



InterNational Committee for Information Technology Standards (INCITS)  
Secretariat: Information Technology Industry Council (ITI)  
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[www.INCITS.org](http://www.INCITS.org)



T11-2019-00303-v000

**Minutes Fibre Channel Protocol  
(T11.3) Task Group plenary meeting #130  
2019 October 10 – 10:30 to 11:30 PDT  
Couer d'Alene, Idaho, US**

## 1 Opening remarks and introductions

The chair convened plenary meeting #130 of the Fibre Channel Protocol (T11.3) Task Group on 2019 October 10 at 10:32 PDT. He introduced himself as Craig Carlson (Marvell), and the group thanked Chris Lyon and FCIA, for the meeting facilities. Roger Hathorn introduced himself as Vice-Chair and Patty Driever (IBM) introduced herself as secretary. Members then introduced themselves.

## 2 Approval of the Agenda

An electronic version of the agenda, [T11-2019-00286-v000](#), and supporting documents were made available among the documents for this meeting. The agenda was in HTML format with links to the appropriate supporting documents. The chair presented the agenda and made a call for any new agenda items. No new items were requested.

Jason Rusch (Viavi) moved and Alan Rajapa (Dell) seconded that [T11-2019-00286-v000](#) be approved as posted as the agenda for this meeting. The motion passed unanimously.

## 3 Administrative Matters

### 3.1 T11.3 Admin Is Trivia

The chair, Craig Carlson (Marvell), stated that T11.3 administrative information is available among the documents for this meeting: Starting with the web page <https://standards.incits.org/apps/org/workgroup/t11.3/> links lead to contact information for T11.3 officers, membership rules, project information, procedures and operating rules, patent rules, and internet resources. The chair recommended that members familiarize with these rules so the business of the Task Group may be conducted expeditiously.

Members were advised to see any of the officers if they require additional assistance.

### **3.2 Document Distribution**

The chair instructed those present how to access meeting documents via the INCITS T11 Web Site Center page <https://standards.incits.org/apps/org/workgroup/t11/documents.php> The chair uploaded a zip file document containing all documents reviewed at this meeting: [T11-2019-00323-v000](#).

### **3.3 Other matters of grave concern**

The chair instructed those present how to register using the electronic attendance list for this meeting. He reminded those present that the electronic attendance list would become the only formal record of attendance at this meeting.

## **4 Patents**

The chair presented an overview of INCITS patent policies and guidelines, as found in INCITS Policies and Guidelines (<http://www.incits.org/standards-information/legal-info>), sub clause 8.4. In accordance with those policies, 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](mailto:lbarra@itic.org)).

## **5 Antitrust Policies**

The chair noted that the INCITS Antitrust Guidelines applied to this task group meeting. The chair further noted that it was the responsibility of all attendees, and not just the officers, to ensure that the Guidelines are followed, and to terminate discussions if they are not. 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.

The INCITS Antitrust Guidelines are available on the INCITS web site (<http://www.incits.org/standards-information/legal-info>).

## **6 Attendance and Membership**

### **6.1 Current membership list**

The chair encouraged those who attend T11 meetings regularly or intend to attend T11 meetings regularly and are not T11 members to consider joining the organization.

Information on how membership is gained, maintained, and lost in any INCITS Technical Committee or Task Group may be found in INCITS Organization and Procedures (<http://www.incits.org/standards-information/policies>) sub clause 3.8. An overview of these requirements was introduced by the chair and was available to all attendees in 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. Attendance for this meeting is shown in Annex B.

## **6.2 Voting memberships in jeopardy**

No company was in jeopardy after the last meeting.

## **6.3 Changes in Membership**

### **6.3.1 Changes in representation since last meeting**

Xiaohong Wu was added as Alternate for Cisco Systems Inc. All other representation for Cisco Systems Inc remains the same.

### **6.3.2 New voting memberships**

No changes in voting membership occurred at this meeting.

### **6.3.3 Voting memberships changed for other reasons**

None

### **6.3.4 Changes in advisory membership**

None

### **6.3.5 Changes in emeritus membership**

None

### **6.3.6 Membership for this meeting and call for quorum**

Task Group T11.3 had 11 voting members at the previous T11.3 plenary meeting (August 15, 2019). At this meeting, October 10, 2019:

0 new voting member organizations (see 6.3.2);

0 reinstated voting member organization (see 6.3.3)

- 0 voting member organizations losing voting membership for not attending the required number of meetings (see 6.2); and
- 0 voting member organizations losing voting membership for other reasons (see 6.3.3), the voting membership of T11.3 remains at 11 members.

