Cl **85** *SC* **85.2** *P* **251** *L* **9** # 1

Marris, Arthur Cadence Design Syste

Comment Type **E** *Comment Status* **D**

Insert the word 'the'.

SuggestedRemedy

Change to 'the PMD:IS_UNITDATA_i.indication parameters are undefined'

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.95** *P* **66** *L* **20** # 2

Marris, Arthur Cadence Design Syste

Comment Type **T** *Comment Status* **D**

1.1500.5 bit description does not agree with PRBS9 Tx generation ability

SuggestedRemedy

For bit 1.1500.5 change 'PRBS31 pattern testing' to 'PRBS9 Transmit direction pattern generator'
For bit 1.1500.4 add 'Receive direction'

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.5.10** *P* **223** *L* **10** # 3

Marris, Arthur Cadence Design Syste

Comment Type **T** *Comment Status* **D**

Table 45-65a has been updated so these bit references are wrong. For example bit 1.1500.7 does not exist.

SuggestedRemedy

Update the second and third paragraphs of 83.5.10 to match Table 45-65a.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace:
"The ability to perform this function is indicated in the PRBS_pattern_ability status variable, which if a Clause 45 MDIO is implemented is accessible through the Test pattern ability register (bit 1.1500.7, see 45.2.1.95). Support for PRBS31 is indicated by the PRBS31_pattern_ability status variable and support for PRBS9 is indicated by the PRBS9_pattern_ability status variable. If a Clause 45 MDIO is implemented, these variables are accessible through bits 1.1500.6 and 1.1500.5, respectively.

Support for transmit direction generation is indicated by the PRBS_Tx_gen_ability status variable and transmit direction checking by the PRBS_Tx_check_ability status variable. Support for receive direction generation is indicated by the PRBS_Rx_gen_ability status variable and support for receive direction checking by the PRBS_Rx_check_ability status variable. If a Clause 45 MDIO is implemented, these variable are accessible through bits 1.1500.3, 1.1500.2, 1.1500.1, and 1.1500.0, respectively."

with:
"The ability to generate each of the respective test patterns in each direction of transmission are indicated by the PRBS9_Tx_generator_ability, PRBS9_Rx_generator_ability, PRBS31_Tx_generator_ability, and PRBS31_Rx_generator status variables, which if a Clause 45 MDIO is implemented are accessible through bits 1.1500.5, 1.1500.4, 1.1500.3, and 1.1500.1, respectively (see 45.2.1.95).

The ability to check PRBS31 test patterns in each direction of transmission are indicated by the PRBS31_Tx_checker_ability and PRBS31_Rx_checker_ability status variables, which if a Clause 45 MDIO is implemented are accessible through bits 1.1500.2 and 1.1500.0, respectively (see 45.2.1.95)."

See also comment #4 for corresponding updates to Table 83-3.

Cl **83** *SC* **83.6** *P* **226** *L* **10** # 4

Marris, Arthur Cadence Design Syste

Comment Type **T** *Comment Status* **D**

Update Table 83-3 to match Table 45-65a

SuggestedRemedy

as above

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace body rows 3-9 of Table 83-3 with:

"PRBS9 Tx generator ability; Test pattern ability register; 1.1500.5; PRBS9_Tx_generator_ability

PRBS9 Rx generator ability; Test pattern ability register; 1.1500.4; PRBS9_Rx_generator_ability

PRBS31 Tx generator ability; Test pattern ability register; 1.1500.3; PRBS31_Tx_generator_ability

PRBS31 Tx checker ability; Test pattern ability register; 1.1500.2; PRBS31_Tx_checker_ability

PRBS31 Rx generator ability; Test pattern ability register; 1.1500.1; PRBS31_Rx_generator_ability

PRBS31 Rx checker ability; Test pattern ability register; 1.1500.0; PRBS31_Rx_checker_ability"

See also comment #3 for the corresponding changes to the text.

Cl **74** *SC* **74.8.1** *P* **127** *L* **45** # 5

Marris, Arthur Cadence Design Syste

Comment Type **E** *Comment Status* **D**

Change '10GBASE-R PHY' to 'BASE-R PHY'

SuggestedRemedy

as above

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **74** *SC* **74.11.3** *P* **131** *L* **12** # 6

Marris, Arthur Cadence Design Syste

Comment Type **T** *Comment Status* **D**

For consistency change 6144 BT to 12 pause quanta. Note this is really an editorial change rather than a technical change as 6144 BT is equivalent to 12 pause quanta.

SuggestedRemedy

as above.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.87** *P* **63** *L* **32** # 7

Marris, Arthur Cadence Design Syste

Comment Type **E** *Comment Status* **D**

Font size in Tables 45-64 and 45-65 appears wrong.

SuggestedRemedy

please correct

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Well spotted!

Cl **82** *SC* **82.2.13** *P* **189** *L* **2** # 8

Marris, Arthur Cadence Design Syste

Comment Type **T** *Comment Status* **D**

Style

SuggestedRemedy

Change:
"Transmit PCS lanes can be received on different lanes of the service interface than they were originally transmitted on due to skew and multiplexing, and so the receive PCS shall handle receiving any transmit PCS lane on any receive lane of the service interface. The receive PCS orders the received PCS lanes according to the PCS lane number."
To:
"Transmit PCS lanes can be received on different lanes of the service interface from which they were originally transmitted due to skew between lanes and multiplexing by the PMA. The receive PCS shall order the received PCS lanes according to the PCS lane number."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.18.3** *P* **194** *L* **25** # 9

Marris, Arthur Cadence Design Syste

Comment Type **T** *Comment Status* **D**

Previous text was easier to understand.

SuggestedRemedy

On line 25 change:
"lane of the service interface"
back to:
"PCS lane"
On lines 25 and 26 change:
"lane of the service interface"
back to:
"PCS lane"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Correct as is.

Cl **85** *SC* **85.8.3** *P* **254** *L* **34** # 10

Moore, Charles Avago Technologies

Comment Type **E** *Comment Status* **D**

The label: "Transmitter DC amplitude *b" should align with specification:
"0.34 min, 0.6 max" but instead, it aligns with "greater than or equal
to 0.63*Transmitter DC amplitude". Shift it upward one line.
You may want to shift "Linear fit pulse (min) *c" upward one line also and/or right justify it.

SuggestedRemedy

as in comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

In Table 85-5;
(1)Change "greater than or equal to 0.63*Transmitter DC amplitude" to "0.63 x Transmitter DC amplitude"
(2)Align Transmitter DC amplitude with
85.8.3.3 and "0.34 min, 0.6 max"
(3)Align Linear fit pulse (min) with 85.8.3.3
and "0.63 x Transmitter DC amplitude"

Cl **85** *SC* **85.8.3.3** *P* **261** *L* **43** # 11

Moore, Charles Avago Technologies

Comment Type **E** *Comment Status* **D**

My comment 819 to draft 3.0 was voted "accept" but step 9) in sub clause 85.8.3.3 was not change per comment.

SuggestedRemedy

change step 9) to read:
"Compute the linear fit to the captured waveform and the linear fit pulse response p(k) per 85.8.3.3.5."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.8.4.2** *P* **268** *L* **18** # 12

Moore, Charles Avago Technologies

Comment Type **ER** *Comment Status* **D**

The statement:
The receiver interference tolerance of each lane shall comply with the parameters of Table 85-8 when implemented using both the receiver interference tolerance test 1 and test 2.."
firstly because the receiver interference tolerance cannot be implemented
secondly, trivially, because a sentence should end in a single period.

SuggestedRemedy

Replace offending sentence with:
"The receiver interference tolerance of each lane shall comply with the both test1 and test2 using the parameters of Table 85-7 if measured according to the methods of 85.8.4.3 to 85.8.4.3.4"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change:"The receiver interference tolerance of each lane shall comply with the parameters of Table 85-8 when
implemented using both the receiver interference tolerance test 1 and test 2.."
To:"The receiver interference tolerance test of each lane shall be implemented using both test 1 and test 2 parameters given in Table-85 and the test requirements of 85.8.4.2.1 through 85.8.4.2.5."

Delete one of the two".." after "test 2" page 268, line 20.

Cl **00** *SC* **0** *P* *L* # 13

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

The copyright date for the entire draft should be 2010 rather than 2009

SuggestedRemedy

Change the copyright date throughout to 2010

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.1.4a** *P* **45** *L* **20** # 14

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

The example numbering scheme for inserted clauses in comment 754 against D 3.0 was: "For example to insert two subclauses before 43.2.1 the subclauses would be numbered 43.2.a and 43.2.b. Two subclauses between 43.2.1 and 43.2.2 would be numbered 43.2.1a and 43.2.1b. Two subclauses added after the last subclause 43.2.2 would be numbered 43.2.3 and 43.2.4."
The subclause describing "PMA remote loopback (1.0.1)" should be between subclauses 45.2.1.1.3 and 45.2.1.1.4. According to the above examples it should be numbered 45.2.1.1.3a

SuggestedRemedy

Change the subclause number from 45.2.1.1.4a to 45.2.1.1.3a

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.1.4** *P* **45** *L* **43** # 15

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

45.2.1.1.4 has been modified by 802.3av, but the change is not shown.

SuggestedRemedy

Change the editing instruction to "Change 45.2.1.1.4 (as modified by IEEE Std 802.3av) to distinguish from remote loopback:"
Also change "except 2BASE-TL and 10PASS-TS," to "except 2BASE-TL, 10PASS-TS, and 10/1GBASE-PRX," in normal font.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.10** *P* **52** *L* **4** # 16

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

The title of 45.2.1.10 has a spurious "." at the beginning. "45.2.1.10 .PMA/PMD extended ability register (Register 1.11)"

SuggestedRemedy

Remove the "."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.96** *P* **67** *L* **3** # 17

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

Clause 45 in the base standard (and also as modified by 802.3av) is organised in the order of the registers being described. 45.2.1.96 and 45.2.1.97 relate to registers 1.1510 and 1.1501 respectively, which violates this.

SuggestedRemedy

Swap the content of subclauses 45.2.1.96 and 45.2.1.97 so that 45.2.1.96 is "PRBS pattern testing control (Register 1.1501)" and 45.2.1.97 is Square wave testing control (Register 1.1510). Also swap table numbers.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.7.4a** *P* **72** *L* **46** # 18

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

The example numbering scheme for inserted clauses in comment 754 against D 3.0 was: "For example to insert two subclauses before 43.2.1 the subclauses would be numbered 43.2.a and 43.2.b. Two subclauses between 43.2.1 and 43.2.2 would be numbered 43.2.1a and 43.2.1b. Two subclauses added after the last subclause 43.2.2 would be numbered 43.2.3 and 43.2.4."
The subclauses describing "100GBASE-R capable (3.8.5)" and "40GBASE-R capable (3.8.4)" should be between subclauses 45.2.3.7.3 and 45.2.3.7.4. According to the above examples they should be numbered 45.2.3.7.3a and 45.2.3.7.3b.

SuggestedRemedy

Change the subclause numbers from 45.2.3.7.4a and 45.2.3.7.4b to 45.2.3.7.3a and 45.2.3.7.3b respectively.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.16c** *P* **79** *L* **1** # 19

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

In the base standard, Table 45-95 describes register 3.43 and Table 45-96 is register 3.60. IEEE 802.3av-2009 inserted a new Table 45-12 and so these tables have now been re-numbered to 45-96 and 45-97. Draft 3.1 inserts new tables for registers 3.44 and 3.45 (in 45.2.3.16a and 16b), correctly numbering the new tables 45-96a and 45-96b. However, for registers 3.50 through 3.53 (in 45.2.3.16c through 45.2.3.16f), the tables are numbered 45-97a through 45-97d, which is not correct because these tables come before Table 45-97.

SuggestedRemedy

Change the numbers of Tables 45-97a through 45-97d to 45-96c through 45-96f

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.36** *P* **86** *L* **47** # 20

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

Subclause 45.2.3.28 in the base standard contains Table 45-107. IEEE 802.3av-2009 inserted a new Table 45-12, so this table has been re-numbered to Table 45-118. Then 802.3av inserted a new subclause 45.2.3.29 containing a table incorrectly numbered Table 45-107. This should have been Table 45-109. Consequently, the table in subclause 45.2.3.35 of 802.3av should be numbered Table 45-115 (not 45-113). This means that the table introduced in draft 3.1 subclause 45.2.3.36 should be numbered Table 45-115a (not 45-114a).

SuggestedRemedy

Change Tables 45-114a and 45-114b to Tables 45-115a and 45-115b.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.38** *P* **87** *L* **8** # 21

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

The title of 45.2.3.38 is "Lane mapping register 0 (Register 3.400)". However, for other registers, this is composed of the register name followed by "register". Here, the lane number follows the word register and hence is not properly part of the register name. Better choices for this name (and associated name for 45.2.3.39) are either:
45.2.3.38 Lane 0 mapping register, 45.2.3.39 Lanes 1 through 19 mapping registers
or
45.2.3.38 Lane mapping 0 register, 45.2.3.39 Lane mapping 1 through 19 registers

SuggestedRemedy

Change the titles of 45.2.3.38 and 45.2.3.39 to either:
45.2.3.38 Lane 0 mapping register, 45.2.3.39 Lanes 1 through 19 mapping registers
or
45.2.3.38 Lane mapping 0 register, 45.2.3.39 Lane mapping 1 through 19 registers
Change title of Table 45--114b, entries in Table 45-83 and Table 82-7 accordingly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change to "Lane 0 mapping ." etc. - i.e. use first option.

Cl **45** *SC* **45.5.3.3** *P* **93** *L* **17** # 22

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

MM47b says "Register 1.1500.12 is set to one", but 1.1500.12 is a bit not a register.

SuggestedRemedy

Change "Register 1.1500.12" to "Bit 1.1500.12"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.6** *P* **197** *L* **3** # 23

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

"40GBASECR4" is missing a "-"

SuggestedRemedy

Change "40GBASECR4" to "40GBASE-CR4"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.1** *P* **249** *L* **10** # 24

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

At the end of the first paragraph of 85.1 there are two full stops ".."

