

Minutes

T11.3 FC-FS-7 ad hoc work group regular meeting

06 December 2023 – 04:00PM – 05:00PM EST

Deerfield Beach, FL (Hybrid)

The FC-FS-7 ad hoc work group of the Fibre Channel Protocol (T11.3) Task Group held a regular meeting in Deerfield Beach, FL hosted by Amphenol along with virtual conferencing facilities using the Zoom platform on 06 December 2023. Attendance was 10 people from 6 organizations and is tabulated at the end of this document.

Minutes were taken by Patty Driever (IBM) (pgd@us.ibm.com). Corrections may be requested either before the subsequent meeting by email to pgd@us.ibm.com or at the subsequent meeting in person.

1 Opening remarks & Introductions

Chairperson Raul Oteyza (Marvell) opened the regular meeting Wednesday, 06 December 2023 at 4:14 PM EST. He thanked our in-person host organization, Amphenol, and then led a round of introductions.

1.1 Attendance and Membership

The chair explained that attendance is recorded electronically at 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. 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.

1.2 Code of Conduct

The chair referenced the INCITS Code of Conduct and suggested everyone become familiar with its content. It can be found on the INCITS website at the following link: [INCITS Code of Conduct](#).

It will be reviewed at the plenary meetings and referenced in all Expert Group meetings.

1.3 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.

1.4 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.

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>.

2 Approval of Agenda

An agenda for the FC-FS-7 ad hoc work group regular meeting 06 December 2023 has been posted as T11-2023-00371-v003.

Dave Peterson (Broadcom) moved and Ed Mazurek (Cisco) seconded to accept T11-2023-00371-v003 as modified as the agenda for this regular meeting. Approved unanimously.

3 Review of Past Business

3.1 Review of Minutes

Minutes for the FC-FS-6 ad hoc work group regular meeting 04 October 2023 have been posted as T11/2023-00338-v000.

Dave Peterson (Broadcom) moved and DJ Brown (Dell) seconded to accept T11/2023-00338-v000 as the minutes of the FC-FS-6 ad hoc work group meeting on 04 October 2023. Approved unanimously.

3.2 Review of Old Action Items

Action Items Carried Forward:

None

New Action Items Identified Last Meeting:

None

4 Old Business

4.1

5.0 New Business

5.1 Obsolete Loop (T11-2023-00383-v000) Peterson (Broadcom)

Dave reviewed text changes he suggests we make to obsolete arbitrated loop. We reviewed Clause 8 at the joint meeting where we agreed to remove slow_wait from the state machine diagram. Dave reviewed other parts of the spec that need to be stricken.

5.2 Single Lane 256GFC Link Speed Negotiation (T11-2023-00385-v000) Oteyza (Marvell)

Raul made a presentation on advertising single lane 256GFC during Link Speed Negotiation. Background: FC spec says we can negotiate between up to 4 speeds, but the reality is that we limit it to 3 speeds. In speed training we lock not only to frame markers but also to extended markers because there is an opportunity for false locks on lower speed frames...small chance, but still a chance. Frame lock requires 2 occurrences of Frame Marker + Extended Marker. We lose lock with 5 consecutive invalid frame markers + extended markers. Options to lock at 256GFC were to either 1) use 28.05 Gbaud NRZ with Extended Marker value of 00 or 2) use 28.05 Gbaud NRZ with Extended Marker value of 00. Option 1 is minimal change except to accept new Extended Marker. But requires support for 4 speeds. And Raul showed why we shouldn't be able to get a false lock. Option 2 uses 56.1Gbaud NRZ with Extended Marker set to 00. This higher frequency would likely require more changes on the SERDES and other components. Same protection from false locks. Group is leaning towards option 1 right now, but need to determine if it can be done.

6 Unscheduled Business

6.1 Clock Synchronization discussion Peterson (Broadcom)

Dave suggested that no one is using this feature (clock synch services), so we can remove the relevant clause in FC-FS and the associated Link Service commands in FC-LS.

6.2 8b/10b discussion Peterson (Broadcom)

Dave would like to remove this from FC-LS-7 also, but a concern was expressed that we shouldn't do that until at least 64GFC is the predominant technology in the field. Dave is okay with that.

7 Project Schedule

Milestone	Expected Date
Last technical input	June 2025
RFC Ballot	December 2025
T11 Letter Ballot	August 2026
Forward to INCITS	October 2026

8 Review of Action Items

Action Items Carried Forward:

None

New Action Items:

None

9 Meeting Schedule

9.1 Next Plenary Week

Request 2 hours for FC-FS-7 at the hybrid face-to-face/virtual T11 plenary week 05 February – 09 February 2024 in location TBD (to be discussed at plenary).

10 Adjournment

Dave Peterson (Broadcom) moved to adjourn, seconded by Ed Mazurek (Cisco). Approved unanimously.

The regular meeting was adjourned at 05:28 PM EST on 06 December 2023.

11 Attendance

Organization

Representative

T11.3 Member Company

BROADCOM LIMITED	Howard Johnson	Y
BROADCOM LIMITED	David Peterson	Y
BROADCOM LIMITED	James Smart	Y
CISCO SYSTEMS INC	Harsha Bhadawaj	Y
CISCO SYSTEMS INC	Ed Mazurek	Y
DELL INC	David Brown	Y
HEWLETT PACKARD ENTERPRISE	Barry Maskas	Y
IBM	Patty Driever	Y
IBM	Roger Hathorn	Y
MARVELL SEMICONDUCTOR	Raul Oteyza	Y