Cl **030** *SC* **30.3.2.1.5** *P* **29** *L* **52** # 1

Booth, Brad Microsoft

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

Media Independent Interface is in the definitions as referencing Clause 22.

SuggestedRemedy

When generically referencing XGMII, XLGMII, etc. use "media independent interface" as in 69.2.1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **069** *SC* **69.1.2** *P* **50** *L* **25** # 2

Booth, Brad Microsoft

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

Definition of 25G-MII not consistent.

SuggestedRemedy

25G-MII is defined as 25 Gigabit, not 25 Gb/s. Use 25 Gigabit.

Replicated in all the layer diagrams throughout the draft.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #5.

Cl **106** *SC* **106** *P* **93** *L* **1** # 3

Booth, Brad Microsoft

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

I've noticed that we've become very inconsistent with our titles, definitions and acronyms. Clause 106 appears to follow the conventions used in 802.3ba, which is inconsistent with the definitions. Technical because it relates to definitions.

SuggestedRemedy

Change title of clause to read:
Reconciliation Sublayer (RS) and 25 Gigabit Media Independent Interface (25G-MII)

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The existing title is:
"Reconciliation Sublayer (RS) and Media Independent Interface (25G-MII) for 25 Gb/s operation"
The last phrase "for 25 Gb/S applies to both the RS and the MII".
The title is in the same form as used for Clause 81.
In this case it is saying the the MII for 25 Gb/s second is defined in this Clause. The acronym 25G-MII in brackets relates MII here to the definition later in this clause.

Cl **106** *SC* **106.4** *P* **96** *L* **13** # 4

Booth, Brad Microsoft

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

Inconsistent use of 25 Gb/s and 25Gb/s.

SuggestedRemedy

Search draft and replace 25Gb/s with 25 Gb/s.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **000** *SC* **0** *P* **1** *L* **1** # 5

Booth, Brad Microsoft

Comment Type **E** *Comment Status* **D** *nomenclature, CC*

There are multiple instances throughout the draft where the term "25 Gigabit Media Independent Interface (25G-MII)" is used over and over; whereas, the draft uses "25G-AUI" throughout without the extra verbiage.

SuggestedRemedy

After the first use of "25 Gigabit Media Independent Interface (25G-MII)" use the acronym "25G-MII" only.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change all instances of "25 Gb/s Media Independent Interface" to "25 Gigabit Media Independent Interface".

Cl **108** *SC* **108.3** *P* **109** *L* **4** # 6

Booth, Brad Microsoft

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

Clause 83 is for 40G and 100G. Statement of incompatibility is not required and could create confusion.

SuggestedRemedy

Delete sentence:
"The PMA defined in Clause 83 is incompatible with the 25GBASE-R RS-FEC."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **000** *SC* **0** *P* **1** *L* **1** # 7

Booth, Brad Microsoft

Comment Type **E** *Comment Status* **D** *nomenclature, CC*

Inconsistent use of 25 Gigabit Attachment Unit Interface.

SuggestedRemedy

Search and replace 25 Gb/s or 25Gb/s Attachment Unit Interface with 25 Gigabit Attachment Unit Interface

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change all instances of "25 Gb/s Attachment Unit Interface" to "25 Gigabit Attachment Unit Interface".

Cl **110** *SC* **110.10** *P* **153** *L* **29** # 8

Booth, Brad Microsoft

Comment Type **T** *Comment Status* **D** *no-FEC*

Proposed text for cable assembly with no FEC.

SuggestedRemedy

Add:
c) Cable assembly that supports links between two PHYs that do not include either the 25GBASE-R RS-FEC or the BASE-R FEC sublayers are considered an engineered links. While beyond the scope of this standard, it is recommended implementers consider the COM requirements.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #54.

Cl **045** *SC* **45.2.1.95** *P* **42** *L* **40** # 9

Ran, Adee Intel

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

Some of the RS-FEC MDIO registers that are re-used in clause 108 include references to clause 91. References to clause 108 should be added.

The following subclauses need to be brought in after 45.2.1.95:

45.2.1.101.1 and 45.2.1.101.2 (add references to 108.5.3.2)

45.2.1.102.1 and 45.2.1.102.2 (add references to clause 108). Note that the text suggested below is valid for both the 108 meaning of "locked the single lane" and the 91 meaning of "locked and aligned all lanes".

45.2.1.102.7, 45.2.1.102.8, 45.2.1.102.9 (add references to 108.5.3.2)

45.2.1.103 (add reference to 108.6.6)
45.2.1.104 (add reference to 108.6.7)

SuggestedRemedy

Bring in the referenced subclauses from the base document.

Change "(see 91.5.3.3)" to "(see 91.5.3.3 and 108.5.3.2)", whenever it appears in these subclauses.

In 45.2.1.102.1 (PCS align status), change from
"When read as a one, bit 1.201.15 indicates that the RS-FEC described in Clause 91 has locked and aligned all transmit PCS lanes. When read as a zero, bit 1.201.15 indicates that the RS-FEC has not locked and aligned all transmit PCS lanes."

to
"This bit indicates the PCS alignment status of the RS-FEC. For the RS-FEC described in Clause 91, PCS alignment is defined as block lock, alignment markers lock and deskew of all 20 transmit PCS lanes. For the RS-FEC described in Clause 108, PCS alignment is defined as block lock of the transmit PCS signal. When read as a zero, this bit indicates that the RS-FEC has not obtained PCS alignment. When read as one, this bit indicates that the RS-FEC has obtained PCS alignment."

In 45.2.1.102.2 (RS-FEC align status), change from
"When read as a one, bit 1.201.14 indicates that the RS-FEC described in Clause 91 has locked and aligned all receive RS-FEC lanes. When readas a zero, bit 1.201.14 indicates that the RS-FEC has not locked and aligned all receive RS-FEC lanes."

To
"This bit indicates the PMA alignment status of the RS-FEC. For the RS-FEC described in Clause 91, PMA alignment is defined as alignment marker lock and deskew of all four lanes on the PMA service interface. For the RS-FEC described in Clause 108, PMA alignment is defined as codeword marker lock on the PMA service interface. When read as a zero, this bit indicates that the RS-FEC has not obtained PMA alignment. When read as one, this bit indicates that the RS-FEC has obtained PMA alignment."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Adopt the suggested remedy with the exception of changing "(see 91.5.3.3)" to "(see 91.5.3.3 and 108.5.3.2)" where it first appears and then deleting "see 91.5.3.3" on subsequent occurences

Cl **108** *SC* **108.6** *P* **121** *L* **20** # 10

Ran, Adee Intel

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

MDIO control variable names should match the variable names in clause 45. In some cases they do not.