SuggestedRemedy

Remove one "."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.8.3** *P* **258** *L* **35** # 25

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

In Table 85-5, the "Linear fit pulse (min)" is given as "greater than or equal to 0.63*Transmitter DC amplitude". Since this is already "min" saying that the value is "greater than or equal to" means that the minimum may be greater than "0.63*Transmitter DC amplitude" which is not correct.
Also, "*" should not be used as a sign for multiply.

SuggestedRemedy

Change "greater than or equal to 0.63*Transmitter DC amplitude" to "0.63 x Transmitter DC amplitude"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. See response comment#10

Cl **85** *SC* **85.8.3.8** *P* **266** *L* **33** # 26

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

This says: "The mean time of each crossing is then compared to the expected time of the crossing, and a set of 256 timing variations is determined. DDJ is the range (maxmin) of the timing variations. Keep track of the signs (early/late) of the variations."
a) "(maxmin)" is not clear
b) "Keep track of the signs" is not explicit enough.

Keep track of the signs (early/late) of the variations.

SuggestedRemedy

Change "DDJ is the range (maxmin) of the timing variations. Keep track of the signs (early/late) of the variations." to "Crossings earlier than expected give a negative variation. DDJ is the range (maximum minus minimum) of the timing variations."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Per comment;
>"(maxmin)" is not clear
>"Keep track of the signs" is not explicit enough.

Change:"DDJ is the range (maxmin)
of the timing variations."
To:"DDJ is the range (maximum minus minimum) of the timing variations."

For b) Consider replacing "Keep track of the signs (early/late) of the variations"
with "Crossings earlier than expected give a negative variation"

For committee discussion.

Cl **85** *SC* **85.13.2.2** *P* **290** *L* **35** # 27

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

There is a spurious "." after Clause 85 in "IEEE Std 802.3ba-20xx, Clause 85., Physical Medium ..."

SuggestedRemedy

Remove the "."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **87** *SC* **87.5.7** *P* **334** *L* **42** # 28

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

This says "so that the each transmitter" which should be "so that each transmitter"

SuggestedRemedy

Change "so that the each transmitter" to "so that each transmitter". Also applies to 88.5.7 on Page 363 line 37

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85A** *SC* **85A.5** *P* **436** *L* **30** # 29

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

In Figure 85A-1, the text "17.04 dB+(2X6.5)-(2x2.8)=24.44 dB" uses two different types of "x"

SuggestedRemedy

Use correct multiply sign (Ctrl-q 4) for both.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **0** *L* **0** # 30

Turner, Michelle

Comment Type **ER** *Comment Status* **D**

This draft meets all editorial requirements

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

As per the Publication Editor the draft meets all editorial requirements, hence no action required on this comment.

Cl **86** *SC* **86.7.1** *P* **307** *L* **24** # 31

Petrilla, John Avago Technologies

Comment Type **TR** *Comment Status* **D**

In Table 86-6SR Tx attributes, Max TDP and 'Launch power in OMA minus TDP' should be updated due to the shift in TP1 jitter specs J2 (from 0.18 UI to 0.17 UI) and J9 (from 0.26 UI to 0.29 UI) in D3.1. This proposal will shift the benefit due to the reduced J2 jitter tolerance from the optical Tx to the optical Rx where the output J2 was reduced from 0.46 UI to 0.42 UI. No changes in Rx specs are required. Other attributes affected include Min OMA in Table 86-6, Min OMA in Table 86-7, and Power Budget and Allocation for penalties in Table 86-9.

SuggestedRemedy

In Table 86-6 change Max TDP from 3.6 dB to 3.5 dB and 'Launch power in OMA minus TDP' from -6.7 dB to -6.5 dB. Change Min OMA in Table 86-6, Min OMA and min average power in Table 86-7, Power Budget and Allocation for penalties in Table 86-9 as appropriate and in coordination with a following comment to update these items.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Hear petrilla_01_0310 and consider with comment 32.

Cl **86** *SC* **86.7.1** *P* **307** *L* **24** # 32

Petrilla, John Avago Technologies

Comment Type **TR** *Comment Status* **D**

In Table 86-6, SR Tx attribute Min OMA should be updated due to reduction in max TDP values in recent drafts. In D2.0, max TDP was 4.0 dB, min OMA for max TDP was assumed to be -3.0 dBm yielding a link budget for max TDP of 8.3 dB, and min OMA was -6 dBm leaving 1.0 dB of TDP in reserve. Since D2.0, TDP has been reduced largely due to changing allocations in jitter at TP1 and a better understanding of jitter metrics J2 and J9. Along with the reduction in TDP, the difference between 'OMA minus TDP' and min OMA has been reduced as has the power budget (Table 86-9) for max TDP. This is a proposal to bring the link budget from 8.2 dB back to 8.3 dB.

SuggestedRemedy

In Table 86-6, change Min OMA from -6 to -5.8. In Table 86-7, for OM3 change min Average power from -9.9 dBm to -9.7 dBm and min OMA from -7.9 dBm to -7.7 dBm and for OM4 change min Average power from -9.5 dBm to to -9.3 dBm and min OMA from -7.5 dBm to -7.3 dBm. In Table 86.9, change the Power budget from 8.2 dB to 8.3 dB and 'Allocation for penalties' for OM3 from 6.3 dB to 6.4 dB and for OM4 from 6.4 dB to 6.5 dB. Coordinate with above comment on TDP.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

It may be that the difference between 'OMA minus TDP' and min OMA was not reduced by intent. Hear petrilla_01_0310 and consider with comment 31.

Cl **86** *SC* **86.8.2** *P* **310** *L* **51** # 33

Petrilla, John Avago Technologies

Comment Type **E** *Comment Status* **D**

The lead sentence, "Compliance is to be achieved in normal operation" begs the question, 'Compliance of what?'. Since this subclause deals with test patterns, relevance of normal operation isn't obvious and, perhaps, the sentence is not required and can be deleted. or, if not, may best be restated.

SuggestedRemedy

Delete the lead sentence, "Compliance is to be achieved in normal operation." (Preferred solution) Or, change the sentence to "While signal compliance is to be achieved in normal operation, the observed signal in normal operation is not conducive to measurement."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

As it doesn't say otherwise, compliance to this clause. The same sentence appears in 52.9.1, 58.7.1, 68.6.1. If a change is made, change to "While compliance is to be achieved in normal operation, specific test patterns are defined for convenience and measurement consistency.". Do the same in 86.8.2, 87.8.1, 88.8.1 and 86A.5.2.

Cl **86** *SC* **86.8.2.1** *P* **313** *L* **15** # 34

Petrilla, John Avago Technologies

Comment Type **TR** *Comment Status* **D** *xtalk*

The sentence, "Either each receive lane is stressed in turn while all are operated, or all can be stressed together." should be modified to permit other combinations that may be useful. Similar sentences are found on pages 317 (twice), 452 and 455

SuggestedRemedy

Page 313 Change from, "Either each receive lane is stressed in turn while all are operated, or all can be stressed together." to "Either one or more receive lanes are stressed in turn while all are operated, or all can be stressed together.
Page 317 (twice), from "All receive lanes may be stressed at the same time, or each receive lane may be stressed in turn." to "All receive lanes may be stressed at the same time, or one or more receive lanes may be stressed in turn.
Page 452 from "Either each Rx lane is stressed in turn or they are all stressed at the same time." to "Either one or more Rx lanes are stressed in turn or they are all stressed at the same time."
Page 455 from "Either each lane is stressed in turn while all are operated, or all can be stressed together." to "Either one or more lanes are stressed in turn while all are operated, or all can be stressed together."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response to comments 126 127 140 151.

Cl **83A** *SC* **83A.3.3** *P* **399** *L* **40** # 35

Petrilla, John Avago Technologies

Comment Type **TR** *Comment Status* **D**

There does not seem to be a hit ratio defined for the Tx or Rx eye masks in 83A or 83B. Note that a requirement for operation with a BER better than 1E-12 is not sufficient. For example clause 86 has the same BER requirement but uses 5E-5 hit ratios for eye mask tests. The hit ratio requirement for a eye mask should be explicit to reduce confusion.

SuggestedRemedy

Add the appropriate hit ratio requirement, e.g. 1E-5 or 1E-12, to Tables 83A-1 and 83A-2 or to 83A.3.3.5 and 83A.3.4.2 or 83A.5. Repeat in 83B.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Section 85 (and other clauses) are specified without a hit ratio. See table 85-5 for an example.

Cl **83A** *SC* **83A.3.4.4** *P* **405** *L* **34** # 36

Petrilla, John Avago Technologies

Comment Type **E** *Comment Status* **D**

There seems to be an unintended feature in the term"Return_loss(f)" above the underscore.

SuggestedRemedy

Remove the unintended feature in the term"Return_loss(f)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **00** *SC* **0** *P* **409** *L* **5** # 37

Petrilla, John Avago Technologies

Comment Type **T** *Comment Status* **D**

Measurement of electrical signal attributes in 83A.5 call for "a receiver with an equivalent minimum -3 dB bandwidth of at least 18 GHz." while 86A.5.3.3, page 450, (see also 86A.5.3.4, 86A.5.3.5 and 86A.5.3.6) calls for "the waveform is observed through a 12 GHz low pass filter response". To ease the burden on implementers, these requirements should be harmonized. If a common BW cannot be found, then explicit accommodation of methods to compensate for BW differences should be added to the document.

SuggestedRemedy

Apply either "a receiver with an equivalent minimum -3 dB bandwidth of at least 18 GHz" or "the waveform is observed through a 12 GHz low pass filter response" throughout 83A, 83B and 86A for electrical time domain signals.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This topic was discussed and closed during D2.0 comment resolution. See comment 788 from D2.0.

Cl **86A** *SC* **86A.5.1** *P* **444** *L* **28** # 38

Petrilla, John Avago Technologies

Comment Type **ER** *Comment Status* **D**

This seems to be the only instance of the phrase, "the nPPI connector". The phrase may lead to confusion as some may infer that there's an nPPI connector defined with the document and there is not.

SuggestedRemedy

Change, "These compliance boards are defined to connect generic test equipment to the module and host using the nPPI connector, for test purposes" to "These compliance boards are defined to connect generic test equipment to the module and host for test purposes"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

As the purposes seems self-evident, change to "These compliance boards are defined to connect generic test equipment to the module and host in an electrically reproducible way.". This comment is out of scope as it does not relate to changes or an unsatisfied negative.

Cl **86A** *SC* **86A.5.2** *P* **448** *L* **27** # 39

Petrilla, John Avago Technologies

Comment Type **E** *Comment Status* **D**

The lead sentence, "Compliance is to be achieved in normal operation" begs the question, 'Compliance of what?'. Since this subclause deals with test patterns, relevance of normal operation isn't obvious and, perhaps, the sentence is not required and can be deleted. or, if not, may best be restated.

SuggestedRemedy

Delete the lead sentence, "Compliance is to be achieved in normal operation." (Preferred solution) Or, change the sentence to "While signal compliance at TP1, TP1a, TP4 and TP4a is to be achieved in normal operation, the observed signal in normal operation is not conducive to measurement."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See response to comment 33.

Cl **86A** *SC* **86A.5.2** *P* **448** *L* **39** # 40

Petrilla, John Avago Technologies

Comment Type **TR** *Comment Status* **D**

Shouldn't the Pattern entry for J9 jitter be the same as for the J2 entry?

SuggestedRemedy

Repeat the Pattern entry for J2 in J9.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Two parameters here, J9 and signal tolerance and more in the optical PMD clauses, are simply "3 or 5" in case the low-probability tails of a valid 40GBASE-SR4 or 100GBASE-SR10 signal are not reproducible. If changes are made, they should be applied to tables 86-12, 87-11 and 88-11 also.

Cl **85** *SC* **85.10.9.4** *P* **281** *L* **26** # 41

Diminico, Christopher LEONI

Comment Type **T** *Comment Status* **D**

change "return loss" to "common mode conversion loss"

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.8.3.3** *P* **261** *L* **44** # 42

Diminico, Christopher LEONI

Comment Type **E** *Comment Status* **D**

step 9 Change: "Compute the linear fit to the captured waveform per 85.8.3.3.5"
to: "Compute the linear fit to the captured waveform and the linear fit pulse response p(k) per
85.8.3.3.5."

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. See response comment#11.

Cl **99** *SC* **99** *P* **1** *L* **55** # 43

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

2009

SuggestedRemedy

2010

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See response to comment #13

Cl **30** *SC* **30.5.1.1.10a** *P* **36** *L* **37** # 44

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Formatting

SuggestedRemedy

Use en dash or similar for minus, in place of hyphen. As N is a variable, it could be in italics. To align with the clauses, change N to n. Also in 80.3, n and N could be in italics.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Use ALT-0150 to denote subtraction. (2 instances)

Change N to n. (4 instances)

Cl **45** *SC* **45.2.1.10** *P* **54** *L* **19** # 45

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

In 45.2.1.10 .PMA/PMD extended

SuggestedRemedy

there's an unwanted dot

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Delete as per comment #16

Cl **45** *SC* **45.2.1.10** *P* **54** *L* **21** # 46

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Gratuitous capitals (see D3.0 comment 316).

SuggestedRemedy

In the subclause title, change "Extended Ability" to "extended ability", matching the table title.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Use lower case for the table title (as in the clause title).

Cl **45** *SC* **45.2.1.10** *P* **54** *L* **27** # 47

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Gratuitous capital (see D3.0 comment 316).

SuggestedRemedy

Change "40G/100G Extended abilities" to "40G/100G Extended abilities" (but see another comment).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change "40G/100G Extended abilities" to "40G/100G extended abilities" (but see another comment).