### 6.3.7 Quorum Call

11 members responded to the call for quorum. One third of the total membership for this meeting is 4. The number 11 exceeds or equals one third of the total membership for this meeting and also exceeds or equals 4. A quorum is therefore present for this meeting.

## 7 Approval of Minutes - Meetings #129

The prior plenary meeting of the Fibre Channel Protocol (T11.3) Task Group was #129 on 2019 August 15. The draft minutes of that meeting were posted as document [T11-2019-00254-v000](#).

You may review the T11.3 minutes by reviewing the version that is posted on the web site and requesting corrections either before the subsequent meeting using the Internet mail reflector ([fc\\_protocol@standards.incits.org](mailto:fc_protocol@standards.incits.org)) or at the subsequent meeting in person. Non-editorial and/or substantial requests for corrections will be noted in detail at the next plenary meeting prior to the plenary body voting on the minutes. Until approved by the plenary body, these minutes are unofficial draft minutes only.

Jason Rusch (Broadcom) moved and Alan Rajapa (Dell) seconded to accept at this meeting [T11-2019-00254-v000](#) as posted as the minutes of T11.3 meeting #129 on 2019 August 15. The motion passed unanimously.

See Action Item [19-019](#).

## 8 Review of Old Action Items

ACTION 19-014	T11.3 secretary to post <a href="#">T11-2019-00174-v001</a> as the approved minutes of T11.3 meeting #128. See <a href="#">Clause 7</a> .
ACTION 19-015	T11.3 secretary to post <a href="#">T11-2019-00254-v000</a> as the draft minutes of T11.3 meeting #129.
ACTION 19-016	Chair to request T11 accept <a href="#">T11-2019-00171-v003</a> as RFC ballot comment resolution and forward the resulting FC-GS-8 draft standard Rev. 11.07 contained in <a href="#">T11-2019-00103-v001</a> to INCITS for further processing
ACTION 19-017	Chair to request T11 forward the project proposal for FC-GS-9 ( <a href="#">T11-2019-00173-v000</a> ) to INCITS for further processing.
ACTION 19-018	Chair to request T11 accept <a href="#">T11-2019-00078-v006</a> and <a href="#">T11-2019-00079-v006</a> as RFC ballot comment resolution and forward the resulting FC-LS-4 draft standard Rev. 4.05 contained in <a href="#">T11-2019-00213-v001</a> to INCITS for further processing.

All of the above action items were completed.

## 9 Liaison Reports

### 9.1 *TC T11 and INCITS*

T11 chair Steve Wilson (Brocade) asked if anyone wanted him to review the T11 TC report to other committees (posted as [T11-2019-00268-v000](#) . When no one requested a review of the report, Steve noted that the report is always available on the T11 web site for future inspection. Steve Wilson (Brocade) presented extracts relevant to T11.3 from the INCITS Report to T11 posted as [T11-2019-00287-v000](#).

### 9.2 *Other liaison reports*

No other liaison reports were presented.

## 10 Project Status

### 10.1 *FC-FS-6*

Dave Peterson (Broadcom) presented the information posted as [T11-2019-00278-v000](#) about FC-FS-6 ad hoc activity since the last plenary meeting of this Task Group.

### 10.2 *FC-GS-9*

Dave Peterson (Broadcom) presented the information posted as [T11-2019-00280-v000](#) about FC-GS-9 ad hoc activity since the last plenary meeting of this Task Group.

### 10.3 *FC-LS-5*

Patty Driever (IBM) presented the information posted as [T11-2019-00318-v001](#) about FC-LS-5 ad hoc activity since the last plenary meeting of this Task Group.

### 10.4 *FC-NVMe-2*

Craig Carlson (Marvell) presented the information posted as [T11-2019-00317-v000](#) about FC-NVMe-2 ad hoc activity since the last plenary meeting of this Task Group.

Dave Baldwin (Broadcom) presented [T11-2019-00162-v002](#) for resolution to the last remaining open RFC ballot comment. Dave Baldwin will post [T11-2019-00162-v002 as modified](#) as resolution to the open letter ballot comment.

Craig Carlson made a motion to request T11.3 accept [T11-2019-00077-v006](#) as RFC ballot comment resolution and forward the resulting FC-NVMe-2 draft standard Rev. 1.07 contained in [T11-2019-00210-v002](#) to T11 for further processing. Seconded by Dave Peterson (Broadcom). Motion carried 10-0-0. See action item [19-021](#).

