

Minutes

T11.3 FC-NVME-3 ad hoc work group regular meeting

4 October 2022 – 10:00AM-12:00PM CST

Dallas, TX USA

The FC-NVME-3 ad hoc work group of the Fibre Channel Protocol (T11.3) Task Group held a regular meeting at Dallas TX 4 October 2022, hosted by SFF. Attendance was 11 people from 6 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, 4 October 2022 at 9:15AM CST and led a round of introductions and thanked the host (SFF) 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 Code of Conduct

The chair displayed the INCITS Code of Conduct policy:

https://standards.incits.org/apps/group_public/download.php/124850/INCITS-CodeOfConduct.pdf.

2.3 Call for 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.

2.4 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 Administrivia

3.1 Approval of Agenda

An agenda for the FC-NVME ad hoc work group regular meeting 4 October 2022 was posted as T11/2022-00318-v000.

Motion: Roger Hathorn (IBM) moved and Dave Peterson (Broadcom) seconded to accept T11/2022-00318-v000 as the agenda for this regular meeting.

Approved by acclamation.

3.2 Approval of Minutes

The minutes for the previous meeting of Aug 9, 2022 were presented by the chair.

Motion: Roger Hathorn (IBM) moved and Dave Peterson (Broadcom) seconded to accept T11/2022-00254-v000 as the minutes for the prior meeting.

Approved by acclamation.

4.0 Review of Action Items

Action items carried forward from prior meetings:

None

New action items from this meeting:

AI-2022-4: James Smart to post T11-2022-00307-v001 on SLER Qualifier of Zero change.

AI-2022-5: Editor to incorporate T11-2022-00307-v001 in the next revision of the FC-NVMe-3 spec.

Completed action items from prior meetings:

AI-2022-1: Dave Peterson and Craig Carlson to review the use of NVMeoFC term within FC-NVMe-3 – Complete

AI-2022-2: Chair to forward updated project proposal T11/2022-00085-v001 to T11.3 for further processing – completed. Approved by INCITS.

AI-2022-3: Group to review usage of the platform object in terms of specific FC-4 content and determine if a definition for NVMe content is worthwhile. - Completed

5. Old business

5.1 ULP Name Mapping for NVMe T11/2022-00028-v008 Harsha (Cisco)

In April, Harsha presented updated text describing a ULP Name Object for NVMe that contains the NQNs that are associated with the NVMe Port.

In addition, updates to Annex C were proposed to describe when ULP names would be registered, including Subsystem names for targets.

The direction of FC-GS-9 has landed on creating a ULP Server where information about ULPs can be registered. Harsha's proposal has been updated to reflect that change to register NQNs as ULP Name in the ULP Server. He proposed adding a new clause 8 for ULP server registration. Editor suggested we merge with clause 7.

The proposal indicated that this registration shall be done. But it was suggested that this cannot be made mandatory due to the ULP Server being new and current implementations cannot comply. The proposer agreed.

There was discussion on the proposed addition to the Annex C and how it should be done. It ratholed into discussion on the current state of the steps in the annex. The words around the inserted steps need to be updated accordingly. Order of new IULP registration with respect to the other steps also was questioned with no resolution.

The proposal will be updated with the feedback received and discussed again in December.

6. Scheduled business

6.1 SLER Qualifier of Zero (T11-2022-00307-v000)

Smart (Broadcom)

SLER Qualifier confusion – Is SLER Qualifier of zero allowed? No... but not said. Wording was suggested and modified to exclude the value of 0 from SLER qualifiers.

Motion: James Smart (Broadcom) moved and Roger Hathorn (IBM) seconded to accept T11-2022-00307-v000, as modified, into the next revision of FC-NVMe-3

The motion passed by acclamation.

7. Unscheduled business

7.1 FC-NVMe-3 Work Items (T11-2022-00319-v000)

Peterson (Broadcom)

Dave presented a list of potential work items to handle in NVMe-3 based on comments received by various folks. It spurred some good discussion, and the list will be updated.

• Work Items

- ~~Retransmission from non-zero Relative Offset~~
- Terms changed to adhere to NVMe terminology changes
- Address comment(s) on figure D.3 and D.4
 - NVMe Abort and ABTS-LS clarification
- ICDOFF field shall be set to zero
- Metadata/PI data Sequence and segmentation rules
 - is a target allowed to request a transfer length that is not (LBA+PI data) in length or aligned on a (LBA+PI) boundary ?
 - Is it ok for LBA data to be split across frames ?
 - Is it ok for metadata to be split across frames ?
- First burst enhancements ?
- Clarify XFER_RDY offset, PARAMETER values, and FC4VALUES in FLUSH are based on bytestream (LBA+metadata) and not just LBA data ? (assuming we all agree that's true)
- Updates based on NVMe DIF changes (incl DIF Hints)
 - Examples: bigger PI data, different CRC algorithms, *etc*
- Consideration of any other changes in NVMe base spec
- NQNs via Server *etc...*

8 Project Schedule

A project schedule was discussed, and dates remain TBD. It is anticipated to be approximately a two year project.

Milestone	Expected Date
Last technical input	Dec 2023
T11 RFC	Apr 2024
Forward to INCITS	TBD

9 Review of Action Items

See 4.0, Review of Action Items.

10 Meeting Schedule

The chair requested 2 hours at the T11 plenary week for FC-NVMe-3 in Deerfield Beach, FL, December, 2022.

11 Attendance Check and Adjournment

The following is the recorded attendance for this meeting.

Company 	Name	Role
Broadcom Inc	Howard Johnson	Member
Broadcom Inc	David Peterson	Member
Broadcom Inc	James Smart	Member
Cisco Systems Inc	Harsha Bharadwaj	Member
Cisco Systems Inc	Mike Blair	Member
Cisco Systems Inc	Edward Mazurek	Member
Hewlett Packard Enterprise	Barry Maskas	Member
IBM Corporation	Patty Driever	Member
IBM Corporation	Roger Hathorn	Member
Marvell Semiconductor Inc	Craig Carlson	Group Chair
NetApp Inc	Frederick Knight	Member

Howard Johnson (Broadcom) moved and Ed M (Cisco) seconded to adjourn. Approved by acclamation.

The regular meeting was adjourned at 11:48AM CST on 4 October 2022.