Cl **45** *SC* **45.2.1.11a** *P* **55** *L* **5** # 48

Dawe, Piers J G Independant

Comment Type **ER** *Comment Status* **D**

Misleading register name: this isn't an extended ability register, it's the first and only 40G/100G PMA/PMD ability register. What if we wanted another 40G/100G PMA/PMD ability register (when we have more port types); what would we call that? (Register 1.11 was called "extended" because it's the overflow from 1.8 10G PMA/PMD status 2 register)

SuggestedRemedy

Change "40G/100G PMA/PMD extended ability register" to "40G/100G PMA/PMD ability register" throughout the document.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This register is extended the abilities indicated in register 1.11 (PMA/PMD extended ability register). Register 1.13 only exists if register bit 1.11.10 is asserted.

Cl **45** *SC* **45.2.1.79** *P* **59** *L* **51** # 49

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

identical behavior as the original register

SuggestedRemedy

Would "behavior identical to the original register" read better? Several times.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change:

If implemented, all accesses to the copy have identical behavior as the original register.

To:

If implemented, all accesses to the copy have identical behavior as accesses to the original register.

45.2.1.79, 80, 81, 82, 87, 88

Cl **45** *SC* **45.2.1.95** *P* **69** *L* **31** # 50

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

PRBS31 ability (line 40) has been rewritten so that Tx, Rx, generation and checking can be implemented in any combination. PRBS9 is simpler, but while sending a PRBS9 out of a chip is useful, sending PRBS9 further into a chip (e.g. to the PCS) may not be. Bit 1.1500.4 isn't mentioned at present.

SuggestedRemedy

Rewrite this paragraph to describe bit 1.1500.4 and allow either Tx or Rx PRBS9 generation (as well as both or neither).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

In paragraph on p.66, l. 40.

Change 1.1500.6 to 1.1500.4

This allows indication of Tx or Rx PRBS9 generation independantly as the commenter requests.

Cl **45** *SC* **45.2.1.96** *P* **70** *L* **3** # 51

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

As the PMA generates square waves but doesn't check or do anything with them,

SuggestedRemedy

It would be better to rename "Square wave testing control" to "Square wave control"

Proposed Response *Response Status* **W**

PROPOSED REJECT.

It should be assumed that the square waves are generated for the purposes of testing. This register controls them, therefore the word "testing" is appropriate. It also helps to avoid implying that this might be a functional mode.

Cl **45** *SC* **45.2.3.15** *P* **80** *L* **12** # 52

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

Misleading text.

SuggestedRemedy

Change "PRBS9, PRBS31, pseudo random and square wave test patterns are defined for 10GBASE-R only." to "Within the 10GBASE-R PCS definition, there is provision for PRBS9, PRBS31, pseudo random and square wave test patterns (some of these patterns are provided in the 40/100GBASE-R PMA definition).".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The paragraph highlighted is correct within the context of the PCS.

Add "PCS" between "10GBASE-R" and "only." Also add "PCS" between "40/100GBASE-R" and "only."

Cl **45** *SC* **45.2.3.15** *P* **80** *L* **14** # 53

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

The sentence "The PHY may ignore writes and read zeros for register bits related to undefined functions." isn't in the base document, but 45.2 says "The operation of an MMD shall not be affected by writes to reserved and unsupported register bits, and such register bits shall return a value of zero when read." This register is for just the PCS, not the PHY.

SuggestedRemedy

Delete the sentence here.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **69** *SC* **69.2.3** *P* **101** *L* **30** # 54

Dawe, Piers J G Independant

Comment Type **ER** *Comment Status* **D**

Gratuitous capitals (see D3.0 comment 316 and compare Table 80-2).

SuggestedRemedy

Change "AUTO-NEGOTIATION" to "Auto-negotiation" or "Auto-Negotiation"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change to "Auto-Negotiation" to match similar text in Clauses 84 and 85.

Cl **69** *SC* **69.2.3** *P* **101** *L* **25** # 55

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

There's no reason why 83B could not be used here. It might not be of interest to most but could allow some mezzanine implementations. Anyway, we should not tell the implementers that they can't do something harmless that the standard allows.

SuggestedRemedy

Add a column for 83B, optional for 40GBASE-KR4.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See response to comment 68 against Clause 80.

This comment is out-of-scope as it is not against modified text.

Cl **73** *SC* **73** *P* *L* **4** # 56

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

The base document Clause 73 title is "73. Auto-Negotiation for Backplane Ethernet". It contains several functions e.g. "Arbitration function". AN isn't a function, it's a sublayer. In this draft, the clause title is "Auto-Negotiation function for backplane Ethernet and copper cable assembly", and "function" is not underlined.

SuggestedRemedy

Delete "function" from the title (and consequently in PICS).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Delete 'function' and show change in capitalisation for 'backplane'. Also change PICS.

Cl **73** *SC* **73** *P* **103** *L* **9** # 57
Dawe, Piers J G Independant

Comment Type **ER** *Comment Status* **D**

The style manual tries to distinguish between normative footnotes and not-part-of the-standard NOTEs. It is not clear what category "Note that" falls into. The words don't mean anything.

SuggestedRemedy

As this sentence is informative but does not contain requirements, change it to NOTE--Although the Auto-Negotiation defined. . .
Review and if appropriate change any other "note that"s.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This comment is out of scope (against unchanged text) and the proposed change is unnecessary.

Cl **73** *SC* **73.2** *P* **103** *L* **9** # 58
Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Text for OSI layer names has been stretched.

SuggestedRemedy

Reset stretch to 100%.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Simple editorial fix, so OK to implement even though it is against unchanged text.

Cl **74** *SC* **74.1** *P* **113** *L* **15** # 59
Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

Backplane channels aren't defined in Clause 69.

SuggestedRemedy

Change "Clause 69" to "Annex 69B".

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This comment is out-of-scope and refers to unchanged text in the base document. The suggested change is not necessary.

Cl **74** *SC* **74.1** *P* **113** *L* **15** # 60
Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

"The FEC sublayer can be placed in between the PCS and PMA sublayers" contradicts new text in 74.4.

SuggestedRemedy

After this sentence, insert "For 40GBASE-R and 100GBASE-R, the FEC sublayer can be placed between two PMA sublayers."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The text reads fine as is.

As the commenter points out placing the FEC between two PMA sublayers is explained appropriately in 74.4.

Adding the proposed text in 74.1 might confuse the reader.

Cl **74** *SC* **74.4** *P* **114** *L* **51** # 61
Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

as illustrated Figure 83-2 where

SuggestedRemedy

as illustrated in Figure 83-2 comma where

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add the word 'in'

Cl **74** *SC* **74.4.1** *P* **115** *L* **12** # 62
Dawe, Piers J G Independant

Comment Type **ER** *Comment Status* **D**

Gratuitous capitals (see D3.0 comment 316 and rubric for Figure 74-2).

SuggestedRemedy

Change "74.4.1 Functional Block Diagram for 10GBASE-R PHYs" to "74.4.1 Functional block diagram for 10GBASE-R PHYs". Similarly for 74.4.2 and 74.4.3.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **74** *SC* **74.11.3** *P* **133** *L* **9** # 63
Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

This table would benefit from resizing the columns.

SuggestedRemedy

Resize the columns to use the space better.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

This is a minor editorial comment.

The editors will review the format of the tables in 74.11 and reformat if they deem appropriate.

Cl **74** *SC* **74.11.5** *P* **133** *L* **43** # 64
Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

"If implemented: M" isn't a familiar PICS status. PICS implies all gearboxes need to comply to 82.2.11, not just 40G/100G.

SuggestedRemedy

Change "Feature" from "Reverse Gear Box function" to "Reverse gearbox function for 40GBASE-R and 100GBASE-R" (or "Reverse Gearbox function for 40GBASE-R and 100GBASE-R". Change to "O" and add "No [ ]" to Status cell. Add major options for speed to do this properly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change "Feature" from "Reverse Gear Box function" to "Reverse gearbox function for 40GBASE-R and 100GBASE-R". Change to "O" and add "No [ ]" to Status cell.

Cl **74** *SC* **74.11.5** *P* **133** *L* **43** # 65
Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Gratuitous capitals and not consistent with clause.

SuggestedRemedy

Change "Gear Box" to "gearbox" or as most functions in 74 have capitals, Gearbox.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

change to "gearbox"

Cl **80** *SC* **80.1.4** *P* **135** *L* **13** # 66
Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Physical layer

SuggestedRemedy

Physical Layer

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

"Physical Layer" should always be capitalized for consistency with 802.3 base standard.

Change "physical layer" and "Physical layer" to "Physical Layer" throughout the document.

Three instances of "Physical layer": see 80.1.2, 80.1.4 and Table 88-1 (table title).

Seven instances of "physical layer": see 80.1.4, 80.3 and 1.4.

Cl **80** *SC* **80.1.4** *P* **135** *L* **20** # 67
Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Table 80-1, 40 Gb/s and 100 Gb/s PHYs, would be better with fewer words and more columns.

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The above comment is made against unchanged text.

The table, definitions, and column formatting is technically correct as documented and the table with current format has been in the draft since D2.2. Moreover the commenter has not provided specific remedy to make it better.

Cl **80** *SC* **80.1.5** *P* **137** *L* **14** # 68

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

Chip-module XLAUI and CAUI per 83B are applicable to 40GBASE-KR, 40GBASE-CR and 100GBASE-CR just as they are for other port types; it's a modular architecture.

SuggestedRemedy

Add "O" for 83B XLAUI 40GBASE-KR and 40GBASE-CR, and 83B CAUI 100GBASE-CR.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Annex 83B defines electrical characteristics and compliance points for pluggable module applications.
It's unnecessary to add "O" for 83B XLAUI to 40GBASE-KR4 and 40GBASE-CR4, and 83B CAUI to 100GBASE-CR10 as the specifications for these port types don't constrain the user of the standard to a particular implementation, i.e., as long as the specifications of the respective clauses are met.
In addition, a "pluggable module application" does not sufficiently characterize an optional interface for CR4 and CR10 ensuring conformance at the MDI.

Also see comment #55

Cl **80** *SC* **80.2.4** *P* **138** *L* # 69

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

Wrong fix for D3.0 comment 86. As it says in 80.3.3.1.1 and 80.3.3.2.1, the PMA and PMD deal in streams of encoded bits, not data.

SuggestedRemedy

At line 14, change "data" back to "bit". At lines 12 and 15, change "data" to "bit". In 82.2.2 line 52-53, consider changing "distribute the data" to "distribute the encoded bits", and "encoded data" to "encoded bit streams".

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The D3.0 comment #86 has been implemented correctly as per the final response.

See: http://ieee802.org/3/ba/public/jan10/P8023ba-D30-Final_Responses_byCls.pdf#page=41

The term "data stream" has been used throughout the document and also in the base document. Data is a generic term and a data unit could be single bit as in this case.

Cl **80** *SC* **80.3** *P* **138** *L* **51** # 70

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

Gratuitous capitals (see D3.0 comment 316).

SuggestedRemedy

Change "80.3 Service Interface specification method and notation" to "80.3 Service interface specification method and notation". Change "80.3.2 Instances of the Inter-sublayer service interface" to "80.3.2 Instances of the inter-sublayer service interface". Similarly at 80.3.3.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Change capitalization as suggested to be consistent with rest of the document.

Cl **80** *SC* **80.3.2** *P* **139** *L* **27** # 71

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

PMD:, for primitives issued on the interface between the PMD sublayer and the PMA sublayer called the PMD service interface.
b) PMA:, for primitives issued on the interface between the PMA sublayer and the PCS (or the FEC) sublayer called the PMA service interface.

SuggestedRemedy

PMD:, for primitives issued on the interface between the PMD sublayer and *a* PMA sublayer...
b) PMA:, for primitives issued on the interface between *a* PMA sublayer and the PCS,FEC or another PMA sublayer...

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The above comment is made against unchanged text.

The text as it is written is technically correct as it refers to the interface associated with the PMA sublayer specified in Clause 83.

Cl **80** *SC* **80.3.2** *P* **139** *L* **27** # 72
Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

Hard to read

SuggestedRemedy

Add commas before "called the", three times.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The above comment is made against unchanged text.

The text as it is written is technically correct and reads fine without the suggested punctuation mark

Cl **80** *SC* **80.5** *P* **149** *L* **6** # 73
Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Column widths.

SuggestedRemedy

Tweak column widths to make better use of space.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The column widths looks fine as documented.

Cl **80** *SC* **80.5** *P* **149** *L* **23** # 74
Dawe, Piers J G Independant

Comment Type **ER** *Comment Status* **D**

"Note that" 4 times. The style manual tries to distinguish between normative footnotes and not-part-of the-standard NOTEs, and we have suddenly become very picky about this. It is not clear which category this "Note that" falls into. The words don't serve any purpose anyway.

SuggestedRemedy

Delete "Note that" or "Note that ? indicates", four times.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

These are table footnotes (identified by lowercase letters a, b, c, and d) that are part of the standard.

Cl **80** *SC* **80.5** *P* **146** *L* **42** # 75
Dawe, Piers J G Independant

Comment Type **ER** *Comment Status* **D**

The style manual tries to distinguish between normative footnotes and not-part-of the-standard NOTEs, and we have suddenly become very picky about this. It is not clear which category this "Note that" falls into. The words don't serve any purpose anyway.

SuggestedRemedy

Delete "Note that", twice.
Review and if appropriate change any other "note that"s.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

These are table footnotes (identified by lowercase letters a, b, and c) that are part of the standard.

Cl **81** *SC* **81** *P* **149** *L* **1** # 76
Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

It would be nice to have the abbreviations in the title as for other sublayers, so a string search of the contents will find them.

SuggestedRemedy

Suggest "Reconciliation Sublayer (RS), XLGMII and CGMII for 40 Gb/s and 100 Gb/s operation"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change:
Reconciliation Sublayer (RS) and Media Independent Interface for 40 Gb/s and 100 Gb/s operation
To:
Reconciliation Sublayer (RS) and Media Independent Interface for 40 Gb/s and 100 Gb/s operation (XLGMII and CGMII)

Cl **81** *SC* **81** *P* **149** *L* **1** # 77

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

According to 1.4.218, Media Independent Interface (MII) is "A transparent signal interface at the bottom of the Reconciliation sublayer. (See IEEE 802.3, Clause 22.)' and 22.1 says 'It is capable of supporting 10 Mb/s and 100 Mb/s rates for data transfer'. So a 40G or 100G PCS service interface can't be called MII.