In these cases, names in clause 45 text do not match names in clause 45 tables; It seems that the text names are more generic and suitable for a single-lane RS-FEC too. If possible, clause 45 tables should be corrected to match the text, but this may need to be done through maintenance.

SuggestedRemedy

Use the following variable names from clause 45 instead of the names in clause 108 tables 108-2 and 108-3 (based on clause 45 text):

45.2.1.102.2 RS-FEC align status (row 4 of table 108-2)
45.2.1.103 RS-FEC corrected codewords counter (row 5 of table 108-2)
45.2.1.104 RS-FEC uncorrected codewords counter (row 6 of table 108-2)
45.2.1.106 RS-FEC symbol error counter lane 0 (row 7 of table 108-2)
45.2.1.102.1 PCS align status (row 1 of table 108-3)

Consider changing the tables in clause 45 toom or taking this part to maintenance.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Use the following variable names instead of the names in tables 108-2 and 108-3 (based on clause 45 text):

RS-FEC align status (row 4 of table 108-2)
RS-FEC corrected codewords counter (row 5 of table 108-2)
RS-FEC uncorrected codewords counter (row 6 of table 108-2)
RS-FEC symbol error counter lane 0 (row 7 of table 108-2)
PCS align status (row 1 of table 108-3)

Cl **109** *SC* **109.4.6.1** *P* **133** *L* **34** # 11

Ran, Adee Intel

Comment Type **E** *Comment Status* **D** *pattern mdio*

Variable to MDIO register mapping paragraph in 109.4.6.1 (Transmit PRBS31 generation) refers to the _receive_ process and to variables that seem irrelevant for this subclause (marked in *), and one relevant variable is missing:

PRBS31_Tx_checker_ability *
PRBS31_Rx_checker_ability *
PRBS31_enable
PRBS_Tx_gen_enable
(PRBS31_Tx_generator_ability is missing)

Other subclauses have similar mapping paragraphs, some of which refer to other irrelevant variables, and some other variables are missing.

109.4.6.2 (receive PRBS31 generation):
PRBS31_Rx_checker_ability *
PRBS31_enable
PRBS_Rx_gen_enable
(PRBS31_Rx_generator_ability is missing)

109.4.6.3 (transmit PRBS31 checking):
PRBS31_enable
PRBS_Tx_check_enable
(PRBS31_Tx_checker_ability is missing)

109.4.6.4 (receive PRBS31 checking):
PRBS31_enable
PRBS_Rx_check_enable
(PRBS31_Rx_checker_ability is missing)

109.4.6.5 (transmit PRBS9 generation):
PRBS9_enable
PRBS_Tx_gen_enable
(PRBS9_Tx_generator_ability is missing)

109.4.6.6 (receive PRBS9 generation):
PRBS9_enable
PRBS_Rx_gen_enable
(PRBS9_Rx_generator_ability is missing)

SuggestedRemedy

Remove irrelevant variables and add missing ones in each subclause, as listed above.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #49.

Cl **110** *SC* **110.1** *P* **141** *L* **48** # 12

Ran, Adee Intel

Comment Type **T** *Comment Status* **D** *ca-s ber*

PMD BER (or DER) requirement when the BASE-R (clause 74) FEC is used is currently TBD. As presented in ran_020415_25GE_adhoc, it is proposed to set the limit to 1e-8, and use the presented limits for bmax (in COM parameters) and codeword error rate (in receiver tolerance test).

(See http://www.ieee802.org/3/by/public/adhoc/architecture/ran_020415_25GE_adhoc.pdf)

SuggestedRemedy

Change TBD to 1e-8 in 110.1, in 110.8.4.1, and in table 110-8 (DER_0 for CA-S).
Change TBD to 4.7e-10 in table 110-5, test 3 values.
Change TBD to 0.5 in table 110-8, b_max(n) for CA_S.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See also comment #50.

Cl **107** *SC* **107.1.2** *P* **99** *L* **22** # 13

Ran, Adee Intel

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

An additional exception is required to differentiate between clause 49 PCS and clause 107 PCS: Operation with RS-FEC requires a higher threshold in the BER monitor, to prevent being triggered by only two uncorrectable codewords.

Further details to be presented.

SuggestedRemedy

BER monitor for clause 107 should assert hi_ber when ber_cnt>=97 with an observation window of 2 milliseconds.

Editorial license provided to implement in the most readable way.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Needs discussion in the task force

Cl **110** *SC* **110.6** *P* **144** *L* **42** # 14

Ran, Adee Intel

Comment Type **T** *Comment Status* **D** *no-FEC*

Although the baseline proposal did not mention operation with no FEC, several presentations showed the desire to enable this mode of operation, and all auto-negotiation proposals seem to address this mode as part of the possible resolutions.

BER without any FEC is already specified in 110.1. The channel requirements to achieve this BER are yet to be defined, and may be beyond the scope of the standard. Auto-negotiation rules should also be defined.

Regardless of the electrical specification and the AN rules, there should be a functional description of this mode.

SuggestedRemedy

Add a third "no-FEC" mode to the list in 110.6.

Change the guidelines in 110.1, the requirements in 110.8.4.1, and the cable assembly description text in 110.10, to use "mode" instead of sublayers in use.

Add the following text to the first paragraph of 110.8.4.2:
"When no-FEC mode is used, the receiver shall comply with test 4."

Add a new cable assembly type in 110.10:
c) Cable assembly that supports links between two PHYs that operate in no-FEC mode. This cable assembly type is designated as "cable assembly no-FEC" (CA-N).

Add text in 110.10.2 and a new column in table 110-7 for no-FEC. Maximum insertion loss to be defined/discussed.

Add a new column in table 110-8 for CA-N, with DER_0=1e-12, b_max=0.5.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See also comment #54.

Cl **108** *SC* **108.5.3.7** *P* **116** *L* **25** # 15

Froroth, Ingvar Marvell

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

Figure 108-4 (Receive bit ordering): message block shows message symbol m511 as received before m512. This does not seem correct, the expected first symbol would be m513 (since k-1 = 513).

SuggestedRemedy

Edit Figure 108-4 so as to replace m511 with m513.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See also comment #31.

Cl **030** *SC* **30.6.1.1.5** *P* **34** *L* **5** # 16

Anslow, Pete Ciena

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

The other entries in this list appear in speed and then distance order.

