

Minutes
T11.3 FC-GS-8 ad hoc work group regular meeting
09 April 2019 – 1:30PM – 4:00PM EST
Boca Raton, FL, USA

The FC-GS-8 ad hoc work group of the Fibre Channel Protocol (T11.3) Task Group held a regular meeting at Boca Raton, FL on 09 April 2019, hosted by Amphenol. Attendance was 14 people from 8 organizations and is tabulated at the end of this document.

Minutes were taken by Patty Driever (IBM) (pgd@us.ibm.com). Please report any corrections by email to the T11.3 reflector at T11_3@mail.T11.org.

1 Opening remarks & Introductions

Chairperson Dave Peterson (Broadcom) opened the regular meeting Tuesday, 09 April 2019 at 01:42 PM EST. He thanked our host organization, Amphenol, and 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 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.

1.3 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 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>.

2 Approval of Agenda

An agenda for the FC-GS-8 ad hoc work group regular meeting 09 April 2019 has been posted as T11-2019-00087-v000.

Howard Johnson (Broadcom) moved and Mike Blair (Cisco) seconded to accept T11-2019-00087-v000 as the agenda for this regular meeting. Approved unanimously.

3 Review of Past Business

3.1 Review of Minutes

Minutes for the FC-GS-8 ad hoc work group regular meeting 05 February 2019 have been posted as T11/2019-00035-v001.

Jason Rush (Viavi) moved and Mike Blair (Cisco) seconded to accept T11/2019-00035-v001 as the minutes of the FC-GS-8 ad hoc work group meeting on 05 February 2019. Approved unanimously.

3.2 Review of Old Action Items

Action Items Carried Forward From Prior Meetings:

2018-12-01 Editor to incorporate 2018-00329-v000. (**COMPLETE** with posting of FC-GS-8 version 11.05 as 2018-00107-v002))

New Action Items Identified Last Meeting:

2019-02-01 Jason to post 2019-00012-v001 with updates agreed to today (**COMPLETE**)

2019-02-02 Editor to incorporate 2019-00012-v002 (**COMPLETE** with posting of FC-GS-8 version 11.05 as 2018-00107-v002))

4 Old Business

4.1 How Low Can You Go? (2019-00014-v001) Johnson (Broadcom)

Howard did another follow-up on the proposal to add queue depths to FDMI. He presented some options, with the intent to solicit feedback on how to proceed.

Situation is one where a performance problem is being experienced, and there is a need to ensure the SAN admin has the tools to determine what's going on and address the situation. Howard wanted to look at the info available today, and whether it makes sense to extend that by depositing more info into the SAN that could be coalesced and reported to the SAN admin.

Patty raised the question of the value of this static 'max possible' info in diagnosing performance problems, versus the value of 'real time' data of what's occurring at the ports. Howard agreed, but feels there is still value in these administratively configured values.

Howard showed an example of how to add new FDMI port attributes. However the attributes can be different for different target or initiator ports, and others different for each LUN---which breaks the current FDMI model.

All in all there is much to do here. It was agreed that this will take significant effort and will likely be a part of FC-GS-9.

5.0 Scheduled Business

5.1 Updating EUI-64 and Company_ID text (2019-00081-v001) Rusch (Viavi)

Based on Ralph's updates in FC-FS-6 relative to WW names Jason did a look to see what FC-GS says on this topic.

In Fabric Configuration Server, the 'platform' object has a 'platform name type' Jason asked Ralph to take a look at the wording there, which he did, and suggested some editorial changes to match current IEEE terminology. Jason reviewed the proposed changes with everyone. Dave Peterson (Broadcom) made a motion, seconded by Jason Rusch (Viavi) to incorporate 2019-00081-v001 in to FC-GS-8. Motion passed unanimously.

5.2 An Approach to Handle Congestion in FCUpdating EUI-64 and Company_ID text (2019-00095-v000) Rusch (Viavi)

Harsha has a new proposal on how we might handle FC congestion. He started by reviewing FC end-to-end flow control with Class1&2. Class3 is subject to congestion because fabric holds frames in a slow-drain device situation. The impact is that well behaved flows often pay a penalty for sharing the fabric with poorly behaved devices.