SuggestedRemedy

Either modify the definition of Media Independent Interface (MII), or don't use Media Independent Interface (with capitals) or MII for 40G or 100G.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Based on previous discussions in the task force, it was decided to not use the abreviation MII in this clause, however the group decided to use the expanded form and hence the current draft is the consensus decision of the task force.
Similar concerns have been discussed in the resolution of comments #40 and 55 of draft 3.0 for instance.

Cl **81** *SC* **81.1** *P* **149** *L* # 78

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

An "instantiation" would be an instance, which is a single physical entity e.g. with a serial number, not a class of similar things. Here we do mean a class.

SuggestedRemedy

Change "instantiations" to "variants".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **81** *SC* **81.3.4.2** *P* **167** *L* **24** # 79

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

If Figure 81-9 is the same as Figure 46-9, it will help readers who are familiar with the latter to be informed, rather than starting from square one again.

SuggestedRemedy

Add informative NOTE pointing out that Figure 81-9 is the same as Figure 46-9.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This is not necessary, and can create a maintanence issue if figure 46-9 were to change.

Cl **81** *SC* **81.4** *P* **169** *L* **29** # 80

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

Something that says "required" obviously isn't an informative NOTE (a NOTE is not part of the standard)

SuggestedRemedy

Change "NOTES" to "Advice to user" (or delete), renumber NOTE 1 NOTE 2 NOTE 3 to just 1 2 3. Similarly in other clauses and annexes.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Correct as is and consistent with baseline clauses. This would impact 81-88 if implemented.

Cl **82** *SC* **82.1.3.1** *P* **175** *L* **42** # 81

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

An "instantiation" would be an instance, which is one of the members of an "implementation", not what we mean here.

SuggestedRemedy

Change "instantiation" to "variant", twice.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.3.6** *P* **186** *L* **26** # 82

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Inconsistent capitals (see D3.0 comment 316). Here we have "Control Code", at line 38 we have "control code".

SuggestedRemedy

Reconcile. Also remove gratuitous capitals in other table header rows.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change to 'control code' in this table.

Cl **82** *SC* **82.2.3.6** *P* **186** *L* **28** # 83
Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Column widths, empty line in header row.

SuggestedRemedy

Please fix.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.18.3** *P* **199** *L* **35** # 84
Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

In general, management is optional, and if there is management, MDIO registers are only one way to implement it (as stated in 82.3 and 82.3.1). Is recording receive lane mappings more special than other status info? PICS says it's conditional.

SuggestedRemedy

Insert words in the middle of the sentence "When the alignment marker lock process achieves lock for a lane, if MDIO is implemented, the PCS shall record the number of the PCS lane received on a particular lane of the service interface in the appropriate lane mapping register (3.400 to 3.419)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change to:
"When the alignment marker lock process achieves lock for a lane, and if Clause 45 MDIO is implemented, the PCS shall record the number of the PCS lane received on a particular lane of the service interface in the appropriate lane mapping register (3.400 to 3.419)."

Cl **82** *SC* **82.7.6.3** *P* **220** *L* **26** # 85
Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Delay Constraints

SuggestedRemedy

Delay constraints

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **84** *SC* **84.2** *P* **224** *L* **42** # 86
Dawe, Piers J G Independant

Comment Type **ER** *Comment Status* **D**

Gratuitous capitals, not consistent with other clauses. See D3.0 comment 316.

SuggestedRemedy

Change "Physical Medium Dependent Sublayer and Baseband Medium, Type 40GBASE-KR4" to "Physical Medium Dependent sublayer and baseband medium, type 40GBASE-KR4"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.2** *P* **251** *L* **9** # 87
Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Missing space in =FAIL (same issue as D3.0 comment 291, accepted)

SuggestedRemedy

Insert space

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **84** *SC* **84.7.2** *P* **238** *L* **47** # 88
Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Split table not filling page properly

SuggestedRemedy

Adjust table orphan rows and float properties

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

This is a minor editorial comment.

The editors will review the format of Table 84-3 and reformat if they deem appropriate.

Cl **84** *SC* **84.7.8** *P* **240** *L* **39** # 89

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

84.7.8 and 85.7.8 say "Local loopback shall be provided by the adjacent PMA (see 83.5.8)" (with PICS) while 83.5.8 says "PMA local loopback shall be provided by the PMA adjacent to the PMD for 40GBASE-KR4, 40GBASECR4, and 100BASE-CR10 PMDs." (also with PICS). It is not acceptable for one clause to try to require something of the sublayer of another clause. The other clause (83 in this case) does that. 802.3ap cut a corner and didn't open Clause 51: in this project the PMA clause 83 is open for edit and already has the shall and PICS desired.

SuggestedRemedy

Change "shall be provided" to "is provided" in 84.7.8 and 85.7.8.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This text was modified by comment 505 against draft 3.0. Comment 505 was extensively discussed by the task force and there was agreement to adopt the current text.

Cl **85** *SC* **85.1** *P* **249** *L* **21** # 90

Dawe, Piers J G Independant

Comment Type **ER** *Comment Status* **D**

Table format doesn't work properly for a PMD clause with two speeds (85 and 86, not a problem for 88). This table takes 12 rows to do a bad job of saying what could be told more clearly in 8 rows (for the future a clause with three speeds would be even worse). There are 8 unnecessary "N/A" cells. The first column contains two items per cell which in this project do not have a 1:1 correspondence (they did for 10G and do for single-speed clauses) and should be split up. An explicit "status" column as in any PICS table or the crossed-out Table 86-2 helps.

SuggestedRemedy

For Table 85-1, follow the format of the crossed-out Table 86-2 (without the PMD row).

Proposed Response *Response Status* **W**

PROPOSED REJECT.
I'm sure we could continue to improve table format but at this point I believe it sufficiently lists Physical Layer clauses associated with the 40GBASE-CR4 and 100GBASECR10.

Cl **85** *SC* **85.1** *P* **249** *L* **21** # 91

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Apart from PICS and tables 13-2, 13-3 and B-1 (where it is explained in footnotes), tables in 15, Table B-2, table 52-2, 23, 24, 25; 53-1, 6, 9, 13 (n/a); 53-12, 14, 58-12, 13, 59-1, 12, 16, 60-3 and 60-5, neither sections 1, 4 and 5 of the base document nor this draft uses N/A, except Table 45-14 defines n/a as undefined. "N/A" is not in the main abbreviations list but is given in 15.8.2.2 Abbreviations, 16.6.2.2 Abbreviations and 21.6.6 Conditional items. So it appears it was a mistake to change "Not applicable" to "N/A".

SuggestedRemedy

Where there is space to do so, outside of PICS, change "N/A" (back) to "Not applicable". Add to 1.5 Abbreviations, "N/A not applicable".

Proposed Response *Response Status* **W**

PROPOSED REJECT. The basis for the acceptance of N/A was its use in the PICS.
See Draft 3.0 Comment#148.

Cl **85** *SC* **85.8.3** *P* **262** *L* **39** # 92

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

Now that there is a formal definition for it, DDJ is a proper noun. Particularly because the DDJ per definition is not all the jitter that's "data" (pattern) dependent.

SuggestedRemedy

Change "data dependent jitter" to "Data Dependent Jitter" throughout 85.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Concerned that this change may draw more comments as usage is mixed in base document therefore editor response as follows..

85.8.3.8 test method and definition (85-16) sufficiently characterizes meaning of DDJ whether we call it Data Dependent Jitter, data-dependent jitter or data dependent jitter.

Frequent usage and 52.9.9.2 and 58.7.11.2 has it "data-dependent jitter" (DDJ).
Clause 48 has it "data dependent jitter" (DDJ).

Cl **85** *SC* **85.8.3.8** *P* **272** *L* **32** # 93

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

"DDJ jitter": tautology

SuggestedRemedy

Delete "jitter".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.8.3.8** *P* **272** *L* **33** # 94

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

The point of specifying a signal is to ensure that it is acceptable to an input or receiver, not to learn irrelevant things about what the signal "really" is like. Draft says "For DDJ jitter measurements, the measurement bandwidth should be at least 20 GHz." This is much more bandwidth than the product receiver, causing a misleading measurement. Also the measurement will be noisier with unnecessary bandwidth, and the scope head possibly more expensive. Post-processing to a lower bandwidth is viable, does not significantly affect cost, and improves accuracy: trying to post-process to a higher bandwidth is unreliable. The highest frequencies in a signal won't get far down the cable! The reference receiver for ICN has 7.5 GHz bandwidth. Even the test fixture might have a bandwidth of 16.2 GHz but is not specified above 10 GHz so measurement much above 10 GHz is arbitrary and pointless.

SuggestedRemedy

Change 20 GHz to 12 GHz.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Measurement bandwidth discussed at length in Cu Subtask force; aggreement reached to recommend 20 GHz i.e., "for DDJ jitter measurements,
the measurement bandwidth should be at least 20 GHz."

For committee discussion

Cl **85** *SC* **85.8.4.2.1** *P* **276** *L* **9** # 95

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

In line with other changes

SuggestedRemedy

TX/RX should be Tx/Rx

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Figure 85-7, Page 269
change "TX/RX" to "Tx/Rx"

Cl **86** *SC* **86.1** *P* **299** *L* **13** # 96

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Title too long

SuggestedRemedy

Change "Physical Layer clauses associated with the 40GBASE-SR4 and 100GBASESR10 PMDs" to "Physical Layer clauses for 40GBASE-SR4 and 100GBASESR10" or "Physical Layer clauses for 40GBASE-SR4 and 100GBASESR10 PMDs". Similarly for equivalent tables in other clauses.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The IEEE style manual does not impose a restriction on the length of table titles. If making a change, change to "Physical Layer clauses for 40GBASE-SR4 and 100GBASE-SR10" and similarly for equivalent tables in other clauses.

Cl **86** *SC* **86.1** *P* **299** *L* **16** # 97

Dawe, Piers J G Independant

Comment Type **GR** *Comment Status* **D**

Table format doesn't work properly for a PMD clause with two speeds (85 and 86, not a problem for 88). This table takes 14 rows to do a bad job of explaining what the crossed-out Table 86-2 does more clearly in 8 rows. For the future, a clause with three speeds would be even worse. The crossed-out Table 86-2 was adopted for D2.1 in May 09, and has never been commented against (not at D2.1, D2.2, D2.3 or D3.0). D3.0 comment 498 had nothing to do with this table and this change was added very late without proper consideration.

SuggestedRemedy

Change Table 86-1 back to the format in D2.1, D2.2, D2.3 or D3.0, but without the PMD row. If wished, make a similar improvement to Table 85-1.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Response to D3.0 comment 498 made the tables consistent by adopting the Table 85-1 format. Note comment 90 against Table 85-1.

Cl **86** *SC* **86.1** *P* **299** *L* **51** # 98

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Trailing space?

SuggestedRemedy

Remove any trailing spaces found throughout the draft.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Remove trailing spaces found throughout the draft as appropriate if the change does not affect the layout.

Cl **86** *SC* **86.7.4** *P* **299** *L* **42** # 99

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Uneven font size

SuggestedRemedy

Fix this and any other font size issues (typically in tables but also in Figure 83B-10) throughout the draft.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Fix this and any other font size issues throughout the draft (typically in tables) as appropriate.

Cl **86** *SC* **86.8.1** *P* **315** *L* **28** # 100

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

Some instruments don't include stimulus

SuggestedRemedy

Change "Instrument "looks" this way (direction of stimulus)" to "Instrument "looks" this way (e.g. direction of stimulus)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **86** *SC* **86.10.1** *P* **324** *L* **29** # 101

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

As OM4 is compliant to OM3,

SuggestedRemedy

Add new sentence 'As OM4 optical fiber meets the requirements for OM3, a channel compliant to the "OM3" column may use OM4 optical fiber, or a combination of OM3 or OM4.'

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add new sentence at the end of 86.10.1: 'As OM4 optical fiber meets the requirements for OM3, a channel compliant to the "OM3" column may use OM4 optical fiber, or a combination of OM3 and OM4.' (Note "and OM4" at the end.)

Cl **87** *SC* **87.8.8** *P* **343** *L* **5** # 102

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

We define parameters and this is not a test and measurement standard.. Measurement methodology is only a means to an end. It may be a normative reference model, but it's not compulsory. A well-known instrument sold for measuring RIN doesn't use a power meter as defined in 52.9.6, but uses a spectrum analyser.

SuggestedRemedy

Change "The RIN measurement methodology shall be as defined in 52.9.6" to "RIN shall be as defined by the measurement methodology of 52.9.6". Same in 88.8.7.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Clause 52 does define a RIN measurement procedure, D3p1 references it.

Cl **87** *SC* **87.8.11.1** *P* **345** *L* **26** # 103

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

Modified stress conditioning block has an undefined "low pass filter" where previously a fourth-order Bessel-Thomson filter was specified. This allows a variety of stressed eye shapes, destroying the hope of consistency among stressed eye generators.

SuggestedRemedy

Specify a fourth-order Bessel-Thomson response.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The "low pass filter" has a single function here, to provide eye closure. The amount of jitter the filter adds can be accounted for by independent control of sinusoidal interferer 1, which just affects jitter. So the "low pass filter" type, and the degree of consequent jitter added to the eye, is not critical.

This is an improvement upon clause 52, which describes a fourth-order Bessel-Thomson filter providing a mix of vertical eye closure and jitter stress.

Cl **87** *SC* **87.8.11.2** *P* **348** *L* **6** # 104

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

Only 0.05 UI of pulse width shrinkage is (now) too small, as it is intended that LR4 can be used with XLPPI, which has up to 0.07 UI of DDPWS. But with a 4BT filter creating DDPWS, there is a risk that DDPWS will be too large.

SuggestedRemedy

Add a DDPWS target or range

Proposed Response *Response Status* **W**

PROPOSED REJECT.
D3.1 SRS test kit describes using applied sinusoidal jitter to produce DDPWS. A minimum of 0.05UI is required by this section, which was inherited from clause 52; However, DDPWS is no more damaging than any other form of deterministic jitter in this application.

