

**Minutes**  
**T11.3 FC-NVME ad hoc work group regular meeting**  
**10 Apr, 2019 – 02:00PM-06:00PM EST**  
**Boca Raton, FL, USA**

The FC-NVME ad hoc work group of the Fibre Channel Protocol (T11.3) Task Group held a regular meeting at Boca Raton, FL on 10 Apr, 2019, hosted by Amphenol. Attendance was 12 people from 7 organizations and is tabulated at the end of this document.

Roger Hathorn (IBM) (rhathorn@us.ibm.com) took minutes. Please report any corrections by email at [fc\\_protocol@standards.incits.org](mailto:fc_protocol@standards.incits.org)

## **1 Opening Remarks**

### ***Introductions***

Chairperson Craig Carlson (QLogic) opened the regular meeting on Wednesday, 10 Apr, 2019 at 2:17 PM EST and led a round of introductions and thanked the host (Amphenol) for organizing this week's events.

## **2 Meeting Policy**

### ***2.1 Attendance and Membership***

The chair explained that attendance is recorded electronically at <https://standards.incits.org/apps/org/workgroup/t11>, and explained the procedure. Attendance at this meeting does not count toward attendance at the plenaries of T11 and its task groups (i.e., being here will not get you out or keep you out of membership jeopardy).

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

### ***2.2 Patents***

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

## **2.3 Antitrust**

The chair indicated that among the rules and policies under which this working group operates are the INCITS Antitrust Guidelines. Any member of the meeting is responsible for objecting if he believes discussion in the meeting violates those guidelines. As examples, there should never be discussion of the following topics at any INCITS or INCITS subgroup meeting:

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

If such discussion is not immediately terminated, it is the chairperson's responsibility to terminate the meeting. The INCITS Antitrust Guidelines are available at <http://www.incits.org/inatrust.htm>

## **3.0 Approval of Agenda**

An agenda for the FC-NVME ad hoc work group regular meeting 10 Apr, 2019 was posted as T11/2019-00107-v0000.

*Motion: David Peterson (Broadcom) moved and Patty Driever (IBM) seconded to accept T11/2019-00107-v000 as amended as the agenda for this regular meeting. Approved by acclamation.*

## **4.0 Past Business**

### **4.1 Review of Minutes**

*Motion: Howard Johnson (Broadcom) moved and Patty Driever (IBM) seconded to accept the following document as the official minutes for the regular meeting on 06 Feb, 2018. Approved by acclamation.*

T11-2018-00047-v000.pdf

FC-NVMe-2 Ad Hoc working group meeting Minutes for February 6, 2018

### **4.2 Review of Old Action Items**

**Action items carried forward from prior meetings:**

19-0204-01: Editor to post revision 1.04 of FC-NVMe-2 with accepted Annex E content - Complete

19-0204-02: Chair to request T11.3 conduct an RFC ballot on FC-NVMe rev 1.04. - Complete

**New action items from this meeting:**

19-0410-01: Dave Baldwin to prepare a proposal for a Disconnect Connection to disconnect a single connection for sizing of scope for FC-NVMe-2.

**Completed action items from prior meetings:**

18-1205-01: Dave Baldwin to ensure text is in FC-FS-6 that specifies the setting of SI bit in a FLUSH response. – Complete -all good.

18-1205-02: Editor to incorporate T11-2018-00262-v1 on CMD IU extensions for PI – Complete (Rev 1.03)

18-1205-03: David Peterson to post and incorporate T11-2018-00155-v005 for SLER Diagrams – Complete (Rev 1.03)

18-1205-04: Dave Baldwin to post T11-2018-00328-v001 on lost read data enhancement - Complete

18-1205-05: Editor to incorporate T11-2018-00328-v001 – Complete (Rev 1.03)

18-1205-06: Editor to post revision 1.03 with all approved proposals incorporated – Complete

18-1003-01: Dave Baldwin to post T11-2018-00221-v2 on accommodation of NVMe TP8005 – Complete

18-1003-02: Editor to incorporate T11-2018-00221-v2 - Complete

18-1003-03: Dave Baldwin to post T11-2018-00261-v1 on SLER Lost CMD IU text – Complete

18-1003-04: Editor to incorporate T11-2018-00261-v1 – Complete

18-1003-05: Dave Baldwin to post T11-2018-00262-v1 on PI for further review – Complete

18-0606-05: Editor to incorporate T11-2018-00129-v002 in the next draft (incorporated but not yet posted). Complete. See Rev 1.01 of draft

18-0715-01: David Peterson to post revision T11-2018-0103-v003 (Misc. SLER text) - complete

