D, to INCITS for a 2nd public review. A roll call vote was taken with the following results:

Company	Type	Representative	Vote
Agere	P	Adam Healey	y
Avago	P	Randy Clark	nv

<b>Company</b>	<b>Type</b>	<b>Representative</b>	<b>Vote</b>
Broadcom	P	Ali Ghiasi	y
Brocade Comms.	P	Robert Snively	y
Catalyst	P	Jan Dedek	nv
Ciena	P	Sashi Thiagarajan	y
Cisco	P	Claudio DeSanti	y
Corning	P	Doug Coleman	y
Corrigent	P	Moran Roth	y
EMC	P	Gary S. Robinson	y
Emulex	P	Bob Nixon	y
ENDL	P	Ralph Weber	y
eSilicon Corporation	P	Frank Barber	nv
FCI	P	Kevin Oursler	a
Finisar	A	Tim Beyers	nv
FSI	P	Gary Stephens	y
Fujitsu	P	Mike Fitzpatrick	y
Hewlett Packard	P	Bill Ham	y
Hitachi America	P	Hidehisa Shitomi	y
Hitachi Data Sys	P	Eric Hibbard	y
Hitachi GST	P	Dan Colegrove	y
IBM	A	Scott Carlson	y
Intel	P	Schelto van Doorn	y
JDS	P	Dave Lewis	y
LightSand	P	Alex Goral	nv
LSI Logic	P	Curtis Ridgeway	nv
Lucent	P	Richard Di Pasquale	y
Marvell	P	Paul Wassenberg	y
McData	P	Scott Kipp	y

Company	Type	Representative	Vote
Microsoft	P	Robert Griswold	y
Molex	P	Jay Neer	nv
Nortel	P	Graham Copley	y
Northrop Grumman	P	James Nelson	y
PacketLight	P	Eyal Gabay	y
Phyworks	P	Brad Weaterton	nv
Picolight	P	Mike Dudek	y
PMC-Sierra	P	Roy Elsbernd	y
PrecisionFC	P	Gary Warden	y
QLogic	P	Craig Carlson	y
Samsung	P	Hitoshi Okamura	nv
Seagate	P	James Coomes	y
Sierra-Logic	P	William R. Martin	y
Smiths Aerospace	P	John Schroeder	nv
Solution Tech.	P	Robert Kembel	y
ST	P	Gianfranco Scherini	nv
Sun	P	Vit Novak	y
Symantec	P	Roger Cummings	y
TI	P	Rajeev Jain	nv
TrueFocus	A	Jeanne Truestedt	y
Tyco	P	Andrew Nowak	y
Unisys	P	Wayne Gentry	nv
Xyratex	P	Paul Levin	nv

The motion passed 37 for, 0 opposed, 1 abstained, and 14 not voting. This passed meeting the two-thirds requirement.

### 11.3.3 Approve response to letter ballot comments, FC-FS-2(T11/06-085v1)

Craig Carlson of QLogic moved and Claudio DeSanti of Cisco Seconded To accept the responses to the T11 Letter Ballot comments contained in T11/06-004v6, and to forward revision 1.00 of FC-FS-2 (T11/06-085v2) project 1616-D to INCITS for further processing. The motion passed 37 for, 0 opposed, 0 abstained, and 15 not voting. This met the two-thirds rule.

#### **11.4 Other Items**

None.

#### **12 Joint T11.2/T11.3 Call for Issues**

##### **12.1 FC-BaseT involves both T11.2 and T11.3 considerations**

Claudio DeSanti of Cisco gave a the following report.

- Held a conference call on March 16
  - 7 people attended, representing 7 organizations
- Reviewed:
  - PMA Training for FC-BaseT
  - FC-BaseT Scrambling
- Agreed to use side-stream scrambling
- Met in Santa Fe on April 3rd
  - 11 people attended, representing 9 organizations
- Reviewed:
  - An Error Detecting Code for FC-BaseT
  - Proposed FC-BaseT Structure and Concepts
  - Proposed FC-BaseT PCS
  - Proposed FC-BaseT PMA and MDI
  - Proposed FC-BaseT Annex A
  - Proposed FC-BaseT Annex B
  - FC-BaseT Draft Proposal (for Channel Specification)
  - Power Backoff for FC-BaseT
  - Proposal for Optional TCM Mode in FC-BaseT Standard

##### **12.2 Auto-negotiation Selector Field for FC-BaseT**

The negotiation selector was assigned by IEEE. Work is in progress to put together the information required to set up the registry.