Cl **83A** *SC* **83A.1** *P* **395** *L* **13** # 105

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

Following through with D3.0 comment 314, I didn't notice any "functional requirements" in Annex 83B: coding, skew and such are in 83. 83B is electrical. Delete "functional and". (accepted)

SuggestedRemedy

Delete "functional and" here and at 83B.1 line 13.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83A** *SC* **83A.3.3** *P* **400** *L* **29** # 106

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Double space between "Table" and table number?

SuggestedRemedy

Fix the style. Also 83B and 85A.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83A** *SC* **83A.3.3.1** *P* **403** *L* **18** # 107

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

White space

SuggestedRemedy

Crop the inner graphics frame.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Can't find issue

Cl **83B** *SC* **83B.2.2** *P* **428** *L* **10** # 108

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

Following up on D3.0 comment 323: The low frequency jitter tolerance is the same for a receive side host input as for a transmit side input, and at the optical MDI. If the Tx side spec is 4 MHz, a real module might use e.g. up to 8 MHz. Host is allowed to generate 0.42 UI high probability jitter above 4 MHz, and is allowed to generate all of this below 8 MHz. The optical transmitter module is specified against 0.05 UI SJ above 4 MHz. The extra 0.37 UI will break it. There may be a similar issue on the receive side.

SuggestedRemedy

Need to e.g. control the jitter between 4 MHz and 8 MHz to a suitably small amount (which a well-designed host will readily achieve).

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Out of scope of nAUI interface. See D3.0 comment 323

Cl **83A** *SC* **83A.5.2** *P* **415** *L* **24** # 109

Dawe, Piers J G Independant

Comment Type **ER** *Comment Status* **D**

Draft now says "Applied jitter is measured using the methodology described in Annex 48B.3". 48B.3.2.2.1 says "Effective DJ and Effective RJ is calculated from the bathtub curve..." Effective DJ is not peak-to-peak of anything, it's derived to intercept points that have nothing to do with peaks and it is known that it is often smaller than the peak-peak pattern dependent jitter. Response to D3.0 comment 326 said "Peak-to-peak deterministic jitter is used in ap (CL72), 47, 85.". 85 has deleted its single use. 47 is for XAUI which is 8B/10B, where the errors are smaller. 72.7.1.8, Transmit jitter, says "The transmitter shall have a maximum total jitter of 0.28 UI peak-to-peak, composed of a maximum deterministic component of 0.15 UI peak-to-peak and a maximum random component of 0.15 UI peak-to-peak.". According to that text, they aren't talking about effective (dual-Dirac) DJ and RJ, but the jitter that's random and the jitter that's deterministic. Which is different.

SuggestedRemedy

Change "peak-to-peak deterministic jitter" to "effective Deterministic Jitter" (with capitals) twice here and three times in 83B.5.5 (or, better, use a more meaningful jitter metric).

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See table 85A-1 for use. Also see:
72.7.1.8 Transmit jitter
The transmitter shall have a maximum total jitter of 0.28 UI peak-to-peak, composed of a maximum
deterministic component of 0.15 UI peak-to-peak and a maximum random component of 0.15 UI
peak-to-peak. Duty cycle distortion (DCD) is considered a component of deterministic jitter and shall not
exceed 0.035 UI peak-to-peak. The peak-to-peak duty cycle distortion is defined as the absolute value of the
difference in the mean pulse width of a 1 pulse or the mean pulse width of a 0 pulse (as measured at the
mean of the high- and low-voltage levels in a clock-like repeating 0101 bit sequence) and the nominal pulse
width. Jitter specifications are specified for BER 10-12. Transmit jitter test requirements are specified in
72.7.1.9.
72.7.1.9 Transmit jitter test requirements
Transmit jitter is defined with respect to a test procedure resulting in a BER bathtub curve such as that
described in Annex 48B.3..

Cl **83A** *SC* **83A.5.2** *P* **415** *L* **23** # 110
Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

"The XLAUI/CAUI jitter tolerance test setup in figure 83A-15 or its functional equivalent". Functional specs are in e.g. 83.5 Functions within the PMA, 85.7 PMD functional specifications, and they are mostly about bits and bytes and topology. Here, we need the right analog, electrical behaviour.

SuggestedRemedy

Change "functional" to "electrical".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Change
"The XLAUI/CAUI jitter tolerance test setup in figure 83A-15 or its functional equivalent".

To

"The XLAUI/CAUI jitter tolerance test setup in figure 83A-15 or its electrical equivalent".

Cl **83A** *SC* **83A.7.3** *P* **419** *L* **23** # 111
Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

Why are there "No" options for mandatory features?

SuggestedRemedy

Remove. also in 83B.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Delete No from mandatory features

Cl **83B** *SC* **83B.1** *P* **415** *L* **18** # 112
Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Gratuitous capital (see D3.0 comment 316).

SuggestedRemedy

Change "Host" to "host". Correct any others found.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83B** *SC* **83B.1** *P* **415** *L* **11** # 113
Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

There are PICSs for number of lanes and lane signalling rate yet I did not see anything in 83B to justify them.

SuggestedRemedy

Add text about number of lanes to 83B.1, add signalling ("signaling") rate to Table 83B-2.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

PICS refer to 83A

Cl **83B** *SC* **83B.1** *P* **418** *L* **42** # 114
Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

D3.0 comment 329 "If 85A.4 and 86A now support 0.87 dB connector loss, 83B should at least match it (83B should not need a better connector than 86A or 85 does). But no need to deal in 1/100ths of dB (0.2%).", "Change 0.5 to 0.9 here and in Figure 83B-3. Consider reducing the host insertion loss by 0.4 dB to keep the loss budget the same" Response "See comment 851".

SuggestedRemedy

Change 0.5 to 0.9 here and in Figure 83B-3. In follow-up to 851, consider reducing the host insertion loss by 0.4 dB to keep the loss budget the same. But it may be feasible to just change the max. connector loss and increase the loss budget by 0.4 dB.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See comment 147

Cl **83B** *SC* **83B.1** *P* **418** *L* **46** # 115
Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Gratuitous capitals (see D3.0 comment 316).

SuggestedRemedy

Change "XLAUI/CAUI Component" to "XLAUI/CAUI component" twice here, once each in in Figured 83B-5 and 7.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83B** *SC* **83B.2** *P* **422** *L* **20** # 116
Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

There should be almost no blank lines in a Frame document.

SuggestedRemedy

Remove blank lines, particularly in 83B.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83B** *SC* **83B.2** *P* **421** *L* **22** # 117
Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

Progressing D3.0 comment 333: the MCB loss for nAUI B is 0.92 dB while the MCB for PPI is 0.67 dB at Nyquist. An implementation e.g. QSFP socket may be capable of either nAUI B or nPPI (and possibly CRn). It would be an advantage if the same MCB could be used with all QSFP modules. Note that the nPPI MCB and CRn cable assembly test fixture losses are already the same. Even reducing the loss to be the same as the loss to the compliance points in 83A would be a step in the right direction.

SuggestedRemedy

Reduce the nAUI B MCB reference loss towards the nPPI reference loss.
Reduce the module differential input and output return losses by twice the (positive) difference between old and new MCB losses.
Increase the module max and min "de-emphasis" by the difference at 5.15625 GHz.
Consider reduce the module min rise time slightly from 24 ps (note that 83A and 83B both have 24 ps, for same IC with different losses).
Increase the output eye Y2 by the difference at 5.15625 GHz.
The input signal tolerance eye Y2 would be affected by HCB loss not MCB but as it is the same as 83A, it isn't adjusted for the compliance board anyway.
Consider if a change to Minimum VMA eqn 83B-7 to be more like eqn 83A-4 is justified (see ghiasi_03_0509).
No changes to jitter specs or mask X parameters.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

MCB loss can be different, but one should take into account any differences (see below)

"The reference differential insertion loss of the MCB PCB is given in Equation (83B-4) and illustrated in Figure
83B-6. The effects of differences between the insertion loss of an actual MCB and the reference insertion
loss are to be accounted in the measurements."

Cl **83B** *SC* **83B.2.1** *P* **422** *L* **49** # 118
Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

Text says "De-emphasis shall be off during jitter testing." but does not say whether it's on or off for eye mask.

SuggestedRemedy

Specify if emphasis is normal or off for eye mask.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Note the following sentence: "Module electrical output de-emphasis
off state is the optimal setting for module electrical output jitter and eye mask evaluation."

Cl **83B** *SC* **83B.2.1** *P* **423** *L* **16** # 119
Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

I could not see a spec for module common mode output loss.

SuggestedRemedy

Add spec.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Incomplete suggested remedy

Cl **83B** *SC* **83B.2.4** *P* **428** *L* **25** # 120
Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

Draft says "Host XLAUI / CAUI jitter tolerance evaluation shall be conducted" yet we don't require 100% testing. Also, name doesn't match subclause title.

SuggestedRemedy

Change "Host XLAUI / CAUI jitter tolerance evaluation shall be conducted" to "Host input signal tolerance compliance shall be defined by".

Proposed Response *Response Status* **W**

PROPOSED REJECT.

"Host XLAUI / CAUI jitter tolerance evaluation shall be conducted with a stressed input signal which is comprised
of 0.25 UI peak-to-peak deterministic jitter, and 0.15 UI random jitter for BER 10-12" does not mean 100% testing is required.
[Editor's note: Clause number corrected to 83B from 82B]

Cl **83B** *SC* **83B.2.4** *P* **428** *L* **28** # 121

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

Jitter calibration should be done with maximum slew rate crosstalk for Tx side running. Similarly, need crosstalk for module's signal compliance.

SuggestedRemedy

Add extra information explaining the use of crosstalk in calibration.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Incomplete suggested remedy. Guidance for xtalk given by having all channels active

[Editor's note: Clause number corrected to 83B from 82B]

Cl **83B** *SC* **83B.2.4** *P* **428** *L* **37** # 122

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

The receiver eye mask for host input signal tolerance is the diamond mask in Fig 83A-9, Receiver template (used for Table 83A-2, Receiver characteristics), not the hexagonal mask in Fig 83A-8, Transmitter Eye Mask (used for nAUI output/driver/transmitter).

SuggestedRemedy

Change "Figure 83A-8" to "Figure 83A-9".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **85A** *SC* **85A.2** *P* **433** *L* **28** # 123

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Consistency with other changes

SuggestedRemedy

Change TX to Tx

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **86A** *SC* **86A** *P* **421** *L* **6** # 124

Dawe, Piers J G Independant

Comment Type **ER** *Comment Status* **D**

We call the MDI, MDI, whatever data rate it supports and however many lanes it has. We don't call it nMDI. Similarly with RS, PMA, and more. After two attempts at false dichotomies, we heard the only believable reason for nPPI so far, "personal preference". Response to D3.0 comment 338 restates some history and then says 'There is precedent in the base standard. Figure 1-1 uses a similar term to nPPI with "xMII" which collectively refers to different speed MII interfaces'. However, this is not precedent because MII is defined as '1.4.218 Media Independent Interface (MII): A transparent signal interface at the bottom of the Reconciliation sublayer. (See IEEE 802.3, Clause 22.)' and 22.1 says 'It is capable of supporting 10 Mb/s and 100 Mb/s rates for data transfer'. So a 1G or faster PCS service interface can't be called MII, and we have GMII, xGMII and so on. While the obvious abbreviation here, PPI, is unused.

SuggestedRemedy

Change "nPPI" to "PPI" throughout.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
For discussion. Here is the history again:
Originally the same name (PPI) was used for both 40G (4-lane) and 100G (10-lane). In response to comment 537 against draft 2.0, XLPPI and CPPI were introduced, and in addition, PPI was renamed to nPPI when referring to either or both.
Comment 63 against D 2.2 proposed to change nPPI back to PPI throughout, but this was not agreed. Response said "This term was inserted in response to comment 537 against draft 2.0. The n represents "C" or "XL" which describes the rate of operation supported by the interface and not the number of lanes."
Comment 338 against D 3.1 again proposed to change nPPI back to PPI throughout, but this was not agreed. The response added "There is precedent in the base standard. Figure 1-1 uses a similar term to nPPI with "xMII" which collectively refers to different speed MII interfaces".

Cl **86A** *SC* **86A.1** *P* **439** *L* **21** # 125

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

As it doesn't have a length (as nAUI A does), nPPI can't do anything about Delay, Skew and Skew Variation requirements; it is the associated PMD or PMA that has to comply. Text and PICS don't reference 83 for PMA. 83B doesn't mention Delay, Skew or Skew Variation.

SuggestedRemedy

Delete the sentence "The Delay nPPI shall comply with the Delay, Skew and Skew Variation requirements for nPPI are as in 86.3.", reverse the order of the next two sentences for readability. Delete PICS D and SF2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Keeping these would be PICS duplication, would have to change 86A.1 from "requirements in 86.3" to "requirements in 86.3, 83.5.3.3, 83.5.3.4 and/or 83.5.4 as appropriate", and change PICS from MO:M to M, and also would have to add similar iext and PICS to 83A and 83B.
In 86A.1, delete "The nPPI shall comply with the Delay, Skew and Skew Variation requirements in 86.3." and reverse the order of the next two sentences for readability, or change to "The PMD or PMA attached to the nPPI complies with the Delay, Skew and Skew Variation requirements in 86.3, 83.5.3.3, 83.5.3.4 and/or 83.5.4 as appropriate".
Delete PICS D and SF2.

