



InterNational Committee for Information Technology Standards
(INCITS) Secretariat: Information Technology
Industry Council (ITI) 1101 K Street NW, Suite 610,
Washington, DC 20005

www.INCITS.org



T11-2019-00127-v000

**Draft Minutes
INCITS Fibre Channel (T11) Technical Committee
Regular Meeting #152
11 April 2019 – 1 PM to 4 PM EST
Boca Raton, FL**

1 Opening Remarks and Introductions

1.1 Introductory Remarks

TC T11 chair Steve Wilson (Broadcom) convened regular meeting #152 of the INCITS Fibre Channel (T11) Technical Committee on Thursday, 11 April 2019 at 1:02 PM EST. He introduced himself, and thanked our host Chris Lyon and Amphenol for the meeting facilities and amenities.

He next introduced Craig Carlson (Marvell) as vice chair and Patty Driever (IBM) as secretary.

1.2 Self-introductions

The chair requested those present to introduce themselves, with identification of the organizations they represent.

1.3 Operating under INCITS Procedures

1.3.1 Patent Information

The chair indicated that among the rules and policies under which this Technical Committee operates are the ANSI intellectual property policies as specified in pages 1-3 of INCITS patent policy slides available from <http://www.incits.org/standards-information/legal-info>.

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.

1.3.2 Antitrust Guidelines

The chair indicated that among the rules and policies under which this Technical Committee operates are the INCITS Antitrust Guidelines as specified in <http://www.incits.org/standards-information/legal-info>. Any person present at 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.

1.3.3 Public access rules

The chair indicated that among the rules and policies under which this Technical Committee operates are the INCITS rules for operating in Public Access Mode, as specified in Section 3.11 of INCITS Organization, Policies, and Procedures (found at <http://www.incits.org>).

The chair encouraged those nonmembers who attend T11 meetings regularly or intend to attend T11 meetings regularly to join the organization. He further advised that nonmembers, by remaining in this meeting, acknowledge that they understand and agree to the policies of this meeting.

1.4 Attendance

The chair instructed those present how to register using the electronic attendance list for this meeting, found via the URL <http://standards.incits.org/login>. He reminded those present that both the electronic attendance list and physical presence at the meeting will be required to qualify as attendance for formal records of this meeting.

2 Approval of the Agenda

An electronic version of the agenda was posted as T11-2019-00068-v001. The chair presented the agenda with final updates as T11-2019-00068-v002 and made a call for any changes and new agenda items. No changes or new items were requested.

Chris Lyon (Amphenol) moved and Sunny Xu (CommScope) seconded that T11-2019-00068-v002 as presented at this meeting be approved as the agenda for this meeting. The motion passed by acclamation.

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 or Task Group may be found in the INCITS Organization, Policies, and Procedures found at <http://www.incits.org>. An overview of these requirements was introduced by the chair and was available to all attendees among the electronically distributed meeting documents.

The vice chair presented the current list of members and representatives, and invited corrections. The membership effective for this meeting, as adjusted for changes introduced at this meeting, is shown in annex A.1. Attendance for this meeting is shown in annex A.2. Attendance for the ad hoc meetings is shown in annex A.3.

3.2 Changes in Representation Since the Last Meeting

The following changes in representation have been made since the last meeting:

- SmartDV lost membership due to non-payment of dues for this meeting cycle.

Landon Noll was removed as an Alternate for Cisco Systems Inc. Other representation for Foxconn remains the same.

Zach Nason was removed as an Alternate for Data Center Systems. Other representation for Data Center Systems remains the same.

Ping Huang was removed as an Alternate for VMware Inc. Other representation for VMware Inc remains the same.

Eric Chu is removed as an Alternate for Foxconn Interconnect Technology Ltd. Other representation remains the same.

Ken Mochizuki is removed as Primary for Anritsu Corporation and Tadanori Nishikobara is added as the Primary member.

3.3 New Voting Memberships

- No new voting memberships were granted at this meeting.

3.4 Voting memberships in jeopardy for attendance

- **Macom** was in jeopardy for non-attendance, but was present so retains voting membership at this meeting.

Notification of membership jeopardy by T11 Chair was sent via email on February 20, 2019 (T11-2019-00066-v000).