#### **13 Task Group T11.5 - Storage Network Management**

##### **13.1 T11.5 Plenary Meeting Report**

Roger Cummings of Symantec, made the following report:

- 37 people attended Plenary #22 on Thursday 4/06
- AMCC lost membership due to non-attendance, SPC lost membership because of non-payment of fees. Membership of T11.5 becomes 27 organizations
- Ad Hoc Reports
  - SM-HBA & SNPing Ad Hoc
    - 5 people attended from 5 organizations on 4/5 & 3/1 teleconference

- Comment resolution doc is 06-052v6 - 152 technical comments processed, 146 resolved
- Approved SNPing outline, reviewed SM-HBA-2 Project Proposal
- FAIS
  - 10 people attended from 9 organizations on 4/06&06
  - Also 5 people from 4 organizations met in Salt Lake City on 3/28&29
  - 1181 tech comments closed - 282 still open
- Management Ad Hoc
  - 4 people attended on 4/05
  - Reviewed LB Comment Resolution (06-019v1) & latest draft (06-047) for SM-ZSM project
  - Reviewed LB Comment Resolution (06-050v2) & latest draft (06-197v0) for SM-FCFGM project
  - Reviewed LB Comment Resolution (06-051v1) & latest draft(06-198v0) for SM-RSCNM project
  - Voted to forward all 6 documents above to T11.5
  - Reviewed initial SM-SPM project proposal
  - MIB resulting from SM-FAM published as RFC 4439
  - Publication imminent of MIB resulting from SM-NSM
  - T11.5 voted F19-O00-A00-DNV08 to “recommend that T11 accept 06-019v1 as the resolution of the T11 Letter Ballot comments on SM-ZSM, and forward the latest draft (06-047v1) to T11 in line with approved process (03-624v1)”
  - T11.5 voted F19-O00-A00-DNV08 to “recommend that T11 accept 06-050v2 (v1 as modified at the 4/5 Management Ad Hoc meeting) as the resolution of the T11 Letter Ballot comments on SM-FCFGM, and forward the latest draft (06-197v0) to T11 in line with approved process (03-624v1)”
  - T11.5 voted F19-O00-A00-DNV08 to “recommend that T11 accept 06-051v1 as the resolution of the T11 Letter Ballot comments on SM-FCFGM, and forward the latest draft (06-198v0) to IETF IMSS in line with approved process (03-624v1)”

## **13.2 Proposals for new projects**

### **13.2.1 SM-HBA-2 Project Proposal**

Work on this project proposal was deferred to the June meeting.

## **13.3 T11.5 Actions**

### **13.3.1 SM-ZSM, approve LB resolution and forward to IETF (2/3 meeting vote)**

Roger Cummings of Symantec moved and Bob Nixon of Emulex seconded that:

T11 accept 06-019v1 as the resolution of the T11 Letter Ballot comments on SM-ZSM, and forward the latest draft (06-047v1) to T11 in line with approved process (03-624v1);

T11 accept 06-050v2 (v1 as modified at the 4/5 Management Ad Hoc meeting) as the resolution of the T11 Letter Ballot comments on SM-FCFGM, and forward the latest draft (06-197v0) to T11 in line with approved process (03-624v1); and

T11 accept 06-051v1 as the resolution of the T11 Letter Ballot comments on SM-FCFGM, and forward the latest draft (06-198v0) to IETF IMSS in line with approved process (03-624v1).

There was no objection to considering all three as a single motion. David Black of EMC made a friendly amendment to the motion that FCFGM be changed to RSCNM in the second portion of the motion. The amendment

was accepted by the motioner and seconder, so the new motion was:

“T11 accept 06-019v1 as the resolution of the T11 Letter Ballot comments on SM-ZSM, and forward the latest draft (06-047v1) to T11 in line with approved process (03-624v1);

T11 accept 06-050v2 (v1 as modified at the 4/5 Management Ad Hoc meeting) as the resolution of the T11 Letter Ballot comments on SM-FCFGM, and forward the latest draft (06-197v0) to T11 in line with approved process (03-624v1); and

T11 accept 06-051v1 as the resolution of the T11 Letter Ballot comments on SM-RSCNM, and forward the latest draft (06-198v0) to IETF IMSS in line with approved process (03-624v1).”

The motion passed with 37 for, 0 opposed, 0 abstained, and 15 not voting.

**13.3.2 SM-RSCNM, approve LB resolution and forward to IETF (2/3 meeting vote)**

See above

**13.3.3 SM-FCFGM, approve LB resolution and forward to IETF (2/3 meeting vote)**

See above

**13.4 Other Items**

None

**14 Review of International Activity**

**14.1 ISO Status Report**

Gary Robinson of EMC presented the report contained in T11/06-252v1.