Cl **86A** *SC* **86A.4.1** *P* **440** *L* **46** # 126

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D** *xtalk*

Completing the crosstalk specs added last time

SuggestedRemedy

Add two rows for crosstalk generator, here and Table 86-2. Any more text needed? Compare SFP+. Also need to state that crosstalk in 83A, 83B is at max slew rate, e.g. by adding similar rows.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Note similar principles should be applied to 83A, 83B and 86A.
Add extra rows to Table 86A-1 Crosstalk source VMA, each input lane 700 mV At TP4; Crosstalk source transition times, 20% to 80% 34 ps At TP4
Change first sentence in 86A.4.1 from: "if measured at TP1a (see 86A.5.1), shall" to "if measured at TP1a (see 86A.5.1) with the specified crosstalk signals applied on all input lanes, shall".
Change second sentence from "if measured at TP1 and TP1a, shall" to "if measured at TP1 and TP1a with all Rx lanes (module output) operating, shall"
In Table 86A-2, add two rows
Crosstalk calibration signal VMA TP4 850 mV, While calibrating compliance signalb,
Crosstalk calibration signal transition times, 20% to 80% TP4 34 ps
Table footnote b The crosstalk calibration signals are applied to the mated HCB-MCB at TP4a and measured at TP4 following the same principles as the host electrical input calibration (see 86A.5.3.8.5). They are removed before testing.
In 83A.5.1 and 83A.5.2 and 83B.2.3, change "All XLAUI/CAUI lanes shall be active during" to "All XLAUI/CAUI lanes shall be active with maximum VMA and minimum rise/fall times during".
Implementation as dawe_02_0310. See comments 34 121 127 140 151.
In 83A.5.1, after "All XLAUI/CAUI lanes shall be active during transmit jitter testing to ensure any lane-lane crosstalk is included in the jitter evaluation." add "The input lanes are operated with maximum amplitude and minimum rise time.".

Cl **86A** *SC* **86A.4.2** *P* **443** *L* **31** # 127

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D** *xtalk*

Completing the crosstalk specs added last time

SuggestedRemedy

Add two rows for crosstalk generator, same parameters as Table 86A-4.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response to comment 126. Also, in 86.8.2.1 after "so that crosstalk effects are included.", insert "Where not otherwise specified, the maximum amplitude (OMA or VMA) for a particular situation is used, and for counter-propagating lanes, the minimum transition time is used."
See also comments 34 140 151

Cl **86A** *SC* **86A.5.3.8.3** *P* **455** *L* **6** # 128

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

Arrow at crosstalk generator points wrong way

SuggestedRemedy

Reverse direction of arrow, show arrows into "Test signal characterization" and within "System under test".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **86A** *SC* **86A.5.3.8.3** *P* **455** *L* **6** # 129

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Inconsistent open arrow sizes (showing mechanical insertion)

SuggestedRemedy

Fix.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **86** *SC* **86.8.4.7** *P* **316** *L* **52** # 130

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

Sinusoidal jitter is defined at fix 80 MHz but the amplitude is missing

SuggestedRemedy

If you look at 52.9.9 it allow SJ range from 0.05 to 0.15 UI which is not consistant with CL86 Fig 86-A10. Please add 0.05 UI amplitude

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Unlike 52.9.9, there is a J9 spec that defines the steepness of the distribution, so a clean bimodal distribution is not allowed. An allowed range of SJ is needed to avoid difficulties in sourcing an extremely accurate Bessel-Thomson filter. If we knew enough we might be able to reduce that range.

Cl **85** *SC* **85.7.10** *P* **257** *L* **26** # 131

Dudek, Michael QLogic Corporation

Comment Type **ER** *Comment Status* **D**

"mapped to" is duplicated

SuggestedRemedy

delete one instance

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.8.3** *P* **258** *L* **35** # 132

Dudek, Michael QLogic Corporation

Comment Type **TR** *Comment Status* **D**

In table 85-5 it makes no sense to say the Transmitter DC amplitude shall be greater than or equal to 0.63*transmitter DC amplitude, and I believe the text on line 17 indicates that the table was incorrectly adjusted.

SuggestedRemedy

move the "greater than or equal to 0.63*transmitter DC amplitude" in table 85-5 from the row it is on to a new row labelled Peak value of linear fit pulse.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. See response comment#10.

Cl **85** *SC* **85.8.3.5** *P* **265** *L* **45** # 133

Dudek, Michael QLogic Corporation

Comment Type **TR** *Comment Status* **D**

Figure 85-5 is not implemented as was suggested in draft 3.0 comment 831. The DUT is still not drawn in the figure and the dotted DUT box is in the wrong place.

SuggestedRemedy

Remove the box labelled DUT around the test fixture. Add a DUT to the left of the figure. Figure 85-14 with the Cable Assembly test fixture relabelled DUT (and the test interface on the left removed shows how the DUT should look.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Editor to provide figure for review of suggested remedy

See diminico_04_0310

Cl **85** *SC* **85.8.3.7** *P* **266** *L* **19** # 134

Dudek, Michael QLogic Corporation

Comment Type **TR** *Comment Status* **D**

It is somewhat ambiguous as to whether this loss is the loss of the test fixture or just the PCB in the test fixture.

SuggestedRemedy

Change to "is the reference test fixture PCB insertion loss at frequency f."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.8.4.2.3** *P* **269** *L* **34** # 135

Dudek, Michael QLogic Corporation

Comment Type **TR** *Comment Status* **D**

In figure 85-8 the calibration test reference should be at the output of the cable assembly test fixture

SuggestedRemedy

Move the test reference on the right to be at the output of the cable assembly test fixture.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

In Figure 85-8 move the arrow hatched line labeled
test reference at LUT_Rx arrow end to the HTx arrow end adjacent to cable assembly test fixture to more accurately reflect the test reference and to avoid having the solid arrowed lines being confused with attachment cables.

Cl **85** *SC* **85.8.4.2.3** *P* **269** *L* **50** # 136

Dudek, Michael QLogic Corporation

Comment Type **TR** *Comment Status* **D**

No guidance is given as to what changes should be made to the test system if the MDNEXT does not meet the value in table 85-8, or what the rise time/amplitude of the HTx signals are.

SuggestedRemedy

Add to the end of the second sentence in this paragraph "defined in table 85-11. Change the last sentence to say. "The cable assembly is chosen such that the RMS value of the integrated etc.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change:"HTx is the set of 4
or 10 transmit lanes of the device under test corresponding to the 4 or 10 near-end crosstalk disturbers."
To:"HTx is the set of 4
or 10 transmit lanes of the device under test corresponding to the 4 or 10 near-end crosstalk disturbers with parameters given in Table 85-11.

Cl **85** *SC* **85.8.4.2.4** *P* **270** *L* **18** # 137

Dudek, Michael QLogic Corporation

Comment Type **TR** *Comment Status* **D**

There is something drastically wrong with equation 85-18. If the risetime were only 1 ps too small the value of a4 would change from 0.04 to about 2x10^8

SuggestedRemedy

I will work with others to determine what the correct equation should be.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: "If the rise and fall times are less than 47 ps the
value of a4 in Table 85-8 is increased by Equation (85-18)"

To:" If the rise and fall times of the pattern generator, Tr, are less than 47 ps the value of a4 in Table 85-8 is increased by the value da4 from Equation (85-19)

Change equation (85-19) to "da4 = 60.51x10^-6(47^2 - Tr^2)"

Cl **85** *SC* **85.8.3.3.2** *P* **262** *L* **20** # 138

Dudek, Michael QLogic Corporation

Comment Type **T** *Comment Status* **D**

Comment 830 on draft 3.0 not fully implemented

SuggestedRemedy

Delete the "to" between "measured" and "prior"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Change:"to be the difference in the value measured to prior to"
To:"to be the difference in the value measured prior to"

Cl **85** *SC* **85.10.6** *P* **275** *L* **52** # 139

Dudek, Michael QLogic Corporation

Comment Type **E** *Comment Status* **D**

duplicated "the"

SuggestedRemedy

remove one

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **86** *SC* **86.8.2.1** *P* **313** *L* **15** # 140

Dudek, Michael QLogic Corporation

Comment Type **TR** *Comment Status* **D** *xtalk*

Electrical Crosstalk in the optical receiver photo-detector area is a potential dominant degradation. Allowing all the lanes to be at the same input OMA during the stressed receiver sensitivity test is very benign. The specification should be changed to include this crosstalk stress with the other lanes set to the maximum OMA expected when the channel under test is at the stressed sensitivity level. The channels would then be tested one at a time. At the moment the Tx is allowed to have a maximum OMA of +3dBm on any channel, but for any of the channels to be at the stressed receiver condition a maximum loss cable must be present, and it is expected that all the lanes will have close to the same cable loss at a max value of 0.4dB. (connector loss will however be very variable from lane to lane). This results in a max receiver OMA on other lanes of 2.6dBm. Restricting the variation in OMA between lanes in the Tx would reduce the OMA required to be considered in the stressed test. The suggested value in the suggested remedy is 4.5dB variation in Tx OMA that with 1.5dB variation in connector loss gives 6dB variation in receiver OMA.

SuggestedRemedy

Change sentence from
"Either each receive lane is stressed in turn while all are operated, or all can be stressed together" to
"To ensure that maximum crosstalk stress is applied each receive lane is stressed in turn while all others are operated with the received OMA defined in the stressed test."
Insert a row in the conditions of stressed receiver sensitivity section of table 86-8. "OMA of other channels" value to be either
Option A 2.6dBm
Option B 0.6dBm and add a row to Table 86-6 "Maximum difference in OMA between any lanes" Value to be 4.5dB.
Change the sentence on page 317 line 5 from "The interface BER of the PMD receiver is the average of the BER of all receive lanes while stressed
and at the same receive OMA" to "The interface BER of the PMD receiver is the average of the BER of all receive lanes while stressed."
Change the sentence on page 317 line form
"All receive lanes may be stressed at the same time, or each receive lane may be stressed in turn" to
"All receive lanes are stressed in turn"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement changes as in dawe_02_0310 which are listed below and in the other responses referenced.
86.8.2.1 Change from, "Either each receive lane is stressed in turn while all are operated, or all can be stressed together." to "One or more receive lanes are stressed in turn while all are operated. All aggressor lanes are operated as specified."
86.8.4.7f, change "while stressed and at the same receive OMA" to "while stressed and at the specified receive OMA"
86.8.4.7, from "All receive lanes may be stressed at the same time, or each receive lane may be stressed in turn." to "One or more receive lanes are tested in turn while all

aggressor receive lanes are operated as specified in Table 86-8."
86.8.4.8 from "All receive lanes may be stressed at the same time, or each receive lane may be stressed in turn" to "One or more receive lanes are tested in turn while all are operated. All aggressor lanes are operated as specified in Table 86-8."
Insert a row in the conditions of stressed receiver sensitivity section of Table 86-8: "OMA of each aggressor lane", value -5.4 +4 (Tx OMA variability) +1 (cable plant variability) = -0.4 dBm and the same for jitter tolerance,
insert row in Table 86-6 "Difference in OMA between any lanes" max 4 dB (exact numbers may be affected by comment 32 and presentation).
86A.5.3.8.1 from "Either each Rx lane is stressed in turn or they are all stressed at the same time." to "One or more Rx lanes are stressed in turn while all lanes are operated. Aggressor lanes are operated as specified in Table ." Add specs for aggressor lanes at TP4 to Table 86A-4, VMA 850 mV. Correct the crosstalk calibration signal transition time from 28 to 34 ps.
86A.5.3.8.6 from "Either each lane is stressed in turn while all are operated, or all can be stressed together." to "One or more lanes are tested in turn while all are operated. Aggressor lanes are operated with the VMA specified in Table 86A-4."
Give editor licence to adjust the implementation to address errors and oversights.
And see responses to comments 34 126 127 151.

Cl **87** *SC* **87.8.11.2** *P* **343** *L* **54** # 141

Dudek, Michael QLogic Corporation

Comment Type **T** *Comment Status* **D**

Now that we are calling this J2 there is no need to introduce another acrynom SEJ

SuggestedRemedy

Delete SEJ here, on page 344 line 1 and 345 line 18 replace SEJ with J2

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The acronym SEJ is used in other parts of 802.3. Using the term SEJ here indicates to the reader that this is jitter specifically introduced as part of the stressed receiver sensitivity test, and is consistent with, for example, clause 52.

Cl **87** *SC* **87.8.11** *P* **342** *L* **48** # 142

Dudek, Michael QLogic Corporation

Comment Type **TR** *Comment Status* **D**

This stressed receiver sensitivity test is basically the same as that used in Clause 52 which created significant problems for 10GBASE-SR testing as the test signal was not sufficiently well constrained. The 100GBASE-ER4 which uses this procedure has the same vertical eye closure penalty and J2 requirements as 10GBASE-SR had. It is therefore likely that the same problems may be encountered.

SuggestedRemedy

On Page 342 line 48 change 0.25 to 0.15
On Page 345 line 4 Change two thirds to 80%

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The example SRS test set up in D3.1 describes separate control of jitter and eye closure which is significantly different from Clause 52. It allows more precise setting of jitter and eye-closure stress levels. In addition, applied SJ at high frequency has been tightened to a single value, which helps to constrain tester variability. At 28G line rate (100GBASE-ER4) D3.1 describes a max value of 0.25UI jitter at 1e-12 points, which corresponds to <0.5 ps rms jitter, a demanding target for test equipment.

Cl **83A** *SC* **83A.3.3** *P* **399** *L* **11** # 143

Dudek, Michael QLogic Corporation

Comment Type **TR** *Comment Status* **D**

It is ambiguous as to whether the Table 83A-1 specifications are to be met at the Transmitter or at the Transmitter Compliance point. If they are not at the transmitter compliance point then why do we have a transmitter compliance point? Note however that the loss from the transmitter to the transmitter compliance point is a maximum not a reference value so if we use that point then we have created some uncertainty in the measurement.

SuggestedRemedy

Change "The XLAUI/CAUI transmitter characteristics are specified in Table 83A--1." to "The XLAUI/CAUI transmitter characteristics measured at the transmitter compliance point are specified in Table 83A--1.
Change the specifications maximum losses to reference losses
On line Change "The differential insertion loss, expressed in decibels, between the Transmitter and the Transmit Compliance Point shall be less than the insertion loss defined in Equation (83A-1) and illustrated in Figure 83A--3." to "The reference differential insertion loss, expressed in decibels, between the Transmitter and the Transmit Compliance Point shall be the insertion loss defined in Equation (83A-1) and illustrated in Figure 83A--3. "
In equation 83A-1 change the inequality sign to equals. In figure 83A-3 remove "meets equation constraints.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change "The XLAUI/CAUI transmitter characteristics are specified in Table 83A--1." to "The XLAUI/CAUI transmitter characteristics measured at the transmitter compliance point are specified in Table 83A--1.

