IEEE P802.3by Task Force Informal Communication

Source:	IEEE P802.3by Task Force[1]	
To:	Dal Allen	SFF Committee Chair endlcom@acm.org
CC:	Paul Nikolich	Chair, IEEE 802 LMSC p.nikolich@ieee.org
	Adam Healey	Vice-chair, IEEE 802.3 Ethernet Working Group adam.healey@avagotech.com
	Pete Anslow	Secretary, IEEE 802.3 Ethernet Working Group panslow@ciena.com
	David Law	Chair, IEEE 802.3 Ethernet Working Group dlaw@hp.com
From:	Mark Nowell	Chair, IEEE P802.3by 25 Gb/s Task Force mnowell@cisco.com
Subject:	Informal Communication, Direct Attach Cable Identification	
Approval:	Agreed to in IEEE P802.3by Task Force meeting, Pittsburgh, PA, TBDth May 2015	

Dear Dal,

The IEEE P802.3by Task Force is in the process of defining physical layer specifications for 25Gb/s transmission over copper cabling and multi-mode fiber-optic cabling. We anticipate the use of SFP-28 and QSFP-28 form factors in the use of our standard, and thus appreciate the potential industry benefit to having close communications with the SFF organization.

In the process of developing our specification, we have three different cable types that we intend to support, each requiring a different level of Forward Error Correction (FEC) to ensure performance. To minimize latency, it's desired that we have a means to identify each of these types and adjust our Auto-Negotiation advertisements accordingly.

Our Task Force has determined that a few bits within SFF register sets that identify the type of cable (for Passive DACs) and a bit that identifies compliance to our Annex 109B (for Active DACs) would be very helpful. While we are only requesting feedback on this, we have people within SFF who have looked at the register maps and offered proposed bit mapping to make our request very clear.

[1] This document solely represents the views of the IEEE P802.3by Task Force, and does not necessarily represent a position of the IEEE, the IEEE Standards Association, IEEE 802 or IEEE 802.3 Working Group.

For SFF-8472 the following bit map changes are requested:

TABLE 8-1 PASSIVE CABLE SPECIFICATION COMPLIANCE (A0H BYTE 8 BIT 2 SET)

A0h	Bit	Description	A0h	Bit	Description
60	7	Compliant to CA-S	61	7	Unallocated
60	6	Compliant to CA-N	61	6	Unallocated
60	5	Reserved for SFF-8461	61	5	Unallocated
60	4	Reserved for SFF-8461	61	4	Unallocated
60	3	Reserved for SFF-8461	61	3	Unallocated
60	2	Reserved for SFF-8461	61	2	Unallocated
60	1	Compliant to FC-PI-4 Appendix H	61	1	Unallocated
60	0	Compliant to SFF-8431 Appendix E	61	0	Compliant to CA-L

TABLE 8-2 ACTIVE CABLE SPECIFICATION COMPLIANCE (A0H BYTE 8 BIT 3 SET)

A0h	Bit	Description	A0h	Bit	Description
60	7	Unallocated	61	7	Unallocated
60	6	Unallocated	61	6	Unallocated
60	5	Unallocated	61	5	Unallocated
60	4	Compliant to 802.3 Annex 109B.	61	4	Unallocated
60	3	Compliant to FC-PI-4 Limiting	61	3	Unallocated
60	2	Compliant to SFF-8431 Limiting	61	2	Unallocated
60	1	Compliant to FC-PI-4 Appendix H	61	1	Unallocated
60	0	Compliant to SFF-8431 Appendix E	61	0	Unallocated

We believe this would provide sufficient clarity to our mutual customer base to ensure reliable operation with various FEC modes of operation, over the various cable types being considered.

For SFF-8024 the following bit map changes are requested:

TABLE 4-4 EXTENDED SPECIFICATION COMPLIANCE CODES

Code	Description of Module Capability
00h	Unspecified
01h	100G AOC (Active Optical Cable)
02h	100GBASE-SR4
03h	100GBASE-LR4
04h	100GBASE-ER4
05h	100GBASE-SR10
06h	100G CWDM4 MSA with FEC
07h	100G PSM4 Parallel SMF
08h	100G ACC (Active Copper Cable)
09h	100G CWDM4 MSA without FEC
0Ah	Reserved
0Bh	100GBASE-CR4 or 25GBASE-CR (CA-L Cable)
0Ch	25GBASE-CR (CA-S Cable)
0Dh	25GBASE-CR (CA-N Cable)
-0Fh	Reserved
10h	40GBASE-ER4
11h	4 x 10GBASE-SR
12h	40G PSM4 Parallel SMF
13h	G959.1 profile P1I1-2D1 (10709 MBd, 2km, 1310nm SM)
14h	G959.1 profile P1S1-2D2 (10709 MBd, 40km, 1550nm SM)
15h	G959.1 profile P1L1-2D2 (10709 MBd, 80km, 1550nm SM)
16h	10GBASE-T with SFI electrical interface
-FFh	Reserved

Sincerely,

Mark Nowell

Chair, IEEE P802.3by 25 Gb/s Task Force