## **10.5 FC-RDMA**

Craig Carlson (Marvell) presented the information posted as [T11-2019-00315-v000](#) about FC-RDMA ad hoc activity since the last plenary meeting of this Task Group.

## **10.6 FC-SW-8**

Craig Carlson (Marvell) presented the information posted as [T11-2019-00314-v000](#) about FC-SW-7 ad hoc activity since the last plenary meeting of this Task Group.

## **10.7 FCP-5**

Dave Peterson (Broadcom) presented the information posted as [T11-2019-00324-v000](#) about FCP-5 ad hoc activity since the last plenary meeting of this Task Group.

## **10.7 Joint T11.2/T11.3**

Craig Carlson (Marvell) presented the information posted as [T11-2019-00 306-v000](#) about Joint T11.2/T11.3 ad hoc activity since the last plenary meeting of this Task Group.

# **11 Other Business and Technical Items**

## **12 Review T11.3 Project Status**

The current project status is available among the electronically distributed meeting documents as well as on the INCITS web site

([https://standards.incits.org/apps/org/workgroup/portal/projects.php?end\\_in\\_year=never&page=1](https://standards.incits.org/apps/org/workgroup/portal/projects.php?end_in_year=never&page=1)).

The chair asked that if the facilitators or anyone else finds errors that they inform him.

## **13 Future Meeting Schedule**

### **13.1 Plan for the next meeting week**

SNIA-SFF will host the next T11 meeting on 2019 December 05 in New Orleans, LA.

Refer to the INCITS T11 meeting web site page

([https://standards.incits.org/apps/org/workgroup/t11/documents.php?folder\\_id=2202](https://standards.incits.org/apps/org/workgroup/t11/documents.php?folder_id=2202)) for the meeting announcement, which will always contain the latest information on future T11.3 plenary meetings.

PLEASE NOTE: If there is any conflict between the website schedule database, and the single ASCII sheet, the database is to be considered correct.

## 13.2 Ad-hoc meetings

Refer to the INCITS T11 meeting web site page for further details.

([https://standards.incits.org/apps/org/workgroup/t11/documents.php?folder\\_id=2202](https://standards.incits.org/apps/org/workgroup/t11/documents.php?folder_id=2202)). This URL will always contain the latest announcements of pending work group interim meetings and teleconferences.

## 14 Action Items

ACTION 19-019	T11.3 secretary to post <b><u>T11-2019-00254-v001</u></b> as the approved minutes of T11.3 meeting #129. See <a href="#">Clause 7</a> .
ACTION 19-020	T11.3 secretary to post <b><u>T11-2019-00303-v000</u></b> as the draft minutes of T11.3 meeting #130.
ACTION 19-021	Chair to request T11 accept <b><u>T11-2019-00077-v006</u></b> as RFC ballot comment resolution and forward the resulting FC-NVMe-2 draft standard Rev. 1.07 contained in <b><u>T11-2019-00210-v002</u></b> to INCITS for further processing.

## 15 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 formal record of attendance at this meeting.

Chair also reminded everyone that physical presence at the meeting is required in order to count towards membership requirements. If you sign in but are not physically present at the meeting, the sign-in will be discarded by INCITS.

## 16 Adjournment

Dave Peterson (Broadcom) moved and Jason Rusch (Viavi) seconded to adjourn at 2019 October 10 11:19 AM PDT. The motion passed unanimously.

## A Membership

Reflecting the changes at this meeting, the voting membership of T11.3 for this meeting is:

Organization	Name	Principal/ Alternate
Amphenol Corporation	Chris Lyon	Principal
	Hu Silver	Alternate
Broadcom Inc	David Baldwin	Principal
	Ben Chu	Alternate
	Mark Jones	Alternate

	David Peterson James Smart Steven L. Wilson	Alternate Alternate Alternate
Cisco Systems, Inc.	Mike Blair Harsha Bharadwaj Fabio Maino J Metz Joe Pelissier Xiaohong Wu	Principal Alternate Alternate Alternate Alternate Alternate
Dell	Alan Rajapa David Black David Brown Gaurav Chawla Erik Smith Joseph White Jeff Young	Principal Alternate Alternate Alternate Alternate Alternate Alternate
Fujitsu	Mark Malcolm Kun Katsumata Eugene Owens	Principal Alternate Alternate
Global Foundries	Adrian Butter John Ewen	Principal Alternate
Hewlett Packard Enterprise	Barry Maskas Rupin Mohan Krishna Babu Puttagunta	Principal Alternate Alternate
IBM Corporation	Roger Hathorn Patty Driever Stephen Guendert	Principal Alternate Alternate
Marvell Semiconductor Inc	Craig W. Carlson Raul Oteyza Alan Spalding Darren Trapp Dean Wallace	Principal Alternate Alternate Alternate Alternate
NetApp Inc	Frederick Knight Urmi Misra	Principal Alternate
Viavi Solutions Inc.	Jason Rusch Scott Baxter George Bullis Paul Gentieu	Principal Alternate Alternate Alternate