SuggestedRemedy

Unless there is a good reason not to, insert the 25G entries between the 10G and 40G entries.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **045** *SC* **45.2.1.95** *P* **42** *L* **24** # 17

Anslow, Pete Ciena

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

The editing instruction contains: "... to "Single lane PHY FEC uncorrected blocks counter"". However, this should be "... to "Single lane PHY BASE-R FEC uncorrected blocks counter""

SuggestedRemedy

Change:
"... to "Single lane PHY FEC uncorrected blocks counter"" to:
"... to "Single lane PHY BASE-R FEC uncorrected blocks counter""

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See also comment #71

Cl **045** SC **45.2.1.95** P **42** L **42** # 18
Anslow, Pete Ciena

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

Spurious "\"

SuggestedRemedy

Delete the spurious "\"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **030** SC **30.3.2.1.5** P **29** L **38** # 19
Anslow, Pete Ciena

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

The BEHAVIOUR DEFINED AS: section should be indented as per the APPROPRIATE SYNTAX: section.

SuggestedRemedy

Fix the indenting

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **045** SC **45.2.1** P **35** L **20** # 20
Anslow, Pete Ciena

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

This draft is allocating Register 1.17 to the "25G PMA/PMD extended ability register", but the P802.3bn draft D1.3 has allocated 1.17 to "EPoC PMA/PMD ability register"
Also, the last word "register" should not appear in the Register name column (even though it does in a few)

SuggestedRemedy

Change the row to:
1.19, 25G PMA/PMD extended ability, 45.2.1.14c
with consequent changes to what is currently 45.2.1.14a and changing the table there to Table 45-17c

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment #38

Cl **069** SC **69.1.2** P **50** L **32** # 21
Baden, Eric Broadcom

Comment Type **T** *Comment Status* **D** *MII instantiation, CC*

Should the lettered list after 69-2 include 4-octet wide interface for 25G MII (CL69, 69.1.2)

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

[The editor changed commentType from E to T]

There is no physical instantiation defined in Clause 106.

The proposed response in Comment #117 provides text clarifying that there is no physical instantiation.

No changes are required in this list.

See comment #21 and #117.

Cl **074** SC **74.6** P **83** L **30** # 22
Baden, Eric Broadcom

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

change B0T to BT

SuggestedRemedy

Replace the letters ' B0T ' with ' BT '

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See also comment #40

Cl **105** SC **105.4.1** P **83** L **30** # 23
Baden, Eric Broadcom

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

'so' should be 'some' ?

SuggestedRemedy

replace the text ' so ' with ' some '

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **105** *SC* **105.7** *P* **92** *L* **1** # 24
Baden, Eric Broadcom

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

Page is blank.

SuggestedRemedy

Delete page 92

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **107** *SC* **107.1.2** *P* **99** *L* **22** # 25
Baden, Eric Broadcom

Comment Type **TR** *Comment Status* **D** *scrambled idles*

Is detection of scrambled IDLE required, or only generation?

SuggestedRemedy

Only scrambled IDLE generation is required. Remove the requirement for a scrambled IDLE checker

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

This needs discussion in the task force. See also comments #97, #43, #27.

Also remove editors note and make similar change in subclause 107.2.1.

Cl **107** *SC* **107.1.2** *P* **99** *L* **20** # 26
Baden, Eric Broadcom

Comment Type **E** *Comment Status* **D** *single bit interface*

Why is the PMA interface one bit wide instead of 16 bits wide like in CL49?

SuggestedRemedy

Perhaps add more information as to why this interface is different?

Proposed Response *Response Status* **W**

PROPOSED REJECT.

No suggested remedy

Cl **107** *SC* **107.2.1** *P* **101** *L* **22** # 27
Baden, Eric Broadcom

Comment Type **TR** *Comment Status* **D** *scrambled idles*

Only scrambled IDLE generation required

SuggestedRemedy

Remove the requirement for a scrambled IDLE checker. That function would not aid in the receiver tests with the FEC enabled.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

see response to comment #25

Cl **108** *SC* **108.5.2.2** *P* **109** *L* **49** # 28
Baden, Eric Broadcom

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

This comment about invalid block types is unnecessary. The letter #a information on line 41 indicates the RX FSM is executed. That FSM validates the block types.

SuggestedRemedy

remove these lines entirely as they are superfluous.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **108** *SC* **108.5.2.4** *P* **111** *L* **9** # 29
Baden, Eric Broadcom

Comment Type **TR** *Comment Status* **D** *codeword spacing*

The spacing between the CWs is 81920 and not 81960

SuggestedRemedy

replace 81960 with 81920 for the correct spacing of CW markers

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

[Editor changed subclause from 108.5.4.2 to 108.5.2.4.]

See also comment #112.

Cl **108** *SC* **108.5.3.6** *P* **115** *L* **43** # 30

Baden, Eric Broadcom

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

This comment about invalid block types is unnecessary. The letter #a information on line 41 indicates the RX FSM is executed. That FSM validates the block types.

SuggestedRemedy

Remove lines 43 thru 46.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **108** *SC* **108.5.3.7** *P* **116** *L* **25** # 31

Baden, Eric Broadcom

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

For the message block, the message symbols range from 513 to 0, and not from 511 to 0.

SuggestedRemedy

Change m511 to m513 in the figure.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See also comment #15.

Cl **108** *SC* **108.5.4.5** *P* **119** *L* **9** # 32

Baden, Eric Broadcom

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

In figure 108-5. The variable test_cwm does not get set to true in this diagram. Is that correct, or where does it need to be set? Is test_cwm an input to the FSM, or a variable of the FSM?9

SuggestedRemedy

Define the source and usage of test_cwm variable

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Usage of test_cwm in this diagram is similar to that of test_amp in figure 91-8.

test_cwm is defined in 108.5.4.2.

Cl **108** *SC* **108.5.4.5** *P* **120** *L* **1** # 33

Baden, Eric Broadcom

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

In figure 108-6. The variable test_cw does not get set to true in this diagram. Is that correct, or where does it need to be set? Is test_cw an input to the FSM, or a variable of the FSM?

SuggestedRemedy

Define the source and usage of the test_cw variable.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Usage of test_cw in this diagram is similar to that of test_cw in figure 91-9.

test_cw is defined in 108.5.4.2.

Cl **108** *SC* **108.5.4.2** *P* **117** *L* **23** # 34

Baden, Eric Broadcom

Comment Type **TR** *Comment Status* **D** *codeword markers*

Cwm_valid checks all 4 sets of AMs at the same time and allows 12 nibbles of error over all 48 nibbles in the CW. That is not consistent with the intention, or with how 802.3bj functions. Cwm_valid should only check the first 'AM' of the CW marker, and whether 9 or more nibbles are correct in that AM.

SuggestedRemedy

Cwm_valid should only check the validity of the first 12 nibbles of the CW marker, and whether 9 or more nibbles are correct in that space.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

In 91.5.4.2, the definition of amp_valid refers to a 64-bit block, and only the AM correspoding to PCS land 0 is checked, so 48 bits are known and 12 nibble comparisons are performed.