1. FC-SB-2 Fibre Channel Single Byte Commands, Published
2. FC-GS-4 Fibre Channel Generic Services-4 FDIS approved, moved to be published.
3. FC-AV Fibre Channel Audio-Visual Transport FDIS approved, in final editing with questions to Horst T.
4. FC-BB-2 Fibre Channel Back Bone Published
5. FC-100-TP Fibre Channel 100 Twisted Pair Published.
6. FC-FS Fibre Channel Framing and Signaling Interface FDIS out for ballot, still has open IPR issues (need LoA from patent holders) US voted YES
7. FC-PI Fibre Channel Physical Interface Published.
8. FC-SW-3 Fibre Channel Switch Fabric-3 New Work Item Proposal T11/04-234v1 sent to SC25, will need FCD text On hold because LoA IP letters need to be addressed to IEC.
9. FC-VI Fibre Channel Virtual Interface Architecture Mapping FDIS approved with comments. Need response to comments and final FDIS text and copyright approvals
10. 10GFC Fibre Channel 10 Gigabit Sent for publication
11. MJSQ Technical Report for Fibre Channel - Methodologies for Jitter and Signal Quality Specification, - Ready for publication
12. SM Technical Report for Fibre Channel – Signal Modeling, - Revised NWIP needs approval
13. FC-AL-2-1 Fibre Channel Arbitrated Loop-2, 1st Amendment to ISO/IEC 14165-122: Final text sent for publishing (I think)
14. FC-AL-2-2 Fibre Channel Arbitrated Loop-2, 2st Amendment to ISO/IEC 14165-122: Final text sent for publishing (I think)

15. RL Responsive Link, FCD text ready for ballot

16. SMI-S IT - Storage Management from SNIA. in FCD ballot, USA voted Approve

17. RIO Revision to RapidIO IS18372 Completed Fast Track in INCITS, Now is being edited for publishing by ANSI which caused a 2nd public review.

## 14.2 ISO Motions and other actions

### 14.2.1 Motion 1: Withdrawal of ISO FC-VI project

No motion was made; the matter has been deferred until the next meeting, pending agreement with the IP owners about making the VI Architecture documents available on the website.

### 14.2.2 Motion 2: Corrected NWIP for FCSM (T11/06-315v0)

Gary Robinson of EMC moved and Bob Nixon of Emulex seconded that T11 recommend that the NWIP Information Technology Fibre Channel Signal Modeling, Technical Report, (T11/06-315v0) be submitted as a US contribution to JTC1/SC25 and to approve the NWIP to be issued by SC25, answering the first 6 questions 'Yes' and naming Gary S. Robinson as project editor in question 4 and, question 7 as "Accelerated Timeframe" A roll call vote of U.S. Domiciled was taken with the following results:

Company	Type	Representative	Vote
Agere	P	Adam Healey	y
Avago	P	Randy Clark	nv
Broadcom	P	Ali Ghiasi	nv
Brocade Comms.	A	Steven L. Wilson	y
Catalyst	P	Jan Dedek	nv
Ciena	P	Sashi Thiagarajan	y
Cisco	P	Claudio DeSanti	y
Corning	P	Doug Coleman	y
EMC	P	Gary S. Robinson	y
Emulex	P	Bob Nixon	y
ENDL	P	Ralph Weber	y
eSilicon Corporation	P	Frank Barber	nv
FCI	P	Kevin Oursler	y
Finisar	A	Tim Beyers	nv
FSI	P	Gary Stephens	y
Fujitsu	P	Mike Fitzpatrick	y
Hewlett Packard	P	Bill Ham	y

<b>Company</b>	<b>Type</b>	<b>Representative</b>	<b>Vote</b>
Hitachi America	P	Hidehisa Shitomi	y
Hitachi Data Sys	P	Eric Hibbard	y
Hitachi GST	P	Dan Colegrove	y
IBM	A	Scott Carlson	y
Intel	P	Schelto van Doorn	y
JDS	P	Dave Lewis	nv
LightSand	P	Alex Goral	nv
LSI Logic	P	Curtis Ridgeway	nv
Lucent	P	Richard Di Pasquale	y
Marvell	P	Paul Wassenberg	y
McData	P	Scott Kipp	y
Microsoft	P	Robert Griswold	y
Molex	P	Jay Neer	y
Northrop Grumman	P	James Nelson	y
Picolight	P	Mike Dudek	y
PMC-Sierra	P	Roy Elsbernd	y
PrecisionFC	P	Gary Warden	y
QLogic	P	Craig Carlson	y
Seagate	P	James Coomes	y
Sierra-Logic	P	William R. Martin	y
Smiths Aerospace	P	John Schroeder	nv
Solution Tech.	P	Robert Kembel	y
ST	P	Gianfranco Scherini	nv
Sun	P	Vit Novak	y
Symantec	P	Roger Cummings	y
TI	P	Rajeev Jain	nv
TrueFocus	A	Jeanne Truededt	y

Company	Type	Representative	Vote
Tyco	P	Andrew Nowak	y
Unisys	P	Wayne Gentry	nv

The motion carried with 34 For, 0 Opposed, with 0 Abstaining and 12 Not Voting. This meets the two-thirds rule.