3.5 Voting memberships in jeopardy for non-payment of dues

- No member is in jeopardy for non-payment of dues for this meeting cycle.

3.6 Voting memberships in jeopardy for letter ballot performance

- No member is in jeopardy for letter ballot performance.

3.7 Membership for this meeting

Technical Committee T11 had 19 voting members at the T11 regular meeting 07 February 2019. With no changes in voting membership, the voting membership of T11 remains 19 effective this meeting.

Reflecting the above changes, the voting membership of T11 for this meeting is recorded in [annex A.1.2](#).

Reflecting the above changes, the advisory (i.e., nonvoting) membership of T11 for this meeting is recorded in [annex A.1.3](#).

3.8 Call for members of the press and journalists

The chair requested members of the press and journalists to introduce themselves. No person attending the meeting made such an introduction.

3.9 Call for Quorum

The total membership for this meeting is 19. One third of the total membership for this meeting is 7. The number of member organizations that responded to the call for quorum was 15. This exceeds or equals one third of the total membership for this meeting and also exceeds or equals 7. A quorum is therefore present for this meeting.

3.10 Call for Guests

The chair requested those associated with organizations that are not members of T11 to introduce themselves. No one responded.

4 Document Distribution

The chair described the process for T11 document distribution via <http://standards.incits.org>.

5 Approval of Minutes - Meeting #151

The prior regular meeting of the INCITS Fibre Channel (T11) Technical Committee was #151 on 07 February 2019. The draft Minutes of that meeting were posted as document T11/2019-00042-v001.

T11 minutes are reviewed as posted on the T11 web site. Corrections may be requested either before the subsequent meeting by email to the T11 secretary (pgd@us.ibm.com) or at the subsequent meeting in person. One correction was requested—section 11.1 title had wrong document number.

Jason Rusch (Viavi) moved and Sunny Xu (CommScope) seconded to accept T11/2019-00042-v001 as modified as the Minutes of T11 meeting #151 on 07 February 2019. The motion passed by acclamation.

See action item [19-005](#).

6 Review of Old Action Items

19-001	T11 secretary to post approved Minutes of T11 meeting #150 as agreed at T11 meeting #151. (See clause 5). Completed by posting T11-2019-00108-v000 on April 10, 2019.
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19-002	T11 chair to request INCITS Secretariat initiate a letter ballot on the FC-SW-7 draft standard Rev. 1.07 contained in T11-2019-00003-v001 . (See clause 11.2) Completed Feb. 19, 2019 (T11-2019-00065-v000)
19-003	T11 vice-chair to update meeting schedule on ICMS with new April 2019 meeting location. (See clause 19.4)

7 Review of T11 Project and Proposal Status

7.1 Project Proposals

7.1.1 None

7.2 Project Status Review

The T11 Project status sheet was displayed (see [annex B.1](#)). The current version can be viewed at any time at <http://standards.incits.org>, in the “T11 Projects” folder in the documents section.

The chair reminded all TG chairs to assure the project status sheet is maintained to reflect changes in status of their projects.

8 Results of non-ISO Letter Ballots

A letter ballot was conducted on FC-SW-7 and it succeeded with a vote of yes-14, no-0, abstain-0, and 5 non-votes.

8.1 None

9 Old Business

No old business was reopened.

10 Task Group T11.2 - Physical Interfaces

10.1 Report to T11 Plenary (T11-2019-00122-v000)

Task Group chair Tom Palkert (Macom) gave the report posted as T11-2019-00122-v000 on activity at T11.2.

10.2 Actions

There were no actions requested during this plenary meeting cycle.

10.3 Other Items

No other items were presented for TG T11.2.

11 Task Group T11.3 - Interconnection Schemes

11.1 Report to T11 Plenary (T11-2019-00123-v000)

Task Group chair Craig Carlson (Marvell) presented the information posted as T11-2019-00123-v000 on activity at T11.3.

11.2 Actions

Craig Carlson (Marvell) made a request to T11 to forward the project proposal for FC-LS-5 (**T11-2019-00006-v000**) to INCITS for further processing. Seconded by Jason Rusch (Viavi). Motion carries 15-0-0. See action item [19-006](#).