In 108.5.4.2, there is no definition of a 64-bit block; cwm_valid refers to a 257-bit block, which has 192 known bits (as of D0.1), so 48 nibble comparisons can be performed.

The number of allowed mismatches is scaled proportionally.

See also comment #116.

Cl **108** *SC* **108.5.3.3** *P* **115** *L* **5** # 35

Baden, Eric — Broadcom

Comment Type **TR** *Comment Status* **D** *error marking, CC, NC*

When codeword marker lock is FALSE, the output of the FEC is undefined, and the input to the PMA is unknown ('X'). We need to guarantee block_lock is lost by the PCS. We cannot guarantee hi_ber will be triggered with unknown data. We should drive the input to the PMA with zeros (effectively a tx_disable) to ensure block lock is lost by the ensuing PCS.

SuggestedRemedy

When CW marker lock is not achieved by the FEC, the FEC should drive zeros to the PMA, guaranteeing that the receive PCS loses block lock.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #127.

Cl **108** *SC* **108.5.3.6** *P* **115** *L* **41** # 36

Baden, Eric — Broadcom

Comment Type **TR** *Comment Status* **D** *rs-fec idle insertion*

The function within the FEC to insert IDLEs or Ordered sets to account for CWM deletion shall not re-encode. It shall only insert IDLEs or Ordered sets, and shall not insert any other block types. Only re-scrambling is required and specified.

SuggestedRemedy

The PCS does not re-encode, but should insert the required block types and re-scramble.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The suggested remedy is essentially what is being specified by 49.2.5, but without consideration for potential limit cases that may result in a non-interoperable implemention.

Cl **045** *SC* **45.2.1.4** *P* **36** *L* **46** # 37

Marris, Arthur — Cadence

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

RO should not be underlined because the editorial instruction is insert rather than change.

SuggestedRemedy

Remove underlining of RO.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **045** *SC* **45.2.1** *P* **35** *L* **21** # 38

Marris, Arthur — Cadence

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

Use of register 1.17 clashes with EPOC. There are other clashes with 802.3bn, 802.3bq and 802.3bw.

SuggestedRemedy

Implement fixes outlined in http://www.ieee802.org/3/by/public/adhoc/architecture/anslow_021815_25GE_adhoc.pdf with editorial license

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Implement fixes in referenced presentation http://www.ieee802.org/3/by/public/adhoc/architecture/anslow_021815_25GE_adhoc.pdf with editorial license and remove the word "register" as requested by comment #20

Cl **074** *SC* **74.5.1a** *P* **63** *L* **5** # 39

Nowell, Mark — Cisco

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

Typo in using the word "encoder" instead of "decoder" on lines 5 & 6.

SuggestedRemedy

Modify two sentences:
From:
When rx_mode is QUIET, the FEC encoder logic may deactivate functional blocks to conserve energy. When rx_mode is DATA, the FEC encoder logic operates normally.

To:
When rx_mode is QUIET, the FEC decoder logic may deactivate functional blocks to conserve energy. When rx_mode is DATA, the FEC decoder logic operates normally.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

[editor change comment type from E to T]

Cl **074** *SC* **74.6** *P* **63** *L* **30** # 40

Nowell, Mark Cisco

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

Typo. Change B0T to BT in text "...shall be no more than 6144 B0T..."

SuggestedRemedy

Change:
...shall be no more than 6144 B0T...

To:
...shall be no more than 6144 BT...

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See also comment #22

Cl **105** *SC* **105.4.2** *P* **85** *L* **1** # 41

Nowell, Mark Cisco

Comment Type **E** *Comment Status* **D** *nomenclature, CC*

Fig 105-2 and 105-3 on pages 85 &86 are inconsistent in teh labeling of the FEC sublayer.

Fig 105-2 labels it FEC
Fig 105-3 labels it FEC or RS-FEC (with a note 1)

Since we are calling these seperate sublayers I suggest being consistent with Fig 105-3

SuggestedRemedy

Reconcile to be consistent. Suggest using Fig 105-3 format for both and also adding note 1 in Fig 105-2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The common term for the Clause 74 FEC is BASE-R FEC, so the FEC label in Figure 105-3 is incorrect. Note that 802.3bx D2.1 1.5 defines the abbreviation "FEC" generically as "forward error correction".

Clause 105 is a general architecture introduction and does not explicitly specify PHYs. These diagrams in particular are examples and do not specify any PHY in particular. By keeping these diagrams more generic it makes them more future-proof as new PHYs are added.

The note (NOTE 1) used in Figure 105-3 is appropriately written. The point of this note is to point out that the FEC may or may not be used in a PHY. It may be mandatory or optional to implement. If implemented, it may be mandatory or optional to use and use may be based upon explicit configuration or through AN.

However, the figures should be consistent with each other and an errors should be rectified.

In Figure 105-3 replace the label "FEC or RS-FEC" with "FEC", but leave the footnote.

In Figure 105-2 use the same note for the FEC label as the one in Figure 105-3:
"NOTE 1--CONDITIONAL BASED ON PHY TYPE"

Use same for Figure 108-1 and Figure 109-1.

Cl **073** *SC* **73.6.4** *P* **54** *L* **31** # 42

Marris, Arthur — Cadence

Comment Type **T** *Comment Status* **D** *phy types, CC, BTI*

Editor's note states at the time draft 0.1 was created there was no baseline proposal for 25GBASE-CR technology abilities. If a base-line proposal is adopted in the March meeting Clause 73 will need to be updated accordingly.

SuggestedRemedy

Update Clause 73 to describe FEC negotiation for 25GBASE-CR if a baseline for this is adopted at this meeting.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Clause 73 will be updated depending on what is agreed in the 802.3by task force meeting regarding the modes of operation and number of 25GBASE-CR PMD types.

Cl **107** *SC* **107.1.2** *P* **99** *L* **24** # 43

Dudek, Mike — QLogic

Comment Type **T** *Comment Status* **D** *scrambled idles*

The scrambled idle is a useful pattern that should be retained and generating it in the PCS is the easiest place.

SuggestedRemedy

Delete the editor's note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

see response to comment #25

Cl **107** *SC* **107.1.3** *P* **100** *L* **18** # 44

Dudek, Mike — QLogic

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

Footnotes should be superscript both on FEC and AN

SuggestedRemedy

Make them superscript.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **108** *SC* **108.5.3.2** *P* **114** *L* **36** # 45

Dudek, Mike — QLogic

Comment Type **T** *Comment Status* **D** *backplane options, CC*

With the options to turn off the RS-FEC encoding that are included in this project (no FEC option) The additional option to turn off the error correction is not necessary. My understanding is that the performance with error correction bypassed is worse than when the RS-FEC encoding is turned off (no FEC option).