#### **14.2.3 Action 1: Provide appropriate patent declarations as requested.**

Bob Snively of Brocade noted that the form for submitting patent policies for ISO documents was posted with the agenda, and that this should help those companies needing to submit these statements.

#### **14.2.4 Action 2: Withdrawal of Liaison to DIS**

The chair noted that this project does not seem to exist. If there is no one who has a reason to maintain a liaison, this liaison will be dropped at the next plenary meeting.

#### **14.3 ISO Guide**

Bob Snively of Brocade presented the ISO Guide for International Representatives (T11/06-317v0).

Bob Snively indicated that members wanting to attend the upcoming ISO/IEC JTC1 SC25 WG4 meeting should submit their names for the T11 committee to approve.

### **15 T11 New Business & New Technical Items**

#### **15.1 Withdraw liaison project 54-L for lack of interest and progress**

DIS 7069, JTC1 project 97.13.9, Small Computer to Peripheral Bus Interface, Data Transfer Between Computer and Peripheral. (see 14.2.4 above)

#### **15.2 Nominations for 2006 INCITS awards**

Bob Snively pointed out that INCITS was soliciting inputs for INCITS 2006 awards. He provided the request from INCITS on the meeting disc.

### **16 Call for Patents**

In accordance with INCITS patent policies and guidelines, the chair made a call for patents that related to the standards being developed by this task group. Those companies wishing to file a patent declaration should send it to the chair of TC T11, with copies to Lynn Barra at INCITS (lbarra@itic.org).

The chair announced the availability of document T11/05-385v0, which provides helpful information about patent policies of INCITS and ANSI and guidelines to the support of those policies. In addition, T11/05-385v0 contains a summary of the responses to T11 calls for patents.

T11 is in the process of recovering other patent-related documents published before its electronic data-base was established.

Brocade provided a notice in T11/06-181v0 of a patent that pertains to work within T11. Bob Snively indicated that they would provide reasonable access to the patented technology.

### **17 Anti-Trust Guidelines**

The Chair noted that the INCITS Antitrust Guidelines (see <http://www.incits.org/inatrust.htm>) applied to this technical committee meeting. The Chair further noted that it was the responsibility of all attenders, and not just the Officers, to ensure that the Guidelines are followed, and to terminate discussions if they are not.

### **18 Liaison Reports**

#### **18.1 INCITS Report, activities other than T11 Status**

Bob Snively of Brocade, T11 Chair, presented the following report:

January 24-26 meeting of INCITS

- SPB has created an adhoc group to study the question of open participation. The action items for the SPB are
  - develop guidelines detailing which documents are open to the public and those that are protected with access restricted to members. The existing JTC 1 policy on document availability was recommended for reference.
  - develop a brief document detailing the INCITS IP policies (copyright and patent) for review by ITI legal counsel. Policy to be posted on each subgroup agenda
  - develop policies on reflectors and meeting attendance after the matter of access to documents had been resolved.
- Those of you with a presence on the SPB should lobby accordingly. Committee is Zemrowski, Barrett, Stanwyck, Neumann.

INCITS Officer's Symposium

- Scheduled for July 17, 18, 2006
  - INCITS official meetings will follow
  - Likely location is Metro D.C. area
  - TC and TG officer's are welcome

JTC-1 Activities

- SC-25 WG4 meeting, Berlin, Germany
  - Scheduled September 18-21, 2006
  - SC-25 Plenary September 22, 2006
  - Co-located with IEC 100th Anniversary over 3 week period.
  - We will be selecting delegates mid-year.
    - Do not be shy. We need more qualified delegates and you should attend at least one meeting before becoming HOD. You cannot go if you are not selected, but you need not go if you are selected.
- SC-25 new fiber optic specifications for homes
  - JTC 1 N 8096
- Security vocabulary and architecture
  - JTC 1 N 8051
- FC-MJSQ approved 12/0/6/10
  - JTC 1 N 8103
- SC25 WG3 has optical link definition wars
  - MPD, CPR, RPD

