Minutes
T11.3 FC-NVME-3 ad hoc work group regular meeting
14 June 2023 – 9:00AM-10:00AM MDT
Palm Beach Gardens, FL USA

The FC-NVME-3 ad hoc work group of the Fibre Channel Protocol (T11.3) Task Group held a regular meeting at Coeur D’Alene, ID, 14 June 2023, hosted by Broadcom. Attendance was 12 people from 8 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, 14 June 2023 at 9:05AM EST and led a round of introductions and thanked the host (Marvell) 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 14 June 2023 was posted as T11/2023-00144-v000.

Motion: Dave Peterson (Broadcom) moved and Pattie Driever (IBM) seconded to accept T11/2023-00144-v000 as the agenda for this regular meeting. Approved by acclamation.

3.2 Approval of Minutes

The minutes for the previous meeting of April 4, 2023 were presented by the chair.
Motion: Dave Peterson (Broadcom) moved and Pattie Driever (IBM) seconded to accept T11/2023-00133-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
   – Carry (incorporated, but new revision not yet posted).
AI-2022-6: Editor to incorporate T11-2022-00381-v001 (ICDOFF) into the next revision
   – Carry (incorporated, but new revision not yet posted).
AI-2023-1: Editor to incorporate T11/2023-00034-v000 (ULP Name Mapping)
   – Carry (complete, but not posted).
AI-2023-4: Editor to incorporate T11-2023-00060-v002 on RSCN text
   – Carry, done but new rev not posted.

New action items from this meeting:
AI-2023-7: Dave Peterson to post T11-00179-v001v2 for definition of ULP Name Types.
AI-2023-8: Editor to incorporate T11-00179-v001v2 for definition of ULP Name Types.

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. The following observation was discussed:

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. James Smart was not here to weigh in, so the discussion was deferred to the next meeting to give him a chance to explain is view (he made the initial comment).

6. Scheduled business

None

7. Unscheduled business

7.1 ULP Name Object

**(T11-2023-00179-v001) Peterson (Broadcom) / Bharadwaj (Cisco)**

In order to be able to identify the type of NQN being registered as the ULP Name, it was originally proposed to set only 1 of the FC-4 features bits in the object – Initiator for Host NQN, target for Subsystem NQN, etc. There was opposition to this because it then may not match what the port has registered in the Nameserver. Many said it just doesn’t matter. It was recommended that we look at defining a new ULP Name descriptor type in FC-GS-9 rather than trying to re-use the FC-4 features definition.

FC-GS-9 has added a ULP Name Type field to the ULP Name object. The values are to be specified by the FC-4.

This proposal from Dave Peterson and Harsha Bharadwaj defines the values of the name types and the rules for setting them.

**Motion: Dave Peterson (Broadcom) and Barry Maskas (HPE) seconded to incorporate T11-00179-v001, as modified, into the next revision of the draft standard.**

Approved by acclamation.

AI: Dave Peterson to post T11-00179-v001v2 for definition of ULP Name Types.

AI: Editor to incorporate T11-00179-v001v2 for definition of ULP Name Types.
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>
<tr>
<td>T11 RFC</td>
<td>Apr 2024</td>
</tr>
<tr>
<td>Forward to INCITS</td>
<td>TBD</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>Cisco Systems Inc</td>
<td>Harsha Bharadwaj</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>NetApp Inc</td>
<td>Frederick Knight</td>
<td>Member</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 9:51AM EST on 14 June 2023.