SuggestedRemedy

Remove the added text, registers etc. required for the option to bypass the error correction with RS-FEC encoding.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

No-FEC option may not be supported in all devices. These options may or may not be required depending on application.

Cl **110** *SC* **110.7.1** *P* **146** *L* **14** # 46

Dudek, Mike — QLogic

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

The exact losses of the Transmitter and receiver differential controlled impedance losess between TP0 and TP1 are not given in 92A.4 due to the effects of test fixtures. It would be better to refer to the whole of the annex that includes information on the test boards and how their losses are accounted for in the measurements. (as is done in the equivalent reference in clause 92).

SuggestedRemedy

Change the reference from 92A.4 to 92A.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

TP0 to TP1 loss is informative, and does not include the test fixtures, since these points are on the PCB.

92A.4 is the suitable reference for the PCB trace loss. Other subclauses in 92A discuss other information.

Cl **109** *SC* **109.4.6.2** *P* **133** *L* **44** # 47

Dudek, Mike QLogic

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

This section is about generating the PRBS in the Receive direction not checking a PRBS.

SuggestedRemedy

Change "ability to check" to "ability to generate"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **109** *SC* **109.4.6.2** *P* **133** *L* **47** # 48

Dudek, Mike QLogic

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

What the "PMA client" is is not very explicit.

SuggestedRemedy

Replace "toward the PMA client" with "toward the PCS" on lines 47 and 50. Also on page 135 line 6 and 8

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The client of a particular sublayer always refers to the adjacent sublayer that is closer to the MAC. "PMA client" is used throughout these subclauses in this way.

Cl **109** *SC* **109.4.6.2** *P* **134** *L* **2** # 49

Dudek, Mike QLogic

Comment Type **ER** *Comment Status* **D** *pattern mdio*

The reference to MDIO for PRBS31_RX_checker ability is before this function is described, and the MDIO for this is included in 109.4.6.4

SuggestedRemedy

Delete PRBS31_RX_checker ability" from this list.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #11.

There are extraneous and missing MDIO variables in both 109.4.6.1 and 109.4.6.2.

Change the second paragraph of 109.4.6.1 (page 133, line 34) to:
If the optional Clause 45 MDIO is implemented, the PMA receive process maps the PRBS31_Tx_generator_ability, PRBS31_enable, and PRBS_Tx_gen_enable variables to the registers and bits defined in 109.5.

Change the second paragraph of 109.4.6.2 (page 134, line 1) to:
If the optional Clause 45 MDIO is implemented, the PMA receive process maps the PRBS31_Rx_generator_ability, PRBS31_enable, and PRBS_Rx_gen_enable variables to the registers and bits defined in 109.5.

Cl **110** *SC* **110.1** *P* **141** *L* **48** # 50

Dudek, Mike QLogic

Comment Type **T** *Comment Status* **D** *ca-s ber*

A BER of 1e-8 is required with the BASE-R FEC. See ran_020415_25GE_adhoc

SuggestedRemedy

Replace TBD with 10^-8. Here and on page 149 line 24 and Page 150 line 17,

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

[Editor changed subclause from 110 to 110.1]

See also comment #12.

Cl **110** *SC* **110.8.4.2** *P* **150** *L* **11** # 51

Dudek, Mike QLogic

Comment Type **T** *Comment Status* **D** *RX test*

We should allow PRBS31 as an alternative pattern for Test 4. This will enable the use of standard test equipment, (or the internal PRBS31 generators and checkers in the PMA). Allowing testing without having a PCS connected.

SuggestedRemedy

For Test 4 Change to Scrambled idle or PRBS31. Add to the footnote c, "or with a PRBS31 error detector as appropriate"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **110** *SC* **110.8.4.2.2** *P* **150** *L* **44** # 52

Dudek, Mike QLogic

Comment Type **T** *Comment Status* **D** *RX test*

110.10.7 has different parameters for the different target systems. We need to be specific.

SuggestedRemedy

Add to bullet a). For tests 1 and 2 the COM parameters are those for CA-L, for test 3 the COM parameters are those for CA-S, and for test 4 the COM parameters are those for CA-N (Separate comment to add parameters for CA-N). Also on page 151 line 37 insert between a) and b). "The COM parameters are as modified by table 110-8" using the COM parameters for CA-L for tests 1 and 2, the COM parameters for CA-S for test 3, and the COM parameters for CA-N for test 4.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add text to bullet a) that clarifies that which COM parameters to use for each test.

Add a bullet item in 110.8.4.2.3 for describing COM parameters that differ between tests.

Cl **110** *SC* **110.8.4.2.4** *P* **152** *L* **1** # 53

Dudek, Mike QLogic

Comment Type **T** *Comment Status* **D** *RX test*

The jitter of the pattern generator should be set to match the local table, not that for 100GBASE-CR4.

SuggestedRemedy

Change "in table 92-8" to "in table 110-5

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **110** *SC* **110.10** *P* **153** *L* **30** # 54

Dudek, Mike QLogic

Comment Type **TR** *Comment Status* **D** *No-FEC*

In order to enable the lowest latency systems an additional cable type should be added that doesn't require any FEC

SuggestedRemedy

Add an additional cable type CA-N that can be used with no FEC. Specification for CA-N to be 13.5dB loss with a COM DER of 10e-12. Full changes to be provided in a presentation.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Pending presentation.

See comment #8.

Cl **110** *SC* **110.10** *P* **153** *L* **36** # 55

Dudek, Mike QLogic

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

It is not true that all other parameters are identically specified as the COM parameters are different.

SuggestedRemedy

insert between "CA-S" and "All" "and some of the input parameters for the COM calculation are different.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Insert after "than that of CA-S":

", and some of the input parameters for the COM calculation are different".

Add a row to table 110-7 for "COM input parameters", reference to 110.10.7, values in Table 110-8, no units.

Cl **110** *SC* **110.10.2** *P* **154** *L* **10** # 56

Dudek, Mike QLogic

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

Left over paragraph refering to 100GBASE-CR4. The correct equivalent paragraph is the next paragraph

SuggestedRemedy

Delete the paragraph containing equation 92-26.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Both paragraphs are relevent. This one specifies the minimum loss, which is the same as in clause 92. The next one specifies the maximum return loss.

Cl **110A** *SC* **110A.7** *P* **225** *L* **42** # 57

Dudek, Mike QLogic

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

The Channel operating margin should reference 25Gbase-CR not 100GBASE-CR4.