18-0715-02: Editor to incorporate T11-2018-0103-v003 (Misc. SLER text) - Complete. See Rev 1.01 of draft

18-0715-01: David Baldwin to post revision T11-2018-00047-v007 (SLER text)- Complete

18-0715-02: Editor to incorporate T11-2018-00047-v007 (SLER text) - Complete. See Rev 1.01 of draft

18-0606-01: Dave Baldwin to post revision T11-2018-00047-v003 SLER text with modifications - Complete (See v004)

18-0606-02: David Peterson to update T11-2018-00155-v000 Sequence error diagrams based on current updates to the proposals. – complete (see v001)

18-0606-03: Chair to bring T11-2018-00091-v000 FC-NMVe/AM1 to T11 to request letter ballot. – complete.

18-0606-04: David Peterson to post T11-2018-00129-v002, keep alive text. - complete

18-0207-05: Craig Carlson to propose text for FC-NVMe-2 requirements for Keep Alive – completed by David Peterson (see T11-2018-00129-v000).

18-0207-01: AI: James to post T11/2017-00419-v0004 (Association Termination) - Complete

18-0207-02: AI: Editor to incorporate T11/2017-00419-v0004 and post a new revision of the FC-NVMe-2 draft. – Complete (See rev 1.00)

18-0207-03: David Peterson to post T11-2018-00040-v001 – completed during the meeting.

18-0207-04: Editor to incorporate T11-2018-00040-v001 into the next revision of FC-NVMe-2. – Complete (See Rev 1.00)

18-0116-01: James Smart to update text proposal for disconnection interlock rules and post as T11/2017-00419-v001. See v002. – Complete

17-1205-02: James Smart to prepare a text proposal for covering the results of the discussion around disconnection interlock rules – Complete. See T11/2017-00419-v000.

17-1205-01: Chair to schedule interim conference call to review a text proposal (not yet available) around disconnection interlock. – Complete

18-0131-01: James Smart to update text proposal for disconnection interlock rules and post as T11/2017-00419-v003. – complete.

For action items prior to 12/05/2017, see prior minutes of the 12/06/2017 regular meeting.

## **5. Old business**

None

## **6. Scheduled business**

None

## **7. Unscheduled business**

### ***7.1 RFC Ballot Comment Resolution, T11-2019-00077-v001 (Peterson, Broadcom)***

An RFC ballot concluded with 207 comments, 111 Technical to be resolved. This meeting was dedicated to resolving technical comments.

Dave Baldwin to prepare proposal for disconnect connection (discussion re: Huawei-5 ) and group to evaluate scope of incorporating before completion of FC-NVMe-2.

Comment Huawei-5 complains on effect of terminating a connection on the other connections and the association. Although this is a fact of the standard at this time, there is work ongoing to potentially allow disconnect of a single connection. There was discussion of allowing a new FC-NVMe Link-Control command to do this into FC-NVMe-2, but the scope of such a change (PRLI to allow it, effect on recovery, etc) is unknown. David Baldwin (Broadcom) will prepare a proposal so that the scope can be determined.

## 8 Project Schedule

A project schedule was discussed and results follow.

Milestone	Expected Date
Last technical input	August, 2018
T11 RFC	February, 2019
Forward to INCITS	June, 2019


## 9 Review of Action Items

See 4.2, Review of Old Action Items.

## 10 Meeting Schedule

The chair will request 4 hours at the T11 plenary week for FC-NVMe-2 in La Jolla, CA, June, 2019. An interim conference call will be requested to resolve some of the technical letter ballot comments. Tentative schedule is May 22 at 2–3:30 PM EST.

## 11 Attendance Check and Adjournment

Company 	Name	Role
Broadcom Inc	David Baldwin	Member
Broadcom Inc	Howard Johnson	Member
Broadcom Inc	David Peterson	Member
Broadcom Inc	Steven Wilson	Member
Cisco Systems Inc	Harsha Bharadwaj	Member
Cisco Systems Inc	Mike Blair	Member
Dell Inc	Alan Rajapa	Member

Fujitsu America Inc	Mark Malcolm	Member
IBM Corporation	Patty Driever	Member
IBM Corporation	Roger Hathorn	Member
Marvell Semiconductor Inc	Craig Carlson	Group Chair
Viavi Solutions Inc	Jason Rusch	Member

***Mike Blair (Cisco) moved and Patty Driever (IBM) seconded to adjourn. Approved by acclamation.***

The regular meeting was adjourned at 5:55 PM EST on 10 Apr, 2019.