Reflecting the changes at this meeting, the advisory (i.e., nonvoting) membership of T11.3 for this meeting is:

<b>Organization</b>	<b>Name</b>	<b>Principal/ Alternate</b>
Foxconn Interconnect Technologies	John Petrilla Glenn Moore William Peters	Principal Alternate Alternate
Futurewei Technologies Inc	Timothy Jeffries Lei Wang	Principal Alternate
Hitachi Vantara	Eric Hibbard Vincent Franceschini Erwin van Londen	Principal Alternate Alternate
MediaTek USA Inc	Tamer Ali Mau-Lin Wu	Principal Alternate
Microsoft Corporation	Lee Prewitt	Principal
Teledyne LeCroy Corporation	David Rodgers Douglas Lee Henry Poelstra	Principal Alternate Alternate
Unisys Corporation	Jeffrey Dremann Phil Shelton	Principal Alternate
VMware Inc	Neil MacLean Wenchao Cui Wenhua Liu Murali Rajagopal Ahmad Tawil	Principal Alternate Alternate Alternate Alternate

Reflecting the changes at this meeting, 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:

Dr.  
William  
Ham  
Mr. Gary  
Stephens  
Mr. James  
Coomes  
Mr. Robert

Kembel  
Mr.  
Joseph  
Mathis Mr.  
Horst  
Trustedt

## B Attendance

The following table lists those persons who electronically recorded their attendance at this plenary meeting. This includes representatives from voting member companies and may include representatives from non-voting advisory companies, as well as non-voting emeritus members and visitors.

This table also records the affiliations claimed by those who registered their attendance. The presence of a company or organization in the affiliation column does not imply that it is a member of T11.3, nor does it imply that the person in attendance is a representative of that company or organization.

See "Section A: Membership" above for a complete list of voting members of T11.3 as well as a list of non-voting advisory companies and emeritus members.

<b>Sequence</b>	<b>Affiliation</b>	<b>Name</b>
1	AMPHENOL CORPORATION	Chris Lyon
2	BROADCOM INC	David Baldwin
3	BROADCOM INC	David Peterson
4	BROADCOM INC	Steven L. Wilson
5	CISCO SYSTEMS INC	Mike Blair
6	DELL INC	Alan Rajapa
7	FUJITSU AMERICA INC	Mark Malcolm
8	GLOBAL FOUNDRIES	Adrian Butter

9	HEWLETT PACKARD ENTERPRISE	Krishna Babu Puttagunta
10	IBM CORPORATION	Patty Driever
11	IBM CORPORATION	Roger Hathorn
12	MARVELL SEMICONDUCTOR INC	Craig W. Carlson
13	NETAPP INC	Frederick Knight
14	VIAVI SOLUTIONS	Jason Rusch

## C Attendance at Ad Hoc Meetings

### C.1 FC-NVMe-2

Organization	Representative	Member Company
Broadcom Inc	David Baldwin	Y
Broadcom Inc	David Peterson	Y
Broadcom Inc	Howard Johnson	Y
Broadcom Inc	Steven Wilson	Y
Cisco Systems Inc	Mike Blair	Y
Cisco Systems Inc	J Metz	Y
Dell Inc.	Alan Rajapa	Y
Fujitsu America Inc	Mark Malcolm	Y
Hewlett Packard Enterprise	Krishna Babu Puttagunta	Y
IBM Corporation	Patty Driever	Y
IBM Corporation	Roger Hathorn	Y
Marvell Semiconductor Inc	Craig W. Carlson	Y

NetApp Inc	Frederick Knight	Y
Viavi Solutions Inc	Jason Rusch	Y

### C.2 FC-LS-5

Organization	Representative	Member Company
Broadcom Inc	David Baldwin	Y
Broadcom Inc	Howard Johnson	Y
Broadcom Inc	David Peterson	Y
Cisco Systems Inc	Mike Blair	Y
Cisco Systems Inc	J Metz	Y
Dell Inc.	Alan Rajapa	Y
Fujitsu America Inc	Mark Malcolm	Y
Hewlett-Packard Enterprise	Krishna Babu Puttagunta	Y
IBM Corporation	Patty Driever	Y
IBM Corporation	Roger Hathorn	Y
Marvell Semiconductor Inc	Craig Carlson	Y
NetApp Inc	Frederick Knight	Y
Viavi Solutions Inc	Jason Rusch	Y