Craig Carlson (Marvell) made a motion to request to T11 to accept the resolution to T11 letter ballot comments contained in T11-2019-00090-v001 to the T11 letter ballot of FC-SW-7 Rev. 1.08 and forward the resulting FC-SW-7 draft standard Rev. 1.09 contained in **T11-2019-00003-v003** to INCITS for further processing, including first public review. Motion seconded by Patty Driever (IBM). Motion passed 15-0-0. See action item [19-007](#).

Craig Carlson (Marvell) made a request to T11 to forward the project proposal for FC-SW-8 (**T11-2019-00006-v000**) to INCITS for further processing. Seconded by Jason Rusch (Viavi). Motion passed 15-0-0.

See action item [19-008](#).

11.3 Other Items

No other items were presented for TG T11.3.

12 Joint TG T11.2 / T11.3 Items (T11-2019-00110-v000)

Task Group chair Dean Wallace (Marvell) presented the information posted as T11-2019-00110-v000 on activity at the joint T11.2/T11.3 working group.

13 T11 project activities

None for this meeting cycle.

14 Review of International Activity

14.1 INCITS SC 25 / WG4 TAG Status Report (T11-2019-00011-v000)

Fred Knight (NetApp) presented the information posted as T11-2019-00091-v000 on INCITS SC 25 / WG4 TAG project status (see [annex B.2](#)).

15 T11 New Business

15.1 National Maintenance (T11-2019-00067-v000)

Steve Wilson (Broadcom) presented T11-2019-00067-v000 on the documents that need to be reaffirmed or stabilized.

Steve Wilson (Broadcom) moved and Greg McSorley (Amphenol) seconded to recommend to INCITS that the following standard be recommended for Stabilization (2/3 Meeting). The rationale for stabilization is that the standards have ongoing validity and effectiveness, but they are mature and unlikely to require maintenance of any sort.

INCITS 450-2009[R2014]	Information technology - Fibre Channel - Physical Interfaces - 4 (FC-PI-4)
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Motion passed 15-0-0.

Steve Wilson (Broadcom) moved and Greg McSorley (Amphenol) seconded to recommend to INCITS that the following standards/technical reports be recommended for Reaffirmation (2/3 Meeting):

INCITS 485-2014	Information technology - Fibre Channel - Single Byte Command Code Sets - 5 (FCSB-5)
INCITS 508-2014	Information Technology - Storage Management - Host Bus Adapter Application Programming Interface - 2nd Generation (SM-HBA-2)
INCITS 509-2014	Information technology - Fibre Channel – Backbone – 6 (FC-BB-6)
INCITS/TR-35-2004[R2014]	INCITS Technical Report for Information Technology - Fibre Channel - Methodologies for Jitter and Signal Quality Specification - MJSQ
INCITS/TR-50-2014	INCITS Technical Report for Information Technology - Fibre Channel - Methodologies for Signal Quality Specification - 2 (FC-MSQS-2)
INCITS/TR-36-2004[R2014]	INCITS Technical Report for Information Technology - Fibre Channel - Device Attach (FC-DA)
INCITS/TR-41-2006/AM 1-2008[R2013]	INCITS Technical Report for Technical Report for Information technology - Fibre Channel - Avionics Environment - Anonymous Subscriber Messaging (FC-AEASM) - Amendment 1

Motion passed 15-0-0.

See action item [19-009](#).

15.2 INCITS Symposium and Award

Steve Wilson (Broadcom) gave a verbal summary of the annual INCITS Symposium. Steve noted that Jose Castro (Panduit) received an individual Technical Excellence award and several members of T11.3 received an FC-NVMe team award.

16 Call for Patents

16.1 Patent information registry

The chair indicated that the current record of responses to prior calls for patents can be found in the T11 web site at <http://www.t11.org/t11/docreg.nsf/v2t?openForm&ent=35>.

16.2 Call for Patents

16.2.1 Patent Information Overview

The chair reminded the meeting that among the rules and policies under which T11 operates are the INCITS intellectual property policies. An overview of patent information relevant to T11 may be found in T11-2010-008v0.

