

Minutes
T11.3 FC-NVME-2 ad hoc work group regular meeting
09 Oct, 2019 – 04:00PM-06:00PM PDT
Coeur D’Alene, ID, USA

The FC-NVME ad hoc work group of the Fibre Channel Protocol (T11.3) Task Group held a regular meeting at Coeur D’Alene, ID on 09 Oct, 2019, hosted by Marvell. Attendance was 14 people from 9 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

1 Opening Remarks

Introductions

Chairperson Craig Carlson (Marvell) opened the regular meeting on Wednesday, 09 Oct, 2019 at 04:00 PM PDT and led a round of introductions and thanked the host (FCIA) 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. 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 09 Oct, 2019 was posted as T11/2019-00274-v000.

Motion: Patty Driever (IBM) moved and David Baldwin (Broadcom) seconded to accept T11/2019-00311-v000 as amended as the agenda for this regular meeting.
Approved by acclamation.

4.0 Past Business

4.1 Review of Minutes

Motion: Patty Driever (IBM) moved and Jason Rousch (Viavi) seconded to accept the following documents as the official minutes for the regular meeting on 14 Aug, 2019 and the interim conference call on 16-Sept, 2019.

Approved by acclamation.

T11/2019-00246-v00.pdf

FC-NVMe-2 Ad Hoc working group meeting minutes for August 14, 2019

T11/2019-00276-v00.pdf

FC-NVMe-2 Ad Hoc working group conference call meeting minutes for Sept 16, 2019

4.2 Review of Old Action Items

Action items carried forward from prior meetings:

19-0814-04: Editor to investigate if there is any normative text about which OX_ID is to be used for retrying a command when a command IU is determined lost. (IBM-r041 comment on lost command IU figure E_2) – complete – resolution in comment database.
19-0916-01: Editor to incorporate slides 4,5,6 of T11-2019-00271v0 as further resolution to comment IBM-Lr01 – Complete (see Rev 1.07)

New action items from this meeting:

19-1006-01: Dave Baldwin to post T11-2019-00271-v03 with modifications for slide 3 device control IU table.
19-1006-02: Editor to incorporate T11-2019-00271-v03 slide 3.
19-1006-03: Dave Baldwin to update post a new proposal as T11-2019-00162v01 to require CONF to be negotiated with SLER and require a target to request CONF on async event requests.

Completed action items from prior meetings:

19-0814-01: Roger Hathorn to post T11-2019-00240-v002 update Device Control IUs proposal - Completed
19-0814-02: Dave Peterson to add IBM-Lr01 to the RFC database, resolved by T11-2019-00240-v0002 - Complete
19-0814-03: Dave Baldwin to add a statement for 4.4.1 to describe differences for behavior related to negotiation of individual I/O connection recovery (i.e., re-state the old recovery requirements). – Complete (see 269v00)

19-0522-01: Roger Hathorn to propose description of NVMeoFC Control IU construct for R_CTL of solicited and unsolicited control using the FC-4 type code and opcode. – **Complete- (T11-2019-00240v1)**
19-0605-01: Editor to incorporate T11-2019-00158-v001 into FC-NVMe-2.- **Complete (rev 1.05)**

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 – **Complete.**

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

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-NVMe/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

5.1 RFC Ballot Comment Resolution, T11-2019-00077-v003 (Peterson, Broadcom)

An RFC ballot concluded with 207 comments, 111 Technical to be resolved. This meeting was dedicated to resolving technical comments. Results and progress are recorded in the RFC Comment database.

Dave Peterson has posted FC-NVMe-2 draft standard rev 1.06 (T11-2019-00210-v001) with all comments to date. 4 open comments remained at the beginning of the meeting. The latest comment DB is (FC-NVMe-2 rev 1.04 RFC ballot database, T11-2019-00077-v005)

5.2 Device Control IU Enhancements (Baldwin, Broadcom) T11-2019-00271v00

David proposed some enhancements and corrections to the recently incorporated Device Control IU structure. In the last meeting all but slide 3 was resolved.

Slide 3 was modified to just add the SR_IU and the SRR_IU as the content of the device control and device control response IUs. Modification will be posted as v03 and incorporated. Action items added.

5.3 Requiring NVMe CONF, T11-2019-00162v00 (Baldwin, Broadcom)

Proposal to require CONF on every command so that long running commands (i.e. async event request) do not have to continuously send FLUSH to detect lost RSP IU.

It was suggested to limit the requirement for a target to request CONF to just the async event request commands.

This is the only remaining open comment (IBM-r020) so the proposal to resolve it will be handled in the T11.3 plenary so that we can move to go to letter ballot.

Motion: Dave Peterson (Broadcom) moved and Roger Hathorn (IBM) seconded to accept T11-2019-00077-v006, as modified as the comment resolution for the RFC letter ballot, minus the final resolution of comment IBM-r020, and to forward FC-NVMe-2 draft standard rev 1.07 (T11-2019-00210-v002) to T11.3 for further processing.

Passed by acclamation.

6. Scheduled business

None

7. Unscheduled business

None

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	December, 2019

9 Review of Action Items

See 4.2, Review of Old Action Items.

10 Meeting Schedule

The chair requested 2 hours at the T11 plenary week for FC-NVMe-2 in New Orleans, LA, December, 2019.

11 Attendance Check and Adjournment

Company 	Name	Role
Broadcom Inc	David Baldwin	Member
Broadcom Inc	Howard Johnson	Member
Broadcom Inc	David Peterson	Int'l. Rep
Broadcom Inc	Steven Wilson	Group Chair

Cisco Systems Inc	Mike Blair	Member
Cisco Systems Inc	J Metz	Member
Dell Inc	Alan Rajapa	Member
Fujitsu America Inc	Mark Malcolm	Member
Hewlett Packard Enterprise	Krishna Babu Puttagunta	Member
IBM Corporation	Patty Driever	Secretary
IBM Corporation	Roger Hathorn	Member
Marvell Semiconductor Inc	Craig Carlson	Vice Chair
NetApp Inc	Frederick Knight	Member
Viavi Solutions Inc	Jason Rusch	Member

***David Peterson (Broadcom) moved and Alan Rajapa (Dell) seconded to adjourn.
Approved by acclamation.***

The regular meeting was adjourned at 5:48 PM PDT on 09 Oct, 2019.