SuggestedRemedy

Change the reference from 92.A.7 to 110.10.7

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change: P225, L43
The Channel Operating Margin (COM) is specified in 92.A.7.
To: The Channel Operating Margin (COM) for the channel between TP0 and TP5, computed using the
procedure in 93A.1 and the parameters in Table 110-8, is recommended to be greater than or equal to 3 dB.
NOTE-For cable lengths greater than 4 m, a frequency step (deltaf) no larger than 5 MHz is recommended.

Cl **110B** *SC* **110B.1.3.6** *P* **227** *L* **28** # 58

Dudek, Mike QLogic

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

Section 100B.1 appears to be all intended for SFP test fixtures, but that isn't clear.

SuggestedRemedy

Add SFP28 at the front of all the section headings in 11B.1.3

Proposed Response *Response Status* **W**

PROPOSED REJECT.

110B.1 sentences indicate SFP28 form factors.

110B.1 Test fixtures
(1)Transmitter and receiver measurements for the 25GBASE-CR SFP28 host form factor at TP2 or TP3, and
for the 25G-AUI C2M host at TP1a or TP4a, are made utilizing the test fixture specified in 110B.1.1.

(2)Cable assembly measurements for the SFP28-SFP28 form factor are made between TP1 and TP4 with cable
assembly test fixtures as specified in 110B.1.2 on both ends.

Cl **111** *SC* **111.1** *P* **169** *L* **28** # 59

Dudek, Mike QLogic

Comment Type **TR** *Comment Status* **D** *backplane options*

In order to provide lower latency options for backplanes and for compatibility with the copper cable clause the BASE-R FEC and no FEC endoing options should be added to this backplane clause.

SuggestedRemedy

Add the BASE-R FEC and no FEC encoding options to the backplane clause.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Apply suggested change with editorial license.

Cl **111** *SC* **111.10.4.1** *P* **177** *L* **50** # 60
Dudek, Mike QLogic

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

There is only one lane.

SuggestedRemedy

delete "on each lane"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **112** *SC* **112.5.4** *P* **187** *L* **19** # 61
Dudek, Mike QLogic

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

With only one lane "global" seems strange. and "For all lanes" and "for any lane" are also strange.

SuggestedRemedy

replace "a glogal indicator" with "an indicator" In table 112-4 delete "For any lane" and "For all lanes"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See response to #140

Cl **112** *SC* **112.6.2** *P* **189** *L* **9** # 62
Dudek, Mike QLogic

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

There is one transmitter lane, but the requirements for the aggressor lanes in table 95-7 are for receive lanes.

SuggestedRemedy

Change "no transmitter aggressor" to "no receive aggressor".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **112** *SC* **112.10.3** *P* **193** *L* **25** # 63
Dudek, Mike QLogic

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

From the title of the document IEC 61753-021-2 is not applicable to this multimode fiber system.

SuggestedRemedy

Delete paragraph d).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
IEC 61753-021-2 does not apply to MM fiber interfaces and should be deleted.

Cl **112** *SC* **112.11.4.4** *P* **197** *L* **30** # 64
Dudek, Mike QLogic

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

Elsewhere (and in the value/comment) the laser safety level is called out as Class 1 not 1M.

SuggestedRemedy

Change the Feature to say "Hazard Level 1" not "Hazard Level 1M".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
See response to #144

Cl **004A** *SC* **4a.4.2** *P* **199** *L* **22** # 65
Dudek, Mike QLogic

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

The note3 needs to reference the 25G-MII signal.

SuggestedRemedy

Add "or 25G-MII" so that the note reads
NOTE 3-For 10 Gb/s and 25 Gb/s operation, the spacing between two packets, from the last bit of the FCS field of the first packet to the first bit of the Preamble of the second packet, can have a minimum value of 40 BT (bit times), as measured at the XGMII or 25G-MII receive signals at the DTE.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **093A** *SC* **93A.1** *P* **205** *L* **20** # 66

Dudek, Mike QLogic

Comment Type **T** *Comment Status* **D** *com phy table*

25G-AUI (chip to chip) is missing from Table 93A-2

SuggestedRemedy

Add 25G-AUI C2C (Annex 109A) Table 83D-6

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add a new row under 25GBASE-KR as follows:
| 25G-AUI C2C (Annex 109A) | Table 83D-6 |

Also, see comment #136.

Cl **109B** *SC* **109B.4.4.2** *P* **217** *L* **21** # 67

Dudek, Mike QLogic

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

Some of the references for the module output are incorrectly pointing to the host output sections in Annex 83E. Unfortunately this appears to be an error in 802.3bm that is also being incorporated into IEEE 802.3 2015.

SuggestedRemedy

Change the following references for the module output.

TM9, TM10 and TM11 to 83E.3.2.1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **109B** *SC* **109B.4.4.2** *P* **217** *L* **20** # 68

Dudek, Mike QLogic

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

There is an error in the PICS for the module output. Unfortunately this also exists in 802.3bm and the 802.3 2015 project. The value for the module output transition time should be greater than 12ps as is shown in tables 83E-3 in both 802.3bm and the 802.3 2015.

SuggestedRemedy

Change the value of TM8 to greater than or equal to 12ps,

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The min. transition value 12 ps is provided in 83E.3.2 in Table 83E-3, which references 83E.3.1.5 which in turn provides the transition time definition and measurement methodology, not the required transition time. The reference for TM8 should therefore be 83E.3.2.

For TM8.
Change the reference from "83E.3.1.5" to "83E.3.2".
Change the value/comment to:
"Greater than or equal to 12 ps"

Cl **110C** SC **110C.1** P **233** L **20** # 69

Dudek, Mike QLogic

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

The reference to the systems using CA-S cables should refer to the Clause 49 FEC. The bypassing of error correction for the RS-FEC does not operate as well as no FEC so should not be described. The sentence can also be better written.

SuggestedRemedy

Change "The CA-S specifications enable a shorter reach of 3 m with lower loss than CA-L, and are required for compatibility with 25GBASE-CR PHYs that bypass RS-FEC error correction or that do not include the RS-FEC sublayer" to
"Lower latency and power options are available using 25GBASE-CR PHY's that use the KR FEC or no FEC. These options require the CA-S specifications which have a shorter reach of 3 m with lower loss than CA-L."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change:
"The CA-S specifications enable a shorter reach of 3 m with lower loss than CA-L, and are required for compatibility with 25GBASE-CR PHYs that bypass RS-FEC error correction or that do not include the RS-FEC sublayer"
To:
"The CA-S specifications enable a shorter reach of 3 m with lower loss than CA-L as required for compatibility with 25GBASE-CR PHYs that use BASE-R FEC or no FEC."