16.2.2 INCITS/ISO patent disclosure form

A template form for a patent declaration that is satisfactory to both INCITS and ISO can be found in <http://www.incits.org/standards-information/legal-info>.

No company responded to the call for patents.

17 Liaison Reports

17.1 T11 report (T11-2018-00357-v000), INCITS Liaison report (T11-2019-00028-v000)

Steve Wilson (Broadcom) presented the information posted as T11-2018-00357-v000 on activity at T11 as reported to other organizations, and the information posted as T11-2019-00028-v000 on activity at INCITS other than T11 project status.

17.2 TC T10 (no document)

Fred Knight (NetApp) gave verbal report on activity at T10.

17.3 FCIA (T11-2019-00102-v000)

Chris Lyon (Amphenol) gave report T11-2019-00102-v000 on activity at FCIA.

17.4 IEEE 802.3 (T11-2019-00120-v000)

Tom Palkert (Molex) gave report T11-2019-00120-v000 on activity at IEEE 802.3.

17.5 INCITS TC CS1 (none)

No report on activities of INCITS Technical Committee CS1 was received. However an email was received by Steve Wilson (Broadcom) from Eric Hibbard (Hitachi Ventara) of this TC and Steve provided a verbal summary.

17.6 SNIA and DMTF (T11-2019-00117-v000)

Fred Knight (NetApp) discussed report T11-2019-00117-v000 on SNIA and DMTF activities.

(Patty: make note to point Evan to FC: most trusted fabric for NVMe + schedule meetings)

17.7 NVMe (verbal)

Craig Carlson (Marvell) gave a brief verbal report on recent NVMe activities.

18 Administrative Matters

18.1 Officer Appointments

Officers of this Technical Committee and its Task Groups are:

T11 Chairman	Steve Wilson (Broadcom)
T11 International Representative	David Peterson (Broadcom)
T11 Vice Chairman	Craig Carlson (Marvell)
T11 Secretary	Patty Driever (IBM)
T11.2 Chairman	Tom Palkert (Macom)
T11.2 Vice-Chairman	Dean Wallace (Marvell)

T11.2 Secretary	Jason Rusch (Viavi)
T11.3 Chairman	Craig Carlson (Marvell)
T11.3 Vice-chairman	Roger Hathorn (IBM)
T11.3 Secretary	Patty Driever (IBM)

18.2 T11 Information Technology

18.2.1 Website status

There was no new status relative to the website.

19 Future Meeting Schedule

19.1 Authorization of adhoc meetings

The chair directed members to the ICMS T11 calendar located at the T11 section of the web site <http://standards.incits.org> the latest announcements of pending work group interim meetings and teleconferences. He advised that authorization of ad hoc work group meetings is delegated to the appropriate TG, if any.

The vice chair will account for these requests in the schedule for the T11 plenary week hosted by Broadcom and Steve Wilson in La Jolla, CA, 03-07 June 2019.

19.2 Guidelines for hosting T11 meetings (T11-2017-00151-v000)

For members who are considering hosting future plenary meetings, the chair directed their attention to "Guidelines for hosting T11 Plenary Weeks" T11-2017-00151-v000. This information includes guidelines for hosting a T11 meeting week and room night histories of past meeting weeks. This is required reading for those who are considering hosting because it summarizes the needs of the committee for meeting facilities and gives considerations that may reduce costs for the host.

Groups arranging to meet with T11 were strongly advised to confirm with the host any changes in their needs for meeting space well before the meeting. Failure to do so could easily cause serious inconvenience to the host and/or the group.

19.3 Request for hosts and 2018–2019 meeting schedule

The chair announced the following schedule for 2019-2020.

Date	Location	Host Organization	Host Person
February 4-8, 2019	Ft. Worth, TX	Teledyne-LeCroy	Dave Rogers
April 8-12, 2019	Boca Raton, FL	Amphenol	Chris Lyon
June 3-7, 2019	La Jolla, CA	Broadcom	Steve Wilson
August 12-16, 2019	Santa Fe, NM	Marvell	Craig Carlson
October 7-11, 2019	Couer d'Alene, ID	FCIA	Shelby Laramy
December 2-6, 2019	New Orleans, LA	SFF/SNIA	Greg McSorley
February 3-7, 2019	(tbd)	(tbd)	
April 6-10, 2019	(tbd)	(tbd)	
June 1-5, 2019	(tbd)	(tbd)	
August 10-14	(tbd)	(tbd)	
October 5-9	(tbd)	(tbd)	
December 7-11	(tbd)	(tbd)	

19.4 Approval of Meeting Venues

Greg McSorley (Amphenol) made a motion to hold the December 2019 T11 meeting in New Orleans, LA. Motion seconded by Roger Hathorn (IBM). Motion passed 15-0-0.