Change 83A.2.1:
"The differential insertion loss, expressed in decibels, between the Transmitter and the Transmit Compliance Point shall be less than the insertion loss defined in Equation (83A-1) and illustrated in Figure 83A--3." to "The reference differential insertion loss, expressed in decibels, between the Transmitter and the Transmit Compliance Point is defined in Equation (83A-1) and illustrated in Figure 83A--3. "
In equation 83A-1 change the inequality sign to equals. In figure 83A-3 remove "meets equation constraints.

Remove PICS TC1

Cl **83A** *SC* **83A.3.4** *P* **403** *L* **23** # 144

Dudek, Michael QLogic Corporation

Comment Type **TR** *Comment Status* **D**

It is ambiguous as to whether the Table 83A-2 specifications are to be met at the Reiceiver or at the Receiver Compliance point. If they are not at the receiver compliance point then why do we have a receiver compliance point? Note however that the loss from the receiver to the receiver compliance point is a maximum not a reference value so if we use that point then we have created some uncertainty in the measurement.

SuggestedRemedy

Change "Receiver characteristics are specified in Table 83A--2" to "Receiver characteristics at the receiver compliance point are specified in Table 83A--2.
Change the specifications maximum losses to reference losses
On line Change "The differential insertion loss, expressed in decibels, between the Receiver and the Receive Compliance Point and the Receiver shall be less than the insertion loss defined in Equation (83A-2) and illustrated in Figure 83A--4" to "The reference differential insertion loss, expressed in decibels, between the Receiver and the Receive Compliance
Point and the Receiver shall be as defined in Equation (83A-2) and illustrated in Figure 83A--4 "
In equation 83A-2 change the inequality sign to equals. In figure 83A-4 remove "meets equation constraints."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change "Receiver characteristics are specified in Table 83A--2" to "Receiver characteristics at the receiver compliance point are specified in Table 83A--2.

In section 83A.2.2
Change "The differential insertion loss, expressed in decibels, between the Receiver and the Receive Compliance Point shall be less than the insertion loss defined in Equation (83A-2) and illustrated in Figure 83A--4" to "The reference differential insertion loss, expressed in decibels, between the Receiver and the Receive Compliance
Point is defined in Equation (83A-2) and illustrated in Figure 83A--4 "
In equation 83A-2 change the inequality sign to equals. In figure 83A-4 remove "meets equation constraints."

Remove PICS RC1

Cl **83B** *SC* **83B.1** *P* **423** *L* **18** # 145

Dudek, Michael QLogic Corporation

Comment Type **TR** *Comment Status* **D**

There is still confusion in the loss budgets for XLAUI/CAUI. The following numbers are all at Nyquist Equation 83A-9 has 10dB loss for the channel between the Tx and Rx chips. This is divided up in 83B as 7.9dB for the host, 2.1dB for the module and an extra 0.5dB appears from nowhere for the connector. If the chip to chip loss budget is really 10.5dB then Equation 83A-9 needs to be modified or revised to say PCB loss and an additional allocation of 0.5dB for the connector needs to be discussed in the channel section 83A-4.

SuggestedRemedy

Scale equation 83A-9 to have 10.5dB loss at Nyquist and redraw the illustrative figure.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Equation 83A-9 is already at 10.5dB loss at Nyquist.

Cl **83B** *SC* **83B.2** *P* **417** *L* **21** # 146

Dudek, Michael QLogic Corporation

Comment Type **T** *Comment Status* **D**

The extra sentence inserted in this draft "Chip-module devices shall meet the electrical characteristics
defined in this section" is not helpful where it has been added.

SuggestedRemedy

Either delete the sentence or move it to the end of 83B.1

Proposed Response *Response Status* **W**

PROPOSED REJECT.

83B.2 is the section which defines the electrical characteristics for the chip-module I/O.

Cl **83B** *SC* **83B.1** *P* **415** *L* **16** # 147

Dudek, Michael QLogic Corporation

Comment Type **TR** *Comment Status* **D**

Having a maximum connector loss for XLAUI/CAUI of only 0.5dB is too restricitive. As the major loss part of the connector is part of the host it makes sense that the combined lost of the host PCB + connector is controlled but that the host vendor can make a trade off between a better connector and a better PCB. (within the return loss constraints for the host.)

SuggestedRemedy

Change "Figure 83B--3 and Table 83B--1 summarize the differential insertion loss budget associated with the chip-module application" to
"Figure 83B--3 and Table 83B--1 summarize an example differential insertion loss budget associated with the chip-module application"
At the end of the paragraph add "A maximum connector loss of 0.5dB has been assumed in this example, however provided the host PCB loss plus connector loss is not exceeded and the other host specifications are met a higher loss connector is allowed coupled with a lower loss PCB."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change "Figure 83B--3 and Table 83B--1 summarize the differential insertion loss budget associated with the chip-module application" to
"Figure 83B--3 and Table 83B--1 summarize an example differential insertion loss budget associated with the chip-module application"

See comment 114

Cl **83C** *SC* **83C.2.2** *P* **431** *L* **18** # 148

Dudek, Michael QLogic Corporation

Comment Type **E** *Comment Status* **D**

Text is on top of other text

SuggestedRemedy

fix it.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85A** *SC* **85A.5** *P* **436** *L* **10** # 149

Dudek, Michael QLogic Corporation

Comment Type **ER** *Comment Status* **D**

This paragraph is a general introduction and would be better placed at the beginning of the section

SuggestedRemedy

move it to page 435 line 25

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **86A** *SC* **86A.4.2** *P* **443** *L* **19** # 150

Dudek, Michael QLogic Corporation

Comment Type **T** *Comment Status* **D**

The parameter name "Host input signal tolerance, interface BER limit" still doesn't seem right. It isn't the BER of the host input signal that it has to tolerate.

SuggestedRemedy

Change to "interface BER limit"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This row was introduced into the table by comment 194 against D 2.2 because "there is no explicit entry for a signal or jitter tolerance attribute, only the conditions are listed."
The parameter name was changed to "Host input signal tolerance, interface BER limit" by comment 382 against D 3.0.
The name "Interface BER limit" does not make it clear that the row refers to the Host input signal tolerance test. Alternatively, accept in principle:
The optical signal tolerances (stressed sensitivity and jitter tolerance) don't have such a row. Delete the row (the BER limit is in the test procedure). Change the next row to "Host electrical receiver signal tolerance, test conditions as follows:b", but following D3.0 comments 341 and 382, change "electrical receiver" to "input", giving "Host input signal tolerance, test conditions as follows:b".

Cl **86A** *SC* **86A.4.2** *P* **443** *L* **3** # 151

Dudek, Michael QLogic Corporation

Comment Type **TR** *Comment Status* **D** *xtalk*

When we added the crosstalk calibration amplitude and rise/fall times to Table 86A-4 we should have also added them to the test for the module output.

SuggestedRemedy

Either add extra rows to Table 86A-3 (and an extra column to label which port the measurement is at or add an extra sentence on page 443 line 3. The specifications shall be met with electrical crosstalk signals input to the Tx with the amplitude and rise/fall times given in table 86A-4.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Clean p442 line 27. Add extra rows to Table 86A-3 Crosstalk source VMA, each lane 700 mV At TP1a Crosstalk transition times, 20% to 80% 34 ps At TP1a
Change first sentence in 86A.4.2: "per the definitions in 86A.5." to "per the definitions in 86A.5 while the specified crosstalk are applied to the module's electrical input.". See comments 34 126 127 140.

Cl **83B** *SC* **83B.2** *P* **419** *L* **40** # 152

Dudek, Michael QLogic Corporation

Comment Type **ER** *Comment Status* **D**

The diagram 83B-7 should be clarified.

SuggestedRemedy

Put a dotted line round the module part of the diagram encompassing the module PCB and XLAUI/CAUI component. Increase the size of the label "module". Also for 83B-5 for the host.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Modules can contain more than just the XLAUI/CAUI component. Diagram is to illustrate the loss budgets for respective sections

Cl **83B** *SC* **83B.2.3** *P* **424** *L* **15** # 153

Dudek, Michael QLogic Corporation

Comment Type **T** *Comment Status* **D**

It is not clear from figure 83B-10 exactly where the calibration point is. It could be interpreted that calibration is at SMA's on the fig 83B-10 test equipment and then the HCB is added to get the signal into the host. In fact the specifications have been written such that the HCB is part of the test equipment, and the signal should be calibrated at the output of an MCB plugged into this.

SuggestedRemedy

In Fig 83B-10 show the HCB on the output of the test equipment and the MCB being used on the calibration test equipment as is shown in 86A-8.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See comment 171

Cl **86** *SC* **86.8.4.7** *P* **316** *L* **52** # 154

Ghiasi, Ali Broadcom

Comment Type **T** *Comment Status* **D**

Sinusoidal jitter is defined at fix 80 MHz but the amplitude is missing. If you look at 52.9.9 it allow SJ range from 0.05 to 0.15 UI which is not consistant with CL86 Fig 86-A10. Please add 0.05 UI amplitud

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Duplicate, see comment 130.

Cl **86** *SC* **86.8.4.7** *P* **316** *L* **52** # 155

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

Sinusoidal jitter is defined at fix 80 MHz but the amplitude is missing

SuggestedRemedy

Sinusoidal jitter is defined at fix 80 MHz but the amplitude is missing

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Duplicate, see comment 130.

Cl **83A** *SC* **83A.2** *P* **396** *L* **42** # 156

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

Please add following text to clarify definition of XLAUI/CAUI channel

SuggestedRemedy

XLAUI/CAUI channel is defiend from the transmit chip ball to the receive chip ball

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add the following sentence to 83A.2:
"XLAUI/CAUI channel is defined from the transmit chip pin/ball to the receive chip pin/ball"

Cl **83A** *SC* **83A.2.1** *P* **397** *L* **21** # 157

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

Compliance point definition is not clear and the insertion loss for transmit compliance channel should be target and not less than

SuggestedRemedy

Updted para"The target differential insertion loss, expressed in decibels, from the transmitter chip ball to the Transmit Compliance Point loss is defiend in Equation (83A-1) and illustrated in Figure 83A-3. Also remove Meets Equation constrains

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment 143

Cl **87** *SC* **87.8.2** *P* **339** *L* **11** # 158

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

Not defined what kind of square wave 1010, 8 1's 8 0's

SuggestedRemedy

Please clarify it as 8 1's 8 0's for OMA on line 11 and 22

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The Square wave is defined in table 87-10; Square wave is the pattern name, it's description says 8 ones, 8 zeroes

Cl **83A** *SC* **83A.2.2** *P* **397** *L* **7** # 159
Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

Compliance point definition is not clear and the insertion loss for receive compliance channel should be target and not less than

SuggestedRemedy

Updted para"The target differential insertion loss, expressed in decibels, from the receive chip ball to the Receive Compliance Point loss is defiend in Equation (83A-1) and illustrated in Figure 83A-3. Also remove Meets Equation constrains from the Figure

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See comment 144

Cl **83A** *SC* **83A.3.3.1** *P* **400** *L* **7** # 160
Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

It is defined what test pattern to use for De-emphasis measurement.VMA reference CL86A.5.3.5 which allow either using square pattern of any length or PSBS9, we can't have it open ended in CL83A

SuggestedRemedy

Differential peak-peak amplitude is measured with square wave of 1010 pattern or with 10/01 transition in the PRBS9 VMA is measured with square wave of 8 1's and 8 0's or with PRBS9 pattern by measureing and summing peak amplitude of 8's plus with peak amplitude of 8'0 portion of the pattern

Proposed Response *Response Status* **W**

PROPOSED REJECT.

CL86A.5.3.5 does not allow pattern of any length: it's 8+8. VMA does not use peak amplitude.

Cl **83A** *SC* **83A.0** *P* **395** *L* **5** # 161
Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

Meets equation constrain is not best wording

SuggestedRemedy

Compliant Channel, Output, Host, or Inpu

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Meets equation constraint was agreed in comment 611 in D3.0

Cl **83b** *SC* **83b.0** *P* **415** *L* **5** # 162
Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

Meets equation constrain is not best wording

SuggestedRemedy

Replace with "Compliant Channel, Output, Host, or Input

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See comment 161

Cl **83A** *SC* **83A.4** *P* **407** *L* **42** # 163
Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

Equation 83A-10 broken { }

SuggestedRemedy

Please correct

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Don't see issue

Cl **83A** *SC* **83A.4** *P* **407** *L* **31** # 164
Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

Equation 83A-10 broken { }

SuggestedRemedy

Please correct

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Don't see issue

Cl **83A** *SC* **83A.5.2** *P* **409** *L* **42** # 165
Ghiasi, Ali Broadcom

Comment Type **ER** *Comment Status* **D**
Please remove - after frequency

SuggestedRemedy
Remove

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

See suggested remedy

Cl **83B** *SC* **83B.1** *P* **415** *L* **42** # 166
Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**
Equation still has disconnect at 7 GHz

SuggestedRemedy
To remove the disconnect Eq 83B-1 2nd half need to be updated to -11.82 + 3.15*f

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

See suggested remedy

Cl **83B** *SC* **83B.1** *P* **416** *L* **5** # 167
Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**
Equation still has disconnect at 7 GHz

SuggestedRemedy
To remove the disconnect Eq 83B-2 2nd half need to be updated to -3.155 + 0.84*f

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

See suggested remedy

Cl **83B** *SC* **83B.1** *P* **416** *L* **45** # 168
Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**
HCB and MCB up to 7.9 dB or 2.1 dB, what frequency

SuggestedRemedy
Either add frequency for the insertion loss or remove the dB loss from the figure

Proposed Response *Response Status* **W**
PROPOSED REJECT.