The commenter's proposed text would need to include clarification or provide references to "lower latency and power options" that are available using 25GBASE-CR PHY's that use the KR FEC or no FEC.

Cl **001** SC **1.3** P **24** L **15** # 70

Dudek, Mike QLogic

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

Why is the footnote that describes where to find SFF documents being deleted.

SuggestedRemedy

Re-instate the footnote and apply it to all the SFF specifications.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

According to the style of this subclause, the footnote reference is applied only to the first of the references for which the reference applies. Since the new references (SFF-8402/8432) precede the existing reference (SFF-8436) the footnote is removed from the entry for SFF-8436 and added to the entry for SFF-8402.

Cl **045** SC **45.2.1.95** P **42** L **23** # 71

Dudek, Mike QLogic

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

The change instruction is missing the "BASE-R"

SuggestedRemedy

Change :"
Single lane PHY FEC" to "Single lane PHY BASE_R FEC"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See also comment #17

Cl **069** SC **69.1.2** P **50** L **16** # 72

Dudek, Mike QLogic

Comment Type **TR** *Comment Status* **D** *backplane options*

In order to provide a lower latency backplane option the RS-FEC should be made optional using the Firecode or no FEC as alternates.

SuggestedRemedy

Change Figure 69-1a block from "RS-FEC" to "FEC" with a footnote optional/conditional. Under the diagram say FEC=REED-SOLOMON FORWARD ERROR CORRECTION or BASE-R FORWARRD ERROR CORRECTION. Also in Table 69-1a Change RS-FEC to optional and insert extra column of Clause 74 FEC optional. Also in Talbe 105-2 for 25GBASE-KR add clause 74 as optional and change clause 108 to optional.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Align the FEC note in Figure 69-1a with the note used in Figure 105-2 and Figure 105-3 per comment #41.

Update Table 69-1a based on task force consensus.

See also comment # 59.

Cl **069** *SC* **69.1** *P* **50** *L* **51** # 73

Dudek, Mike QLogic

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

The referencing of both chip to chip and chip to module annexes for 25G is not consistent with what is done for 40G and 100G where only the chip to chip annexes are referenced.

SuggestedRemedy

Either Delete Annex 109B or add Annexes 83B and Annex 83E to item g) and Annex 83B to item h)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change:
"specified in Annex109A or Annex109B"
To:
"specified in Annex109A"

Cl **078** *SC* **78.1.4** *P* **72** *L* **26** # 74

Dudek, Mike QLogic

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

Chip to module is not included for CAUI-4 in Table 78-1. (Due I believe to the optical modules not being capable of deep sleep mode). It is inconsistent that annex 109B is included in the table.

SuggestedRemedy

Delete Annex 109B or add 83E to the CAUI-4 row.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change "109A, 109B" to "109A"

Cl **105** *SC* **105.4.1** *P* **83** *L* **30** # 75

Dudek, Mike QLogic

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

typo

SuggestedRemedy

replace "so" with "some"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **107** *SC* **107.4** *P* **104** *L* **37** # 76

Brown, Matthew APM

Comment Type **E** *Comment Status* **D** *bucket, CC*

There is no need to explicitly call out the the references of a referenced subclause. Many or most subclauses have references.

SuggestedRemedy

Delete "and its references" in the following locations:
page 104 line 38
page 109 line 14
page 171 line 30
page 185 line 27

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **108** *SC* **108.3** *P* **109** *L* **6** # 77

Brown, Matthew APM

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

The word "also" is in the wrong place for its intent.

SuggestedRemedy

Either delete "also" or put it at the beginning of the sentence.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Delete the word "also".

Cl **108** *SC* **108.5.2.2** *P* **109** *L* **45** # 78

Brown, Matthew APM

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

"periodical" is not the correct word

SuggestedRemedy

Change "periodical" to "periodic".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **108** *SC* **108.5.1** *P* **110** *L* **14** # 79

Brown, Matthew APM

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

In figure 108-2...
Use of CW which is not defined. Use "codeword" instead to be consistent with rest of clause.

SuggestedRemedy

In figure 108-2...
Change all instances of "CW" with "codeword".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **108** *SC* **108.5.2.4** *P* **111** *L* **9** # 80

Brown, Matthew APM

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

It is sufficient (and common) to use "64B/66B blocks".

SuggestedRemedy

Change "64B/66B encoded blocks" to "64B/66B blocks".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **108** *SC* **108.5.3.2** *P* **114** *L* **18** # 81

Brown, Matthew APM

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

It is not clear what the following note is saying:
"NOTE-The PHY may rely on the error correction capability of the 25GBASE-R RS-FEC sublayer to achieve its performance objectives. It is recommended that acceptable performance of the underlying link is verified before error correction is bypassed."

SuggestedRemedy

Please clarify.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This text is based on a similar note in 91.5.3.3.

Cl **108** *SC* **108.5.3.6** *P* **115** *L* **40** # 82

Brown, Matthew APM

Comment Type **T** *Comment Status* **D** *rs-fec idle insertion*

Regarding list item c, the inclusion of the PCS transmit econding process was not included in the FEC/PCS baseline specification. However, this process or an equivalent process must be specified.

SuggestedRemedy

Retain item c as it is written or specify an alternate encoding in detail.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Retain item c as it is written.

See comment #36.

Cl **108** *SC* **108.5.3.6** *P* **115** *L* **48** # 83

Brown, Matthew APM

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

The extra encoding instuctions are not clearly tied to the process in the previous list.

SuggestedRemedy

Change:
"If rx_coded<1:0> is either 00 or 11, rx_coded_out<1:0> shall be set to rx_coded<1:0> and idle characters shall not be inserted at the next block after rx_coded_out."
To:
"If rx_coded<1:0> is either 00 or 11, the process in list item c shall set rx_coded_out<1:0> to rx_coded<1:0> and the process in list item b shall not insert idle characters at the next block after rx_coded_out."

Alternately, add these exceptions to list items b and c.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change:
"If rx_coded<1:0> is either 00 or 11, rx_coded_out<1:0> shall be set to rx_coded<1:0> and idle characters shall not be inserted at the next block after rx_coded_out."
To:
"If rx_coded<1:0> is either 00 or 11, the process in list item c shall set rx_coded_out<1:0> to rx_coded<1:0> and the process in list item b shall not insert idle characters at the next block after rx_coded_out."

Cl **108** *SC* **108.5.4.2** *P* **117** *L* **47** # 84

Brown, Matthew APM

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

The test_cwm is set to false in two locations in the state diagram. Instead, just refer to the state diagram.

SuggestedRemedy

Change:
"when the FIND_1ST state is entered"
To:
"according to the FEC synchronization state diagram in Figure 108-5."