19.5 Next meeting information

The chair reminded the membership that the next T11 plenary week is hosted by Broadcom and Steve Wilson in La Jolla, CA, June 03-07, 2019. He noted that detailed information about the hotel and the locale can be found on the INCITS website in the T11 Meeting Information folder under June 2019.

19.6 Letter to travel representatives on hotel rates (T11-2017-00150-v000)

The chair reminded the membership that

- T11 plenary meetings are hosted by volunteer organizations;
- A plenary host receives no reimbursement from T11 or INCITS for any expenses of hosting;
- A plenary host may depend on agreements with the meeting hotel in order to reduce the expenses of the host and also possibly, though not necessarily, reduced the room rates for the members; and
- A hotel may charge punitive extra fees to a host if the meeting does not achieve an agreed number of room nights identified with group members.

Therefore, T11 expects those attending meetings during a plenary week to stay at the meeting hotel and identify themselves as members of the T11 group, even though less expensive lodging may be found in the area, or even at the same hotel. Document T11-2017-00150-v000 has been posted which contains a letter to those with budget responsibilities for member organizations justifying this obligation.

19.7 Plenary week meeting map for June 2019 T11 meetings

The vice chair Craig Carlson (Marvell) presented the tentative meeting map of the next T11 meeting week. He advised members for the most recent meeting map of the next T11 regular meeting to go to the INCITS website, search the T11 Meeting Information folder under June 2019.

20 Final Attendance Notice / Check

The chair reviewed the electronically registered attendance list, advised that the list was about to close, and reminded those who had not registered that the list would then become the only source of attendance for formal records of this meeting.

Final registered attendance for T11 regular meeting #152 is shown in annex A.2. 21 people from 17 member organizations were in attendance.

21 Review of Action Items

19-005	T11 secretary to post approved Minutes of T11 meeting #151 as agreed at T11 meeting #151. (See clause 5)
19-006	T11 chair to forward the project proposal for FC-LS-5 (T11-2019-00006-v000) to INCITS for further processing. See Clause 11.2 .
19-007	T11 chair to forward the resulting FC-SW-7 draft standard Rev. 1.09 contained in T11-2019-00003-v003 to INCITS for further processing, including first public review. See Clause 11.2 .
19-008	T11 chair to forward the project proposal for FC-SW-8 (T11-2019-00069-v000) to INCITS for further processing. See Clause 11.2 .
19-009	T11 chair to notify INCITS of T11 recommendations for National Maintenance documents. See Clause 15.1 .

22 Adjournment

Greg McSorley (Amphenol) moved to adjourn at 2:03 PM, seconded by Sunny Xu (CommScope). The motion passed by acclamation.

Annex A Membership and Attendance

A.1 Membership for this meeting

A.1.1 Emeritus Members

These people have been granted Emeritus membership in INCITS Fibre Channel (T11) Technical Committee, recognizing their many years of skilled leadership and high quality technical contribution:

Mr. James Coomes

Dr. William Ham

Mr. Robert Kembel

Mr. Bob Nixon

Mr. Schelto Van Doorn

A.1.2 Voting Members

The following is the list of organizations that are voting members of record for regular meeting #152 of the INCITS Fibre Channel (T11) Technical Committee, including the recognized representatives of each member organization:

Organization	Representative Type	Representative
Amphenol	Principal	Gregory McSorley
	Alternate	Brad Brubaker
	Alternate	Mike Davis
	Alternate	Daniel Dillow
	Alternate	Chris Lyon
	Alternate	Alex Persaud
	Alternate	Hu Silver
	Alternate	Michael Wingard
Broadcom Limited	Principal	Steven L. Wilson