**18.2 TC T10**

John Lohmeyer of LSI Logic, Chair of T10, was not present, so it was left to the group to read the report from the meeting disc.(T11/06-240v0):

**18.3 FCIA**

Rich Ramos of Xyratex presented the following report:

Roadmap Discussions

Requirements for 8GFC are beginning to jell.  
Schedule, Cost and Distance and paramount  
Different variants need to be resolved

## Activities by the FCIA

Members meeting is 5PM-9PM Thursday evening  
Board of Directors is meeting on Friday  
SNW Activities  
Presented Fibre Channel: The Storage of Business at SNW to about 30 attendees  
FCIA Demo was a huge success  
    Showed tiered storage solutions and ILM actively working  
Show attendance was best in history - Over 50% End-Users  
Focus on promoting FC  
Position Ethernet in the SAN  
Position SAS in the back-end  
Public web site is being completely revamped  
Strategic Plan is currently being updated  
Marketing Plan is currently being updated  
Board Off-site in February was very successful  
Analysts Tour before summer  
Promoting Innovations  
FC-SP, FC-SCM, FC-BaseT, FC-SATA

## Collateral Generation

Multiple new presentations  
New basic FC education courses  
Needed quickly!  
White paper list  
FC in the SAN  
FC in the Back-end  
FC in the SMB Market

## Committees

Roadmap – Concall every other month  
Marketing – Concall every other week

## 18.4 IEEE

Schelto Van Dorn presented the information contained in T11/06-324v0:

- Resolved all comments against Draft 2.3
- Generating Draft 2.4 now
- Anticipating one more recirculation before Sponsor Ballot (shortly after July Plenary)

## Working on:

- Interference generator for receiver testing
  - Broadband noise vs. swept sinusoid
- Interference level for receiver testing
  - Correct interference level to correspond with Annex 69B channel recommendations
- 10GBASE-KR transmitter specifications need to be modified to guarantee interoperability

- Channel recommendations need to be modified to guarantee interoperability

IEEE 802.3 Auto-Negotiation Selector Field value request

The motion was made by Schelto van Doorn and seconded by Claudio DeSanti. Motion: IEEE 802.3 to allocate a single Auto-Negotiation Selector Field value for all appropriate INCITS Standards Motion Passed – T11 will administer the Technology Ability field for all appropriate INCITS standards.

## 18.5 IETF

David Black of EMC made a presentation of T11/06-320v0

IETF Working Groups:

- IP Storage Working Group (ipsWG)
  - FCIP, iFCP, iSCSI, iSNS and related protocols
  - Plus management MIBs for these protocols
- Internet and Management Support for Storage (IMSS) WG
  - IP over Fibre Channel and Fibre Channel MIBs
- Pseudo-wire emulation edge-to-edge (pwe3) WG
  - Link-layer protocol encapsulation, primarily over MPLS.
  - Fibre Channel over Pseudo-wire (joint w/FC-BB-4)
- David Black is chair of the IMSS and ips WGs.

Recent News

- RFCs Published
  - FCIP MIB, RFC 4404 [ipsWG]
  - FAM MIB, RFC 4439 [imssWG]
- Draft approved for RFC Publication
  - AES-GMAC for IPsec ESP (and AH) [individual draft]
  - This draft is referenced by FC-SP
- WG Last Call finished, Publication Requested
  - iSNS MIB [ipsWG]
- New IETF Area Directors (ADs)
  - Transport (for ipsWG): Lars Eggert
  - Management (for imssWG): Dan Romascanu

IP Storage MIB WG Status

- FCIP MIB published as RFC 4404
- SCSI MIB will be published soon
  - In final author review stage
- iSCSI MIB and iSCSI Authorization MIB
  - In the publication queue at the RFC Editor
- iSNS MIB draft completed WG Last Call
  - RFC Publication request submitted (this week)

Other IPS WG Work

- Working group last call completed:
  - iSER (iSCSI Extensions for RDMA)
  - DA (Datamover Architecture for iSCSI).
  - Waiting for approval of underlying RRDPP protocols
- iSCSI Implementors Guide
  - Capture experience from iSCSI implementations
  - Will be open for contributions well into 2006

- New iSCSI Draft -Implementation identification
  - New iSCSI key to report what is running at other end  
..... •Vendor, version, etc.
  - To become an official WG work item  
..... Concerns –potential for abuse, security

#### IMSS WG Status

- FAM MIB published as RFC 4439
  - NSM MIB should follow in near future
- Three MIBs nearing completion of Expert Review
  - FSPF, Routing Information, Virtual Fabrics MIBs
  - IETF Last Call should be next
- T11.5 completed 3 more MIBs this week
  - RSCN, Fabric Configuration Server, Zone Server MIBs
  - Will be handed off to IETF in near future
- FLIP (FAIS protocol) concept–draft-cummings-imss-flip-02.txt
  - Use of IETF netconf protocol appears promising

