

T11.3 FC-LS-5 Ad Hoc Working Group Regular Meeting Minutes 6 October 2020 – 11:00 AM to 1:20 PM CDT Virtual Meeting

The FC-LS-5 ad hoc work group of the Fibre Channel Protocol (T11.3) Task Group held a virtual meeting on 6 October 2020, with Zoom meetings hosted by Marvell. Attendance was 15 people from 10 organizations and is tabulated at the end of this document.

Minutes were taken by Jason Rusch (Viavi Solutions) (jason.rusch@viavisolutions.com). Please report any corrections by email to the T11.3 reflector at T11_3@mail.T11.org.

1 Opening Remarks and Introductions

Chairperson Patty Driever (IBM) opened the virtual meeting on Tuesday, 6 October 2020 at 11:00 AM CDT. She led a round of introductions and thanked our virtual host organization, Marvell.

1.1 Attendance and Membership

The chair explained that attendance is recorded electronically at <http://www.incits.org>, 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. She 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.

1.2 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 slides 1-3 of http://www.incits.org/patent_slides.pdf. She 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.

1.3 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 she 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/standards-information/legal-info>.

2.0 Approval of Agenda

An agenda for the FC-LS-5 ad hoc work group regular meeting 6 October 2020 was posted as T11-2020-00224-v000.

Dave Peterson (Broadcom Inc) moved and Mark Malcom (Fujitsu) seconded to accept T11-2020-0224-v000 as modified as the agenda for this regular meeting. Approved by acclamation.

3.0 Review of Past Business

3.1 Review of Minutes

Minutes for the FC-LS-5 ad hoc work group regular meeting 11 August 2020 have been posted as T11-2020-00181-v000.

Howard Johnson (Broadcom Inc) moved and Mark Malcolm (Fujitsu) seconded to accept T11-2020-00181-v000 as the official minutes for the regular meeting on 11 August 2020. Approved by acclamation.

3.2 Review of Old Action Items

Action items carried forward from prior meetings:

2006-01 Editor to incorporate T11-2020-00085-v000. [Carry]

New action items from the previous meeting:

2008-01 Editor to incorporate T11-2020-00013-v004. [Carry]

2008-02 Editor to incorporate T11-2020-00109-v003. [Carry]

4 Old Business

4.1 Fabric Controller and FLOGI

[T11-2020-00126-v004]

Peterson (Broadcom Inc)

Dave recapped the feedback from the previous meeting and highlighted the proposed changes to Table 9, including the additions of RDP and RLS. Both were set to not requiring N_Port Login (footnote C). After discussion, RLS was changed to Yes with footnote C. RRQ was discussed at length, and Dave will review whether it should stay as N_Port Login not required.

The group also suggested that the N_Port Login required column is insufficient for this table. Dave will investigate how to differentiate between N-Port to N-Port communication and N-Port to a Fabric port/controller communication. He will review feedback and present an update at a future meeting cycle.

5 New Business

5.1 FC LAG Control Plane

[T11-2020-00220-v000]

Bharadwaj (Cisco)

Harsha continued the discussion from prior meetings on the FC-LAG control pane proposal. He provided a quick summary of the precious discussion, including minimalizing architectural changes required for N-Ports to support FC_LAG and then revisited the FC_LAG Data Plane.

The proposal that OX_ID is used to remember which LAG member was picked by the original exchange was rejected by the group, as it requires new hardware capability to support. There was an active discussion and the group provided feedback on the updated proposal which Harsha will review. The discussion will continue at a future meeting.

5.2 End-to-end encryption protection

[T11-2020-00223-v000]

Carlson (Marvell)

Craig introduced the proposal with an overview of the current encryption process and explained how it is possible for a data corruption to occur during the process. T10 DIF and NVMe Protection Information are FC-4 features, and the goal is to have Transport level end-to-end protection.

He then gave an overview of a proposed solution including an updated frame format which would add a 16-bit CRC to ESP padding. The solution would be optional and backward compatible with existing implementations. The group agreed with this proposal, and further details and supporting text will be provided at a future meeting.

6 Unscheduled Business

None.

7 Project Schedule

Milestone	Expected Date
Last technical input	October 2020
RFC Ballot	TBD
T11 Letter Ballot	TBD
Forward to INCITS	TBD

8 Review of Action Items

Action items carried forward from prior meetings:

- 2006-01** Editor to incorporate T11-2020-00085-v000.
- 2008-01** Editor to incorporate T11-2020-00013-v004.
- 2008-02** Editor to incorporate T11-2020-00109-v003.

New action items from this meeting:

None.

9 Future Meeting Schedule

9.1 Interim Conference Call

None.

9.2 Next Plenary Week

Request 3 hours for FC-LS-5 at the Virtual T11 plenary week December 7-11, 2020.

10 Adjournment

Dave Peterson (Broadcom Inc) moved and Mark Malcolm (Fujitsu) seconded to adjourn. Approved by acclamation.

The regular meeting was adjourned at 1:20 PM CDT on 6 October 2020.

11 Attendance

Organization	Representative	Member Company
Broadcom Inc	Howard Johnson	Member
Broadcom Inc	David Peterson	Member
Broadcom Inc	James Smart	Member
Broadcom Inc	Anil Veerabhadrapa	Member
Cisco Systems Inc	Harsha Bharadwaj	Member
Cisco Systems Inc	Mike Blair	Member
CommScope	Gary Gibbs	Member
Dell Inc	Vinay Sawal	Member
Fujitsu America Inc	Mark Malcolm	Member
Hewlett Packard Enterprise	Barry Maskas	Member
IBM Corporation	Patty Driever	Group Chair
IBM Corporation	Roger Hathorn	Member
Marvell Semiconductor Inc	Craig Carlson	Project Editor
NetApp Inc	Frederick Knight	Member
Viavi Solutions Inc	Jason Rusch	Secretary