	Alternate	David Baldwin
	Alternate	Evan Beauprez
	Alternate	Ben Chu
	Alternate	Adam Healey
	Alternate	Howard Johnson
	Alternate	Mark Jones
	Alternate	Anil Mehta
	Alternate	David Peterson
	Alternate	Rob Peterson
	Alternate	James Smart
Cisco	Principal	Mike Blair
	Alternate	Harsha Bharadwaj
	Alternate	Rajesh L G
	Alternate	Fabio Maino
	Alternate	J Metz
Commscope	Alternate	Joe Pelissier
	Principal	Yang (Sunny) Xu
	Alternate	Gary Gibbs
	Alternate	Gary Irwin
Corning	Alternate	Paul Kolesar
	Principal	Doug Coleman
	Alternate	Steven E. Swanson
DCS	Principal	Kevin Ehringer
	Alternate	Todd Wheeler
Dell	Principal	Louis Ricci
	Alternate	David Black
	Alternate	Gaurav Chawla
	Alternate	Alan Rajapa
	Alternate	Erik Smith
	Alternate	Joseph White
	Alternate	Jeff Young

Finisar	Principal	Vipul Bhatt
	Alternate	Jonathan King
	Alternate	Vera Koleva
Fujitsu America Inc	Principal	Mark Malcolm
	Alternate	Kun Katsumata
	Alternate	Osamu Kimura
	Alternate	Eugene Owens
Global Foundries	Principal	Adrian Butter
	Alternate	John Ewen
	Alternate	Jon Garlett
Hewlett Packard Enterprise	Principal	Barry Maskas
	Alternate	Curtis Ballard
	Alternate	Rupin Mohan
	Alternate	Krishna Babu Puttagunta
IBM	Principal	Roger Hathorn
	Alternate	Patty Driever
	Alternate	Stephen Guendert
Macom	Principal	Tom Palkert
Marvell Semiconductor Inc	Principal	Craig W. Carlson
	Alternate	Sanjaya Anand
	Alternate	Anshul Agarwal
	Alternate	Girish Basrur
	Alternate	Kathy Caballero
	Alternate	Robert Friend
	Alternate	Duane Grigsby
	Alternate	Ali Khwaja
	Alternate	Rick Hicksted Jr.
	Alternate	Michael Dudek
	Alternate	Stephen Lam
	Alternate	Ray Leung
	Alternate	Akinori Maeda

	Alternate	Praveen Midha
	Alternate	Trinh Nguyen
	Alternate	Raul Oteyza
	Alternate	Alan Spalding
	Alternate	Gourangadoss Sundar
	Alternate	Darren Trapp
	Alternate	Andrew Vasquez
	Alternate	Dean Wallace
NetApp	Principal	Frederick Knight
	Alternate	John Meneghini
	Alternate	Urmi Misra
OFS	Principal	Roman Shubochkin
	Alternate	Mabud Choudhury
Panduit	Principal	Jose Castro
	Alternate	Bulent Kose
	Alternate	Robert Reid
	Alternate	Steve Skiest
Teledyne LeCroy	Principal	David Rodgers
	Alternate	Douglas Lee
	Alternate	Henry Poelstra
Viavi	Principal	Jason Rusch
	Alternate	Scott Baxter
	Alternate	George Bullis
	Alternate	Paul Gentieu

A.1.3 Advisory Members

The following is the list of organizations that are advisory (i.e., nonvoting) members of record for regular meeting #152 of the INCITS Fibre Channel (T11) Technical Committee, including the recognized representatives of each member organization:

Organization	Representative Type	Representative
Anritsu	Principal	Tadanori Nishikobara