Generally problems are caused by one of two conditions.....1) slow release of BB credits or stuck or lost credits and 2) speed mis-matched devices or microbursts (or some form of oversubscription). We have ways to deal with lost credits, but not really with oversubscription or stuck credits.

#1 is easier to detect than #2....the second often requires correlation of data across multiple ports.

Harsha asserted you must detect the condition, then maintain the info and distribute it somehow, and then mitigate the situation. He proposed that detection may or may not be standardize-able,

mitigation is likely to be implementation specific (although this met with some disagreement), but the notification and means to query it are things we could and show standardize.

Howard asserted that fabric notification mechanism was defined already – FPIN. The difference in what Harsha is requesting is that if a congestion event occurred and still exists when a new device logs in to the fabric it can be notified of this situation. Harsha’s proposal is to use the Name Server, with ‘congestion’ as an operational attribute of a device. An endpoint could query for devices with such attributes. Name Server today tends to operation on static attributes...this is dynamic. He also proposed using a new RSCN ‘Congestion’ event or a new ELS for Congestion status change and registration. Others suggested the enhancing the FPIN proposal to cover new devices entering the fabric is a better way to go. For congestion notification, the situation is really already handled, as if the congestion remains, the new device will hear about it soon enough. In the case of ‘link integrity’ issues, Howard needs to give this more thought on how to handle. But the problem Harsha was trying to solve is understood.

6 Unscheduled Business

7 Project Schedule

| Milestone | Expected Date |
|----------------------|----------------------|
| Last technical input | October 2018 |
| RFC Letter Ballot | April 2019 |
| T11 Letter Ballot | August 2019 |
| Forward to INCITS | October 2019 |

Per the above schedule, Dave Peterson (Broadcom) made a motion, seconded by Jason Rusch (Viavi) to recommend T11.3 to request INCITS initiate an RFC ballot on FC-GS-8 version 11.06 as documented in T11-2019-00103-v000. Motion passed 8-0-0.

8 Review of Action Items

Action Items Carried Forward:

None

New Action Items:

2019-04-01 Editor to incorporate 2019-00081-v001 into FC-GS-8

2019-04-02 Editor to post new draft (version 11.06) of FC-GS-8 (T11-2019-00103-v000)

2019-04-03 GS-8 chair to recommend to T11.3 to request INCITS initiate an RFC ballot on FC-GS-8 as documented in 2019-00103-v000

2019-04-04 FC-GS-8 chair to generate project proposal for FC-GS-9.

9 Meeting Schedule

9.1 Next Plenary Week

Request 4 hours for FC-GS-8 at the T11 plenary week in La Jolla, CA, 03 June - 07 June 2019.

10 Adjournment

Mark Malcolm (Fujitsu) moved and Howard Johnson (Broadcom) seconded to adjourn. Approved unanimously.

The regular meeting was adjourned at 03:54 PM EST on 09 April 2019.

11 Attendance

| Organization | Representative | T11.3 Member Company |
|-----------------------|------------------|----------------------|
| BROADCOM LIMITED | David Baldwin | Y |
| BROADCOM LIMITED | David Peterson | Y |
| BROADCOM LIMITED | Howard Johnson | Y |
| BROADCOM LIMITED | Steven Wilson | Y |
| CISCO SYSTEMS INC | Mike Blair | Y |
| CISCO SYSTEMS INC | Harsha Bharadwaj | Y |
| DELL INC | Alan Rajapa | Y |
| DELL INC | DJ Brown | Y |
| FUJITSU AMERICA | Mark Malcolm | Y |
| IBM | Patty Driever | Y |
| IBM | Roger Hathorn | Y |
| MARVELL SEMICONDUCTOR | Raul Oteya | Y |
| NETAPP | Frederick Knight | Y |
| VIAVI SOLUTIONS | Jason Rusch | Y |