Frequency is in the figure title

Cl **83B** *SC* **83B.2** *P* **418** *L* **35** # 169
Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**
HCB and MCB up to 7.9 dB or 2.1 dB, what frequency

SuggestedRemedy
Either add frequency for the insertion loss or remove the dB loss from the figure

Proposed Response *Response Status* **W**
PROPOSED REJECT.

See frequency in figure title.

Cl **83B** *SC* **83B.2** *P* **419** *L* **38** # 170
Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**
HCB and MCB up to 7.9 dB or 2.1 dB, what frequency

SuggestedRemedy
Either add frequency for the insertion loss or remove the dB loss from the figure

Proposed Response *Response Status* **W**
PROPOSED REJECT.

See frequency in figure title

Cl **83B** *SC* **83B.2** *P* **424** *L* **13** # 171
Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

Host input compliance point, HCB missing

SuggestedRemedy

Add HCB to the figure and align the arrow after the summer

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment 153

Cl **86A** *SC* **86A.5.2** *P* **448** *L* **46** # 172
Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

Transition time measured with squre wave could result is not accurate if square waave of 1010 is used for the measurement as the pulse may not reach full rise time

SuggestedRemedy

Repalce square wave with square wave of 8 1's and 8 0's

Proposed Response *Response Status* **W**

PROPOSED REJECT.

In each of 86.8.2, 87.8.1, 86A.5.2, there is a sentence like "Table 86-11 lists the defined test patterns" or "The test patterns used in this clause are shown in Table 87-10", and the table says 8 ones, 8 zeros.

Cl **86A** *SC* **86A.5.3.5** *P* **451** *L* **20** # 173
Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

VMA can not be measured with undefined square wave

SuggestedRemedy

replace with square wave of 8 1's and 8 0's

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

It's already defined: 86A.5.2 "Table 86-11 lists the defined test patterns", Table 86-11 "Square wave (8 ones, 8 zeros)", "Pattern defined in 83.5.10", 83.5.10 "8 ones followed by 8 zeros". But as it's called out in e.g. 87.8.5 and 86A.5.3.3, after "square wave" insert (8 ones, 8 zeros)".

Cl **86A** *SC* **86A.5.3.8.2** *P* **452** *L* **23** # 174
Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

Figure label out of place

SuggestedRemedy

Move TP1 up by 0.25

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Does comment mean TP1a?

Cl **85** *SC* **85.11** *P* **238** *L* **29** # 175
Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

It is not clear what is the minimum set of requirement for connecting host SerDes to the MDI contact in Clause 85. Clause 85 allow any connection.Also see comment 267 on D3.0

SuggestedRemedy

Add paragraph under 85.11 describing what is the requried minimum connection between host PMD SerDes and the MDI contact. Here is the text:The PMD subclasue for 40GBase-CR4 and 100GBase-CR10 must meet requriement of CL73 Autonegotiation which require connecting host lane 0 to PMD lane 0 and meet the transmitter training of 85.8.3.3 where each host lane (TX and RX) be connected to an MDI lane (TX and RX)

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Text is unnecessay as 40GBASE-CR4 and 100GBASE-CR10 are required to support AN clause 73 (see Table-85-1). In addition, Figure 85-2 and Figure 85-19 illustrate source lane to destination lane labeling which are than associated with the MDI contacts/pins in Table-85-13,Table-85-14 and Table 85-15.

Cl **45** *SC* **45.2.1.96** *P* **70** *L* **3** # 176
Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Why does Register 1.1510 come between 1.1500 and 1.1501?

SuggestedRemedy

Re-order.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Re-order as per comment #17

Cl **83A** *SC* **83A.2.2** *P* **399** *L* **3** # 177

Dawe, Piers J G Independant

Comment Type **ER** *Comment Status* **D**

Equation 83A-2 is the same as Equation 83A-1. Repeating identical equations wastes the reader's time.

SuggestedRemedy

Delete Equation 83A-2, on p398 line 51 refer to Equation 83A-1 instead.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
See comment 178

Cl **83A** *SC* **83A.2.2** *P* **399** *L* **3** # 178

Dawe, Piers J G Independant

Comment Type **ER** *Comment Status* **D**

Figure 83A-4 is the same as Figure 83A-3. Repeating identical charts makes the document unnecessarily long, means that very little information can be seen on any page, and wastes the reader's time. Also fixing some capitals.

SuggestedRemedy

Delete Figure 83A-4, on p398 line 51 refer to Figure 83A-3 instead. Change title of Figure 83A-3 to "Insertion loss between transmitter or receiver and compliance point".

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Figures / equations are the same, but there is value in having separate sections for transmitter / receiver.

Cl **83A** *SC* **83A.3** *P* **400** *L* **5** # 179

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

"defined in this section": we have clauses, annexes, subclauses (is a subdivision of an annex is a subclause?) Not clear what a "section" is, need to be clear this time because of the "shall".

SuggestedRemedy

Here, change "this section" to "83A.3.1, 83A.3.2, 83A.3.3, and 83A.3.4".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83A** *SC* **83A.3.3** *P* **400** *L* **31** # 180

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Subclause Reference

SuggestedRemedy

Change to: Subclause reference, or more simply, just "Subclause" or just "Reference". I think the last is preferable.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change to Subclause reference [lower case r], also make change for table 83B-5

Cl **83A** *SC* **83A.3.3** *P* **400** *L* **26** # 181

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

signaling rate shall be the signaling rate defined in

SuggestedRemedy

Change to: signaling rate shall be as defined in (or delete the sentence completely; the previous sentence covers it, why call out just this one parameter?)

Proposed Response *Response Status* **W**

PROPOSED REJECT.

A shall statement is needed for the signaling rate specified in table 1

Cl **83A** *SC* **83A.3.4.3** *P* **408** *L* **33** # 182

Dawe, Piers J G Independant

Comment Type **ER** *Comment Status* **D**

Equation 83A-7 is the same as Equation 83A-5. Repeating identical equations wastes the reader's time.

SuggestedRemedy

Delete Equation 83A-7, in Table 83A-2 and p408 line 27 refer to Equation 83A-5 instead.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See comment 178

Cl **83A** *SC* **83A.3.4.3** *P* **409** *L* **28** # 183

Dawe, Piers J G Independant

Comment Type **ER** *Comment Status* **D**

Figure 83A-10 is the same as Figure 83A-6. Repeating identical charts makes the document unnecessarily long, means that very little information can be seen on any page, and wastes the reader's time. Also fixing some capitals.

SuggestedRemedy

Delete Figure 83A-10, on p408 line 28 refer to Figure 83A-6 instead. Change title of Figure 83A-6 to "Differential output or input return loss", and the y axis to "Differential return loss".

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See comment 178

Cl **83A** *SC* **83A.4** *P* **412** *L* **24** # 184

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

What do you mean by return loss of a channel? Is this with the XLAUI/CAUI component on the far end, or an ideal 100 ohm load, or what?

SuggestedRemedy

Please add clarification.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change
The value for minimum return loss is summarized in Equation (83A-10) and illustrated in Figure 83A-14

to

The minimum return loss assuming a 100 ohm terminating impedance is given in Equation (83A-10) and
illustrated in Figure 83A-14

Cl **83A** *SC* **83A.4** *P* **414** *L* **45** # 185

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Here we have "XLAUI / CAUI" with spaces, just before and after we have "XLAUI/CAUI" without.

SuggestedRemedy

Pick one form and use it throughout the draft.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Remove space

Cl **83A** *SC* **83A.5.2** *P* **415** *L* **23** # 186

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Repetition in "The XLAUI/CAUI jitter tolerance test setup in figure 83A-15 or its functional equivalent shall meet the
minimum receiver eye mask defined in Table 83A-2.", "Figure 83A-15 depicts the XLAUI/CAUI Jitter Tolerance test setup. The amplitude and output jitter of the filter stress + plus limiter and random jitter injection shall meet the minimum receiver eye mask defined in Table 83A-2."

SuggestedRemedy

Wordsmithing needed

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Second reference to the figure is redundant. Delete: Figure 83A-15 depicts the XLAUI/CAUI Jitter Tolerance test setup.

Cl **83A** *SC* **83A.5.2** *P* **415** *L* **23** # 187

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

When the draft says "meet the minimum receiver eye mask", does it mean comply (could be be better) or touch (can't be better)?

SuggestedRemedy

Change "meet" to "comply with" or "touch ... at the four corners", depending which is meant. Also in 83B.2.4.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Meet the minimum receiver eye mask is appropriate wording

Cl **83A** *SC* **83A.5.2** *P* **415** *L* **24** # 188

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

"minimum receiver eye mask defined in Table 83A-2". Yet there is only one mask in Table 83A-2, and it is fixed in size. There is no "minimum".

SuggestedRemedy

Delete "minimum" before "receiver eye mask", twice here and once in 83B.2.4.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83A** *SC* **83A.5.2** *P* **415** *L* **24** # 189

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

This says "The PRBS31 test pattern in 83.5.10 or scrambled idle in 82.2.10 shall be used for evaluating XLAUI/CAUI jitter tolerance" while the equivalent in 83B.2.4 is "The recommended pattern for evaluating XLAUI/CAUI jitter tolerance is scrambled idle in 82.2.10 or PRBS31 in 83.5.10". "shall" vs. "recommended".

SuggestedRemedy

Change both to "The PRBS31 pattern defined in 83.5.10 or scrambled idle defined in 82.2.10 is used for evaluating XLAUI/CAUI jitter tolerance", and delete PICS EM1. Check 83A.5.2 and 83B.2.4 generally for consistency.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change both to "The PRBS31 pattern defined in 83.5.10 or scrambled idle defined in 82.2.10 is used for evaluating XLAUI/CAUI jitter tolerance"

Remove PICS EM1

Cl **83A** *SC* **83A.6.1** *P* **416** *L* **39** # 190

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

In 83A and 83B, the items concerned are all on the same PCB. It is unlikely that the isolation requirements of IEC 60950-1 are relevant to a 83A XLAUI/CAUI.

SuggestedRemedy

Unless we know that the isolation requirements of IEC 60950-1 are relevant, delete "(including isolation requirements)". Consider doing the same in 83B.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

1 connector is allowed

Cl **83A** SC **83A.6.1** P **416** L **42** # 191
Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

Although "consult the relevant ... regulations to ensure compliance" might be good advice, network safety doesn't come into XLAUI/CAUI because XLAUI/CAUI isn't part of a network. There has to be a PMD (with its own environmental specifications) between the XLAUI/CAUI and any network.

SuggestedRemedy

Delete the heading "83A.6.2 Network safety". Also in 83B.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

As commentor suggests, this is good advice

Cl **83B** SC **83B.1** P **415** L **15** # 192
Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

this section

SuggestedRemedy

this annex

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Change "this section" to "this annex"

Cl **83B** SC **83B.1** P **415** L **16** # 193
Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

Most of 83B.1 isn't overview.

SuggestedRemedy

After "use the XLAUI / CAUI interface.", insert new heading "83B.2 Chip-module loss budget".

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The budget is a key difference between 83A/B and should be included in the overview section

Cl **83B** SC **83B.2** P **419** L **22** # 194
Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

"defined in this section"

SuggestedRemedy

Here, change "this section" to "83B.2, 83B.2.1, 83B.2.2, 83B.2.3, and 83B.2.4".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

change "this section" to "83B.2, 83B.2.1, 83B.2.2, and 83B.2.3".

[83B.2.4 does not exist]

Cl **83B** SC **83B.2** P **420** L **3** # 195
Dawe, Piers J G Independant

Comment Type **ER** *Comment Status* **D**

It would help the reader to be able to see both HCB loss and MCB loss on the same chart.

SuggestedRemedy

Put MCB loss line on Figure 83B-4, change title to "Reference differential insertion losses of HCB, MCB excluding connector", label the lines MCB and HCB. At line 49, refer to Figure 83B-4.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Keeping MCB separate from HCB simplifies charts

Cl **83B** SC **83B.2** P **421** L **7** # 196
Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Mixed fonts

SuggestedRemedy

Use Arial throughout this and similar figures.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83B** *SC* **83B.2.1** *P* **422** *L* **48** # 197

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

Text suddenly says "Modules may support additional de-emphasis states" but this is the first mention of ""de-emphasis" and the only mention of "de-emphasis states" in 83B. What is a "de-emphasis state" and where is the first one?

SuggestedRemedy

Wordsmithing needed.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
83B-3 shows the minimum & maximum de-emphasis range and is referenced before the text.

Cl **83B** *SC* **83B.2.1** *P* **423** *L* **32** # 198

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

Equations 83B-6, 83B-8 and 83B-9 are the same as Equation 83B-5. Repeating identical equations wastes the reader's time.

SuggestedRemedy

Delete Equations 83B-6, 83B-8 and 83B-9 and refer to Equation 83B-5 instead.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Having separate equations can help with organization.

Cl **83B** *SC* **83B.2.4** *P* **427** *L* **27** # 199

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

Figure 83B-9 is the same as Figure 83A-8. Repeating identical charts makes the document unnecessarily long, means that very little information can be seen on any page, and wastes the reader's time.

SuggestedRemedy

Delete Figure 83B-9 and refer to 83B-8 instead. Change title of Figure 83B-8 to "Host or module input or output return loss".

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Useful to have separate charts for hosts and modules

[Editor's note: Clause number corrected to 83B from 82B]

Cl **83B** *SC* **83B.2.4** *P* **428** *L* **25** # 200

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Comment Type **TR** *Comment Status* **D**

We define parameters and this is not a test and measurement standard. 100% testing is not require. We can't say "Host XLAUI / CAUI jitter tolerance evaluation shall be conducted".

SuggestedRemedy

Could change to "Host XLAUI / CAUI jitter tolerance evaluation shall be defined by a stressed input signal that comprises 0.25 UI effective Deterministic Jitter...".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
"Host XLAUI / CAUI jitter tolerance evaluation shall be conducted with a stressed input signal which is comprised
of 0.25 UI peak-to-peak deterministic jitter, and 0.15 UI random jitter for BER 10-12" does not mean 100% testing is required.

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