#### FC-SP Related Drafts

- IKEv2 parameter values for FC-SP
  - draft-maino-fcsp-02.txt, approved by IESG for RFC publication
  - IANA has allocated values for FC-SP
  - IKEv2 has been published as RFC 4306
- AES-GCM for IPsec ESP: RFC 4106
  - Combined encryption/integrity mode for AES
- AES-GMAC for IPsec ESP (and AH)
  - GMAC is the MAC (integrity) portion of GCM
  - Approved for RFC publication, will appear by mid-May
- Other news: Next secure hash for protocols -SHA-256
  - Response to MD5 and SHA-1 collisions
  - Migration will be gradual (next several years)

#### Fibre Channel over Pseudo-Wire

- draft-ietf-pwe3-fc-encap-01.txt
  - FC traffic encapsulation in packets for MPLS
- Protocol will be joint IETF/FC-BB-4 work
  - Analogous to FCIP development (with FC-BB-3)
- Liaison concern: Congestion control
  - Fibre Channel has no (TCP-class) congestion control
  - IETF requires that PWs specify congestion reaction  
..... •Ok to disconnect PW if acceptable service level not possible  
..... •Specification of TCP-class congestion control for the FC PW should be done  
in IETF as opposed to in T11

The next IETF meeting will be held during the week of July 9th in Montreal, Quebec, Canada

#### **18.6 Trusted Computing Group**

No report was given.

#### **18.7 TC CS1**

Eric Hibbard of Hitachi DS presented the following report contained in T11/06-273v0:

## Background

- U.S. TAG to ISO/IEC JTC1/SC 27 (IT U.S. TAG Security Techniques)
- 5th meeting held in Austin, TX on March 29 - 30, 2006
- Next CS1 meeting: August 15-16, 2006 in Gaithersburg, MD (NIST)
- Next SC 27 meeting: May 8 -17, 2006 in Madrid, Spain

## Recent Actions

- Established bi-directional liaisons between T11 & CS1
- CS1 prepared the US position on several SC 27 documents; combination of maintenance reviews and new drafts.
- CS1 ad hoc group continued work on domestic project proposal, now called: Minimum Security Guidelines for Protecting Personally Identifiable and Sensitive Information Stored on and Exchanged between Information Systems
- Storage Related:
  - FC-SP status was briefed; no issues
  - IEEE P1619 status was briefed; no issues
  - T10 SSC-3 Encryption was briefly discussed; additional information has been requested

### **18.8 IEEE/P1619**

Eric Hibbard of Hitachi DS presented the following report contained in T11/06-274v0:

## Background

- Also known as the Security in Storage Working Group (SISWG)
- An IEEE Information Assurance Activity
- Purpose: Defines international standards for cryptographic algorithms and methods for encrypting data before it is sent to the storage (disk or tape) device. This includes the algorithms and modes to create interoperable solutions.
- Last Meeting: February 23, 2006 (Conf. Call)
- Next Meeting: May 4, 2006 (Conf. Call)

## Recent Actions Recent Actions

- Current Projects:
  - 1619 Standard Architecture for Encrypted Shared Storage Media
  - 1619.1 Standard Architecture for Encrypted Variable Block Storage Media
- 1619 (Sector-based) Status:
  - D4 draft to be submitted to IEEE Editor ASAP
  - WG technical activities basically complete

- Preparations for IEEE ballot are underway
- Materials being circulated as possible amendments to 1619
- 1619.1 (Tape) Status:
  - CCM and GCM selected for encryption; includes authentication only mode
  - D5 draft circulated within WG

## **18.9 Other Liaison Reports**

None

## **19 Administrative Matters**

### **19.1 Officer appointments**

<i>T11 Chair:</i>	<i>Robert Snively</i>
<i>T11 International Representative:</i>	<i>Gary Robinson</i>
<i>T11 Secretary:</i>	<i>William Martin</i>
<i>T11 Vice-Chair:</i>	<i>Claudio DeSanti</i>
<i>T11.2 Chair:</i>	<i>Schelto van Doorn</i>
<i>T11.2 Secretary:</i>	<i>Bill Ham</i>
<i>T11.2 Vice-Chair:</i>	<i>Tom Palkert</i>
<i>T11.3 Chair:</i>	<i>Craig Carlson</i>
<i>T11.3 Secretary:</i>	<i>Bob Nixon</i>
<i>T11.3 Vice-Chair:</i>	<i>William Martin</i>
<i>T11.5 Chair:</i>	<i>Roger Cummings</i>
<i>T11.5 Clerk:</i>	<i>Ralph Weber</i>
<i>T11.5 Vice-Chair:</i>	<i>Scott Kipp</i>

### **19.2 T11 Information Technology**

#### **19.2.1 Website Status Information**

Roger Cummings, T11 webmaster, presented the information contained in T11/06-313v1.