Ciena	Principal	Stephen Shew
	Alternate	Sebastien Gareau
Foxconn Interconnect Technology	Principal	John Petrilla
	Alternate	Fred Fons
	Alternate	Glenn Moore
	Alternate	William Peters
Futurewei	Principal	Philip Kufeldt
	Alternate	Victor Gissen
	Alternate	Yang Liu
	Alternate	Xu Qi Ming
	Alternate	Liu Qing
	Alternate	Xin Qiu
Hitachi Vantara	Alternate	Eddy Zhou
	Principal	Eric Hibbard
	Alternate	Vincent Franceschini
	Alternate	Akinobu Shimada
	Alternate	Erwin van Londen
Keysight Technologies	Alternate	Ken Wood
	Principal	Stephen Didde
	Alternate	Steve Sekel
	Alternate	Hajime Takahashi
Lumentum	Alternate	Joachim Vobis
	Principal	Dave Lewis
	Principal	Tamer Ali
MediaTek	Alternate	Mau-Lin Wu
	Principal	Lee Prewitt
Microsoft	Alternate	Paul Luber
	Alternate	Steve Olsson
	Principal	Alexandra Haser
Molex	Alternate	Jay Neer
	Alternate	Tom Palkert
	Principal	

	Alternate	Scott Sommers
TE Connectivity	Principal	Nathan Tracy
	Alternate	Jeff Mason
Unisys	Principal	Jeffrey Dremann
	Alternate	Phil Shelton
VMWare	Principal	Neil MacLean
	Alternate	Wenchao Cui
	Alternate	Ping Huang
	Alternate	Wenhua Liu
	Alternate	Murali Rajagopal
	Alternate	Ahmad Tawil

A.2 Attendance at this meeting

A.2.1 Member organizations

The following is the list of member organizations and their representatives recorded in the online attendance registry as attending regular meeting #152 of the INCITS Fibre Channel (T11) Technical Committee:

Organization	Representative(s)
AMPHENOL	Chris Lyon
	Greg McSorley
BROADCOM	Steven L. Wilson
CISCO	Mike Blair
	Harsha Bharadwaj
COMMSCOPE	Sunny Xu
CORNING INC	Doug Coleman
DELL INC	Alan Rajapa
FINISAR CORPORATION	Vera Koleva
FOXCONN INTERCONNECT TECHNOLOGY LTD (FIT)	John Petrilla

FUJITSU AMERICA INC	Mark Malcolm
GLOBALFOUNDRIES US2 LLC	Adrian Butter
IBM CORP	Patty Driever
	Roger Hathorn
MACOM	Thomas Palkert
MARVELL SEMICONDUCTOR INC	Craig W. Carlson
	Dean Wallace
NETAPP INC	Frederick Knight
OFS FITEL LLC	Mabud Choudhury
TELEDYNE LECROY CORP	Henry Poelstra
VIAVI SOLUTIONS INC	Jason Rusch

A.2.2 Ad hoc meeting attendance

FC-NVMe-2 ad hoc, members

Organization	Representative(s)
BROADCOM LIMITED	David Baldwin
	Howard Johnson
	David Peterson
	Steven Wilson
CISCO	Mike Blair
	Harsha Bharadwaj
DELL INC	Alan Rajapa
FUJITSU AMERICA INC	Mark Malcolm
IBM	Patty Driever
	Roger Hathorn
MARVELL SEMICONDUCTOR	Craig Carlson
VIAVI	Jason Rusch

FC-SW-7 ad hoc, members

Organization	Representative(s)
BROADCOM LIMITED	David Baldwin
	Howard Johnson
	David Peterson
	Steven Wilson
CISCO	Mike Blair
	Harsha Bharadwaj
DELL INC	Alan Rajapa
FUJITSU AMERICA INC	Mark Malcolm
IBM	Patty Driever
	Roger Hathorn
NETAPP INC	Frederick Knight
TELEDYNE LECROY CORPORATION	Henry Poelstra
VIAVI	Jason Rusch

FC-PI-8 ad hoc, members

Organization	Representative(s)
AMPHENOL CORP	Gregory McSorley
BROADCOM INC	Ben Chu
COMMSCOPE	Sunny Xu
CORNING INC	Doug Coleman
FINISAR CORP	Vera Koleva
FOIT	John Petrilla
GLOBALFOUNDRIES	Adrian Butter
MARVELL SEMICONDUCTOR INC	Raul Oteyza
MARVELL SEMICONDUCTOR INC	Dean Wallace
OFS FITEL LLC	Mabud Choudhury
PANDUIT CORP	Jose Castro
TELEDYNE-LECROY CORP	Henry Poelstra