### C.3 FC-FS-6

Organization	Representative	Member Company
Broadcom Inc	David Baldwin	Y
Broadcom Inc	David Peterson	Y
Broadcom Inc	Howard Johnson	Y
Broadcom Inc	Steven Wilson	Y
Cisco Systems Inc	Mike Blair	Y
Cisco Systems Inc	Mark Allen	Y
Dell Inc.	Alan Rajapa	Y
Fujitsu America Inc	Mark Malcolm	Y
Hewlett-Packard Enterprise	Krishna Babu Puttagunta	Y
IBM Corporation	Patty Driever	Y
IBM Corporation	Roger Hathorn	Y
Marvell Semiconductor Inc	Craig W. Carlson	Y
NetApp Inc	Frederick Knight	Y
Viavi Solutions	Jason Rusch	Y

### C.4 FC-SW-8

<b>Organization</b>	<b>Representative</b>	<b>Member Company</b>
Broadcom Inc	Howard Johnson	Y
Broadcom Inc	David Peterson	Y
Broadcom Inc	David Baldwin	Y
Broadcom Inc	Steven Wilson	Y
Cisco Systems Inc	Mike Blair	Y
Cisco Systems Inc	Mark Allen	Y
Dell Inc	Alan Rajapa	Y
Fujitsu America Inc	Mark Malcolm	Y
Hewlett-Packard Enterprise	Krishna Babu Puttagunta	Y
IBM Corporation	Patty Driever	Y
IBM Corporation	Roger Hathorn	Y
Marvell Semiconductor Inc	Craig Carlson	Y
NetApp Inc	Frederick Knight	Y
Viavi Solutions	Jason Rusch	Y

#### **C.5 FC-RDMA**

<b>Organization</b>	<b>Representative</b>	<b>Member Company</b>
Broadcom Inc	David Baldwin	Y
Broadcom Inc	David Peterson	Y
Broadcom Inc	Steven Wilson	Y
Cisco Systems Inc	Mike Blair	Y
Dell Inc	Alan Rajapa	Y
Fujitsu America Inc	Mark Malcolm	Y
Hewlett-Packard Enterprise	Krishna Babu Puttagunta	Y
IBM Corporation	Patty Driever	Y
IBM Corporation	Roger Hathorn	Y
Marvell Semiconductor Inc	Craig Carlson	Y
NetApp Inc	Frederick Knight	Y
Viavi Solutions Inc	Jason Rusch	Y

#### **C.6 FC-GS-9**

<b>Organization</b>	<b>Representative</b>	<b>Member Company</b>
Broadcom Inc	David Baldwin	Y
Broadcom Inc	Howard Johnson	Y
Broadcom Inc	David Peterson	Y

Cisco Systems Inc	Mike Blair	Y
Cisco Systems Inc	Mark Allen	Y
Dell Inc.	Alan Rajapa	Y
Fujitsu America Inc	Mark Malcolm	Y
Hewlett-Packard Enterprise	Krishna Babu Puttagunta	Y
IBM Corporation	Patty Driever	Y
IBM Corporation	Roger Hathorn	Y
NetApp Inc	Frederick Knight	Y
Viavi Solutions	Jason Rusch	Y

### **C.7 Joint T11.2/T11.3**

<b>Organization</b>	<b>Representative</b>	<b>Member Company</b>
Amphenol Corporation	Gregory McSorley	Y
Broadcom Inc	David Baldwin	Y
Broadcom Inc	Ben Chu	Y
Broadcom Inc	David Peterson	Y
Broadcom Inc	Steven Wilson	Y
Cisco Systems Inc	Mike Blair	Y
Cisco Systems Inc	J Metz	Y
CommScope	Gary Gibbs	Y
Data Center Systems	Todd Wheeler	Y
Foxconn Interconnect Technology Ltd (FIT)	John Petrilla	Y
Fujitsu America Inc	Mark Malcolm	Y
Global Foundries US2 LLC	Adrian Butter	Y
Hewlett-Packard Enterprise	Krishna Babu Puttagunta	Y
Marvell Semiconductor Inc	Craig Carlson	Y
Marvell Semiconductor Inc	Raul Oteyza	Y
NetApp Inc	Frederick Knight	Y
Viavi Solutions Inc	Jason Rusch	Y