The FC-NVME-3 ad hoc work group of the Fibre Channel Protocol (T11.3) Task Group held a regular meeting at Albuquerque, NM 02 Aug 2023, hosted by Cisco. Attendance was 11 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

1 Opening Remarks

Introductions
Chairperson Craig Carlson (Marvell) opened the regular meeting on Wednesday, 02 Aug 2023 at 9:05AM MT and led a round of introductions and thanked the host (Cisco) 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
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-3 ad hoc work group regular meeting 02 Aug 2023 was posted as T11/2023-00246-v000.

Motion: Dave Peterson (Broadcom) moved and Ed Mazurek (CISCO) seconded to accept T11/2023-00246-v000 as the agenda for this regular meeting.
Approved by acclamation.

3.2 Approval of Minutes

The minutes for the previous meeting of June 14, 2023 were presented by the chair.
Motion: Dave Peterson (Broadcom) moved and Pattie Driever (IBM) seconded to accept T11/2023-00210-v000 as the minutes for the prior meeting.

Approved by acclamation.

4.0 Review of Action Items

Action items carried forward from prior meetings:
AI-2022-5: Editor to incorporate T11-2022-00307-v001 in the next revision of the FC-NVMe-3 spec
-Complete. See T11- 2023- 00164-v001 Rev 0.03 June 16.
AI-2022-6: Editor to incorporate T11-2022-00381-v001 (ICDOFF) into the next revision
-Complete. See T11- 2023- 00164-v001 Rev 0.03 June 16.
AI-2023-1: Editor to incorporate T11/2023-00034-v000 (ULP Name Mapping)
-Complete. See T11- 2023- 00164-v001 Rev 0.03 June 16.
AI-2023-4: Editor to incorporate T11-2023-00060-v002 on RSCN text
-Complete. See T11- 2023- 00164-v001 Rev 0.03 June 16.
AI-2023-7: Dave Peterson to post T11-00179-v002 for definition of ULP Name Types.
-Complete.
AI-2023-8: Editor to incorporate T11-00179-v002 for definition of ULP Name Types.
-Complete. See T11- 2023- 00164-v001 Rev 0.03 June 16.

New action items from this meeting:
AI-2023-9: Editor to post T11-2023-0145-v002 with the results of this discussion.
AI-2023-10: Editor to remove figures D3 and D4 from the annex in the next revision.

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
AI-2022-4: James Smart to post T11-2022-00307-v001 on SLER Qualifier of Zero change. – Complete
AI-2022-6: David Peterson to post T11-2022-00381-v001 on ICDOFF setting – Complete
AI-2023-2: Harsha Bharadwaj to Look at FC-4 feature addition to ULP object.
– complete (see FC-GS-9)
AI-2023-3: Fred Knight to post T11-2023-00060-v002 (RSCN text changes). - posted
AI-2023-5: Dave Peterson to investigate if the exchange recovery associated with NVMe Abort recovery is adequately covered in the normative text (see T11-2023-00145-v000, D.2, D.3) – Complete (see work items T11-0145-v001)
AI-2023-6: Dave Peterson and Harsha Bharadwaj to investigate use of something other than FC-4 features to identify the NQN type to avoid confusion. – Complete (ULP Name Object)

5. Old business

5.1 FC-NVMe-3 Work Items  

(Peterson (Broadcom)  

(T11-2023-00145-v001) 

This is a running document “to do” list.

Discussion on the following issue continued from the June meeting:
Figures D.2, D.3 show an NVMe Abort recovery scenario (without SLER), but it does not show any exchange recovery. Does the normative text adequately cover this scenario and explain how the exchange should be recovered?
Dave investigated the text and found a vague statement that “if an error is detected, may send an ABTS”. But the proposal was to remove D2 and D3, rather than fix it. There was opposition to this because it does not solve the issue.

There was objection by Roger Hathorn (IBM) that, rather than fix the problem, the proposal is to just delete the figures and sweep the problem under the rug. The recovery for this scenario is not adequately explained in normative text and it is a scenario where an exchange will be left open indefinitely if the upper layer NVMe does not result in termination of the connection. There is nothing in the normative text that indicates that the initiator will close or abort this exchange. A vote was eventually requested.

Motion: Dave Peterson (Broadcom) moved and Craig Carlson (Marvell) seconded to remove figures D3 and D4 in annex D without any further updates.  

Motion passed 4-1-2.

AI: Editor to post T11-2023-0145-v002 with indicating resolution is to remove figures D3 and D4.
AI: Editor to remove figures D3 and D4 from the annex in the next revision.

6. Scheduled business

None

7. Unscheduled business

None

8 Project Schedule

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

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Expected Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last technical input</td>
<td>Dec 2023</td>
</tr>
</tbody>
</table>
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 TBD, June 2023.

11 Attendance Check and Adjournment
The following is the recorded attendance for this meeting.

<table>
<thead>
<tr>
<th>Company</th>
<th>Name</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broadcom Inc</td>
<td>Howard Johnson</td>
<td>Member</td>
</tr>
<tr>
<td>Broadcom Inc</td>
<td>David Peterson</td>
<td>Member</td>
</tr>
<tr>
<td>Broadcom Inc</td>
<td>James Smart</td>
<td>Member</td>
</tr>
<tr>
<td>Cisco Systems Inc</td>
<td>Mike Blair</td>
<td>Member</td>
</tr>
<tr>
<td>Cisco Systems Inc</td>
<td>Edward Mazurek</td>
<td>Member</td>
</tr>
<tr>
<td>Dell Inc</td>
<td>David Brown</td>
<td>Member</td>
</tr>
<tr>
<td>Hewlett Packard Enterprise</td>
<td>Barry Maskas</td>
<td>Member</td>
</tr>
<tr>
<td>IBM Corporation</td>
<td>Patty Driever</td>
<td>Member</td>
</tr>
<tr>
<td>IBM Corporation</td>
<td>Roger Hathorn</td>
<td>Member</td>
</tr>
<tr>
<td>Marvell Semiconductor Inc</td>
<td>Craig Carlson</td>
<td>Group Chair</td>
</tr>
<tr>
<td>Viavi Solutions Inc</td>
<td>Jason Rusch</td>
<td>Member</td>
</tr>
</tbody>
</table>

Dave Peterson (Broadcom) moved and Pattie Driever (IBM) seconded to adjourn. Approved by acclamation.

The regular meeting was adjourned at 9:42AM MT on 02 Aug 2023.