### **19.3 Other Matters**

#### **19.3.1 Review of T10 and T11 document templates (review T10/05-085r4)**

No report. The Chair indicated that this activity would continue at a future meeting.

## **20 Future meeting schedule**

### **20.1 June Meeting Announcement**

The June T11 meetings will be held the week of June 12-16, in Anchorage, Alaska, hosted by Emulex.

For details, please see <http://www.t11.org> -> meetings -> notice.

### **20.2 June Meeting Map**

### **20.3 Authorization of Ad Hoc Meetings**

Authorization of Ad Hoc meetings is delegated to the appropriate TG, if any. There were no exceptions.

**20.4 Request for Hosts - Future meeting Schedule**

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*2006 Through 2008 T11 Meeting Schedules*

<i>2006 Dates</i>	<i>Proposed Locations Host</i>
-----	-----
<i>June 12-16</i>	<i>Anchorage, AK Emulex</i>
<i>August 7-11</i>	<i>Calgary, AB McData</i>
<i>October 2-6</i>	<i>Oklahoma City, OK Fujitsu</i>
<i>December 4-8</i>	<i>(Palm Springs Area)Broadcom</i>
<i>2007 Dates</i>	<i>Proposed Location Host</i>
-----	-----
<i>Feb 5-9</i>	<i>TBD QLogic</i>
<i>Apr 16-20</i>	<i>TBD Brocade</i>
<i>Jun 4-8</i>	<i>Minneapolis, MN True Focus</i>
<i>Aug 6-10</i>	<i>Seattle, WA Emulex</i>
<i>Oct 8-12</i>	<i>TBD FCIA</i>
<i>Dec 3-7</i>	<i>TBD TBD</i>
<i>Provisional 2008 Dates</i>	<i>Proposed Location Host</i>
-----	-----
<i>Feb 4-8</i>	
<i>Apr 7-11</i>	<i>TBD Brocade</i>
<i>Jun 2-6</i>	
<i>Aug 4-8</i>	
<i>Oct 6-10</i>	
<i>Dec 8-12</i>	

**20.5 Guidelines for Hosting**

This report has been posted to the website as T11/04-244v0. The room-night history was distributed with the meeting documents. The URL for the page is <http://www.t11.org/t11/meet.nsf/host>

**20.6 Approval of Meeting Venues**

There were no new meeting venues to approve.

**21 Review of action items**

- 05-047 Following representatives to provide IP letters for ISO FC-SW-3.  
Chair sent renewed reminders, T11/06-171v0, to:  
    Brocade: Completed per e-mail from Walter von Pattay, 2/21/06.  
        Robert Snively  
        Steven Wilson  
    Cisco Systems:  
        Claudio DeSanti  
        Fabio Maino  
    McData:  
        Scott Kipp  
        Larry Hofer
- 05-048 Following representatives to provide IP letters for ISO FC-FS.  
Chair sent renewed reminders, T11/06-170v0, to:  
    Cisco Systems:  
        Claudio DeSanti  
        Fabio Maino  
    IBM:  
        Robert Dugan  
        Scott Carlson  
    McData:  
        Scott Kipp  
        Larry Hofer
- 05-050 Chair to send E-mail to Intel, Microsoft, Compaq/HP to solicit letters licensing publication of FC-VI, Oct. 5, 2005.
- Intel has proper person identified. Microsoft and HP letters were sent to T11 representatives. Additional letters were sent to INCITS representatives, Stanwyck, Higginbottom, and Wennblom. Microsoft has granted license (see T11/05-822v0).  
Phone calls were made March 30, 2006 to Intel and HP to encourage the next steps in the resolution process.
- 05-065 Chair to forward recommendation on access to withdrawn standards to INCITS.
- Sent T11/06-017v0 but no result yet. Reminder e-mail sent February 18, 2006.
- 05-083 IR to forward result of ISO vote on FC-AL-2 AMD-2 to SC25
- IR is in process of verifying status of document.

- 05-084 Chair to get OID for T11.  
  