FC-GS-8 ad hoc, members

Organization	Representative(s)
BROADCOM LIMITED	David Baldwin
	Howard Johnson
	David Peterson
	Steven Wilson
CISCO	Mike Blair
	Harsha Bharadwaj
DELL INC	Alan Rajapa
	DJ Brown
FUJITSU AMERICA INC	Mark Malcolm
IBM	Roger Hathorn
	Patty Driever
MARVELL SEMICONDUCTOR INC	Raul Oteyza
NETAPP INC	Frederick Knight
VIAVI	Jason Rusch

FC-LS-4 ad hoc, members

Organization	Representative(s)
BROADCOM	David Baldwin
	Howard Johnson
	Dave Peterson
	Steven Wilson
CISCO	Mike Blair
	Harsha Bharadwaj
DELL INC	Alan Rajapa
FUJITSU AMERICA INC	Mark Malcolm
IBM	Roger Hathorn
	Patty Driever

MARVELL SEMICONDUCTOR INC	Craig Carlson
NETAPP INC	Frederick Knight
VIAVI	Jason Rusch

FC-FS-6 ad hoc, members

Organization	Representative(s)
BROADCOM	David Baldwin
	Howard Johnson
	David Peterson
CISCO	Mike Blair
	Harsha Bharadwaj
DELL INC	Alan Rajapa
	DJ Brown
FUJITSU AMERICA INC	Mark Malcolm
IBM	Roger Hathorn
	Patty Driever
MARVELL SEMICONDUCTOR INC	Craig Carlson
NETAPP	Frederick Knight
TELEDYNE-LECROY	Henry Poelstra
VIAVI	Jason Rusch
WESTERN DIGITAL	Ralph Weber

Annex B Supporting Documents

B.1 T11 Project Status

The following table indicates the status of all active T11 projects. It reflects the official status as reported on the T11 web site as of the T11 regular meeting #152 held on 11 April 2019.

Standard	Status	Action	Target or Reaffirm Date	Editor	Ad Hoc Chair	Secretary
Projects in Development Stage						
FC-FS-6	In dev.	To T11	Jun-19	Carlson	Peterson	Driever
FC-GS-8	In dev.	To T11	Apr-19	Rusch	Peterson	Driever
FC-LS-4	In dev.	To T11	Apr-19	Carlson	Driever	Rusch
FC-PI-7P	In dev.	ToT11	Jun-19	Castro	Wallace	Wallace
FC-PI-8	In dev.	ToT11	Dec-20	Castro	Wallace	Wallace
FC-SW-7	In dev.	To T11.3	Apr-19	Peterson	Carlson	Peterson
FC-MSQS-3	In dev.	To T11	Jun-19	Castro	Wallace	Wallace
FC-NVMe-2	In dev.	To T11.3	Apr-19	Peterson	Carlson	Hathorn
FC-RDMA	In dev.	To T11.3	Oct.20	Peterson	Carlson	Peterson
Projects in Approval Stage						
FC-FS-5	At INCITS	EB Approval	Apr-19	Peterson	Carlson	Driever
FC-PI-7	At INCITS	EB Approval	Apr-19	Castro	Wallace	Wallace
FC-NVMe AM1	At INCITS	ANSI Approval	Feb-19	Peterson	Carlson	Hathorn

B.2 INCITS SC 25 / WG4 project status

The following tables indicates the status of all active INCITS SC 25 / WG4 TAG projects. It reflects the official status as reported at the T11 regular meeting #152, 11 April 2019 in document T11-2019-00091-v000. The SC 25/WG 4 TAG project database is available in document [sc25-wg4-2018-00011-TAG-Project-Database](#).

B.2.1 Active T11 SC25 WG4 TAG Projects

	ISO/IEC # (T11 allocated)	Status
FC-SP-2+AM1	14165-432	Submitted in July 2018. Resubmission email from INCITS/TIA on January 18, 2019 Feb 22 – email from Juergen indicates IEC project was started JTC1-SC25/2860/NP ballot opened 3/1/2019 and closes 05/24/2019
FC-BB-6	14165-246	ISO ballot opens 3/21/2019 and closes 6/13/2019
FC-SB-6	14165-225	ISO ballot opens 3/21/2019 and closes 6/13/2019