Minutes
T11.3 FC-RDMA ad hoc work group regular meeting
4 April 2023 – 9:00AM-10:00AM MDT
Tucson, AZ

The FC-RDMA ad hoc work group of the Fibre Channel Protocol (T11.3) Task Group held a regular meeting in Coeur d’Alene, ID on 4 April 2023, hosted by Broadcom. Attendance was 10 people from 6 organizations and is tabulated at the end of this document.

Roger Hathorn (IBM) (rthorn@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 4 April 2023 at 09:05 AM PST and led a round of introductions and thanked the host (Broadcom) for providing the meeting facilities.

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 indicated that among the rules and policies under which this working group operates is the INCITS Code of Conduct policy: https://standards.incits.org/apps/group_public/download.php/124850/INCITS-CodeOfConduct.pdf.
2.3 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 Administrivia

3.1 Approval of Agenda
An agenda for the FC-RDMA ad hoc work group regular meeting 4 April 2023 was posted as T11-023-00129-v000.

Motion: David Peterson (Broadcom) moved and Ed Mazurek(Cisco) seconded to accept T11/2023-00129-v000 as the agenda for this regular meeting.
Approved by acclamation.

3.2 Review of Minutes
Motion: David Peterson (Broadcom) moved and Ed Mazurek(Cisco) seconded to accept the following document as the official minutes for the previous regular meeting
Approved by acclamation.

T11-2022-00050-v000.pdf
FC-RDMA Feb 7, 2023 Ad-hoc Meeting Minutes
4 Review of Old Action Items

Action items carried forward from prior meetings:

New action items from this meeting:
AI-2023-2: Group to read chapter 12 of Infiniband spec rev 1.7 (ibta.org) to understand Communication Management.

Completed action items from prior meetings:
2021-1: David Peterson to forward project proposal for FC-RDMA name change to T11 for further processing. – Closed
2022-2: Dave to put together an RDMA tutorial, or find an existing one, including terminology for those not familiar with RDMA protocol
   - Complete in Dec, 2022 but deferred to Feb. ‘23
AI 2022-3: Dave Peterson (Broadcom) to post a draft a copy of T11/2022-00374-v000 as initial draft of FC-RDMA. – Complete
AI 2023-1: Dave Peterson (Broadcom) to post an update to T11/2023-00042-v000 to fix the provided links to tutorials – complete.

5. Old business

5.1 FC-RDMA Draft Standard Development
T11/2023-00043-v001 Peterson (Broadcom)

These charts outline the scope of work for the development of the standard.
Items discussed today:
Communication Management model
Messages are MADs – Management Datagrams
There is a list of messages to consider in the deck.
It is being suggested that we map these to FC-RDMA FC-4 LS
“MRA” is an option for acknowledgement. Will we need it?
Should we use class-2 for RDMA FC-4 Link Services?
Request for Communication/Reply to request/Ready to Use – example of control request.
It is unclear whether this sequence would be on one exchange for all 3 messages or one for the req/rep and one for the Ready to use.
There are 3 options for handing BTH/MAD requests:
a) Terminate BTH/MAD at initiator and convert to something FC, where needed.
b) Tunnel them in FC4-LS
c) Tunnel them in CMD_IU
Dave recommends B, and the group generally agrees.

Discussion on encapsulating all control requests into one set of FC-4 LS with subcommands, or to individual LS for each control request.

Homework: Read chapter 12. Infiniband specification 1.7. ibta.org.
Prepare for next time:
Discussion on ERSP and what goes in it.

5.2 Base Draft

*5.2 Base Draft*
*T11/2022-00374-v000 Peterson (Broadcom)*

David produced a base spec with an outline and basic boilerplate content. This was not discussed at this meeting.

5.3 RDMA 101 – Round 2 – a tutorial

*5.3 RDMA 101 – Round 2 – a tutorial*
*T11/2023-00042-v000 Peterson (Broadcom)*

RDMA Basics, Fundamentals. It contains some links for further detailed educational materials that are available to learn more.

6. Scheduled business

None

7. Unscheduled business

None

8. Project Schedule

A project schedule was discussed, and results follow.

<table>
<thead>
<tr>
<th>milestone</th>
<th>expected date</th>
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<tbody>
<tr>
<td>last technical input</td>
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</tr>
<tr>
<td>T11 RFC</td>
<td>TBD</td>
</tr>
<tr>
<td>forward to INCITS</td>
<td>TBD</td>
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9. Review of Action Items

See 4, Review of Action Items.

10. Meeting Schedule

The chair will request 2 hours at the T11 plenary week for FC-RDMA in TBD. No interim conference calls will be scheduled.

11. Attendance Check and Adjournment

<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>
</tbody>
</table>
Motion:
David Peterson (Broadcom) moved and Patty Driever (IBM) to adjourn. Approved by acclamation.
The regular meeting was adjourned at 10:42AM PST on 4 April 2023.