In process. INCITS has received its number and is in the final stages of preparing a policy and procedure.
- 06-001 TG Chairs to update Project Status Sheet.  
Ongoing
- 06-002 All editors, when posting drafts, upload zip of source to hidden directory  
Ongoing.
- 06-003 Schelto VanDoorn to update project status for FC-PI-2.  
Completed per e-mail, February 24, 2006.
- 06-007 T11 Chair to forward the latest draft of the IEEE tutorial for FC use of OUI (T11/06-143v0) to IEEE with the request to process it as the replacement for the current IEEE tutorial for FC use of OUI.  
  
Transmitted to Angela Weaver, IEEE. See T11/06-175v0.  
Contacted Angela Weaver by telephone. Document is in RAC review.
- 06-014 Chair to convey new name "INCITS Fibre Channel T11 Technical Committee (FC-TC)" to INCITS noting the implications if the name T11 is dropped.
- 06-015 Chair to forward FC-GS-6 Project Proposal (T11/06-104v1) to INCITS for further processing.
- 06-016 Chair to forward approved responses to INCITS editor's comments on FC-AE-RDMA (T11/06-149v0) to INCITS, INCITS Editor, and Steve Wilson of Boeing
- 06-017 Chair to forward FC-SW-4 rev 7.8 (T11/06-296v0) Project 161974-D to INCITS for second public review.
- 06-018 Chair to forward FC-FS-2 rev 1.0 (T11/06-085v2) Project 1619-D to INCITS for first public review.
- 06-019 IETF LIASON to forward SM-ZSM to IETF
- 06-020 IETF LIASON to forward SM-RSCNM to IETF
- 06-021 IETF LIASON to forward SM-FCFGM to IETF

06-022 IR to Forward a NWIP for FCSM to JTC1/SC25 and Recommend SC25 TAG Vote  
YES on SC25 Ballot

## **22 Adjournment**

It was moved by Jean Truestedt of True Focus and seconded by Scott Carlson of IBM to adjourn. The motion passed unanimously, and the meeting was adjourned at 5:42 PM.

## April 2006 T11 Attendance

<b>Company</b>	<b>Representative</b>
AGERE SYSTEMS	Adam Healey
AMPHENOL CORP.	Michael Wingard
AVAGO TECHNOLOGIES	Randy Clark
BROADCOM	Ali Ghiasi
BROCADE COMMUNICATIONS	Robert Snively
BROCADE COMMUNICATIONS	Steven L. Wilson
CATALYST ENTERPRISES, INC.	Jan dedek
CIENA CORPORATION	Sashi Thiagarajan
CISCO SYSTEMS, INC.	Claudio DeSanti
CORNING INC.	Doug Coleman
CORRIGENT SYSTEMS LTD.	Moran Roth
EMC	David Black
EMC	Gary S. Robinson
EMULEX	Bob Nixon
ENDL TEXAS	Ralph Weber
FCI ELECTRONICS	Kevin Oursler
FINISAR INC.	Tim Beyers
FSI CONSULTING SVCS	Gary Stephens
FUJITSU COMPUTER PRODUCTS OF AMERICA	Mike Fitzpatrick
HEWLETT PACKARD	Bill Ham
HITACHI AMERICA, LTD.	Hidehisa Shitomi
HITACHI DATA SYSTEMS	Eric Hibbard
HITACHI GLOBAL STORAGE TECHNOLOGIES	Dan Colegrove
IBM	Scott Carlson
IBM	Roger Hathorn
INTEL CORPORATION	Schelto Van Doorn
JDSU	Dave Lewis
LUCENT TECHNOLOGIES	Richard DiPasquale
MARVELL	Paul Wassenberg

<b>Company</b>	<b>Representative</b>
MCDATA	Scott Kipp
MICROSOFT CORPORATION	Robert Griswold
MOLEX	Jay Neer
NORTEL NETWORKS	Graham Copley
NORTHROP GRUMMAN	James Nelson
PACKETLIGHT	Eyal Gabay
PICOLIGHT	Mike Dudek
PMC-SIERRA	Roy Elsbernd
PRECISION FIBRE CHANNEL, LLC	Gary Warden
QLOGIC CORP.	Craig Carlson
SAMSUNG ELECTRONICS, STORAGE AND INTERFACE	Hitoshi Okamura
SEAGATE TECHNOLOGY	James Coomes
SIERRA LOGIC	William R. Martin
SOLUTION TECHNOLOGY	Robert Kembel
SUN MICROSYSTEMS	Matt Gaffney
SUN MICROSYSTEMS	Vit Novak
SYMANTEC	Roger Cummings
TEKTRONIX, INC.	Pavel Zivny
TRUE FOCUS, INC	Horst Truedstedt
TRUE FOCUS, INC	Jeanne Truedstedt
TYCO ELECTRONICS	Andrew Nowak
XYRATEX	Rich Ramos