Similarly, on same page, line 50
Change:
"when the TEST_CW state is entered"
To:
"according to the codeword monitor state diagram in Figure 108-6"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change definition of test_cwm from:
"Boolean variable this is set to true when a candidate block position is available for testing and false when the FIND_1ST state is entered."
To:
"Boolean variable that is set to true when a candidate block position is available for testing, and is set to false according to the FEC synchronization state diagram in Figure 108-5."

In the definition of test_cw, change from:
"when the TEST_CW state is entered."
To:
"according to the codeword monitor state diagram in Figure 108-6."

Cl **108** *SC* **108.5.4.4** *P* **118** *L* **13** # 85

Brown, Matthew APM

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

redundant word

SuggestedRemedy

Change:
"codeword offset"
To:
"offset"

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Offset can also be measured in bits or in 257-bit blocks (codeword marker size).

The suggested change does not improve the text.

Cl **108** *SC* **108.6** *P* **120** *L* **44** # 86

Brown, Matthew APM

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

Incorrect use of commas and run on sentence.

SuggestedRemedy

Replace:
"If MDIO is implemented, it shall map MDIO control bits to RS-FEC control variables as shown in Table 108-1, and MDIO status bits to RS-FEC status variables as shown in Table 108-2, and if a separated PMA (see 45.2.1) is connected to the FEC service interface it shall map additional MDIO status bits to additional RS-FEC status variables as shown in Table 108-3."
With:
"If MDIO is implemented, it shall map MDIO control bits to RS-FEC control variables as shown in Table 108-1 and MDIO status bits to RS-FEC status variables as shown in Table 108-2. If a separated PMA (see 45.2.1) is connected to the FEC service interface, it shall map additional MDIO status bits to additional RS-FEC status variables as shown in Table 108-3."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Text is based on 91.6, however the suggested change improves readabilty.

Cl **109** *SC* **109.6.4.1** *P* **139** *L* **30** # 87

Brown, Matthew APM

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

Incorrect Heading Name

SuggestedRemedy

Change:
"109.6.45.1 PMA"
To:
"109.6.45.1 PMA Functions"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **110** *SC* **110.1** *P* **141** *L* **53** # 88

Brown, Matthew APM

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

It is not necessary to point to specific subclauses for the cable assembly if you do not do the same for the PMD transmitter and receiver.

SuggestedRemedy

Replace:
"cable assembly meeting the requirements of 110.10"
With:
"compliant cable assembly"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **110** *SC* **110.8.4.1** *P* **149** *L* **35** # 89

Brown, Matthew APM

Comment Type **T** *Comment Status* **D** *RX test*

The BASE-R FEC mode should be tested with a minimum cable insertion loss test similar to test 1 for the RS-FEC mode. Assuming a no-FEC mode is supported a similar test will be required for that mode.

SuggestedRemedy

Add a new test for the BASE-R FEC mode with the same channel characteristics as test 1 but with test pattern and receiver targets the same as for test 3.
Add a new test for the no-FEC mode with the same channel characteristics as test 1 but with test pattern and receiver targets the same as for test 4.
Since each of these modes are unique and the table includes a long of descriptive information, create a parameter table for each mode with two tests (three tables total).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **110** *SC* **110.8.4.2** *P* **150** *L* **6** # 90

Brown, Matthew APM

Comment Type **E** *Comment Status* **D** *rx test*

For each of the test parameter columns, there should be a brief description of each in the heading row.

SuggestedRemedy

In test 1 heading add "RS-FEC min. loss"
In test 2 heading add "RS-FEC max. loss"
In test 3 heading add "BASE-R FEC max. loss"
In test 4 heading add "no FEC max. loss"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change the column headings to the following:
Parameter | Test 1 (RS-FEC, low loss) | Test 2 (RS-FEC, high loss) | Test 3 (BASE-R FEC, high loss) | Test 4 (no FEC, high loss)

Insert two new rows at the end:
b_max used in COM calculation | 1 | 1 | 0.5 | 0.5
DER_0 used in COM calculation | 1e-5 | 1e-5 | 1e-8 | 1e-12

Cl **110** *SC* **110.10.7** *P* **154** *L* **38** # 91

Brown, Matthew APM

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

There is no need to call out the subclauses as they are a part of 110.10.7.2.

SuggestedRemedy

Delete "and its subclauses".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

[Editor changed subclause from 110.8.4.2, page from 150, line from 7]

Delete "and its subclauses".

Cl **105** *SC* **105.1** *P* **81** *L* **40** # 92

Brown, Matthew APM

Comment Type **T** *Comment Status* **D** *phy types*

In Table 105-2, specify "M" or "O" for TBD values for 25GBASE-CR.

SuggestedRemedy

Set these values according once mandatory and optional modes are specified for 25GBASE-CR.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Update this table based on task force consensus.

Cl **106** *SC* **106.1.2** *P* **94** *L* **27** # 93

Brown, Matthew APM

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

MAC has been used previously in the clause.

SuggestedRemedy

Replace "media access controller" with "MAC".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **106** *SC* **106.1.4** *P* **94** *L* **37** # 94

Brown, Matthew APM

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

The definitions of bit time and pause_quanta are being references.

SuggestedRemedy

Change "specified" to "defined" twice.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **106** *SC* **106.1.7.1** *P* **95** *L* **30** # 95

Brown, Matthew APM

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

XGMII is not mapped, the signals are.

SuggestedRemedy

Change "in the same was as XGMII is mapped"
To "in the same way as for XGMII"

Change in the following locations:
page 95, lines 30, 35, 51

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **106** *SC* **106.1.7.3** *P* **95** *L* **39** # 96

Brown, Matthew APM

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

Include the name of the primitive in the paragraph to be consistent with other similar subclauses.

SuggestedRemedy

Change "this primitive"
To "the PLS_CARRIER.indication primitive"

Similarly, on page 95, line 46
Change "this primitive"
To "the PLS_SIGNAL.indication primitive"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **107** *SC* **107.1.2** *P* **99** *L* **22** # 97

Brown, Matthew APM

Comment Type **T** *Comment Status* **D** *scrambled idles*

Include scrambled idles test pattern generation and checker in PCS.

The scrambled idles test pattern generation is required for PMD transmitter testing for 25GBASE-CR and 25GBASE-KR PMDs.

A generator and checker is required for testing of an entire PHY with a 25G-AUI instantiation.

SuggestedRemedy

Remove editor's note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment #25

Cl **107** *SC* **107.1.3** *P* **100** *L* **31** # 98

Brown, Matthew APM

Comment Type **E** *Comment Status* **D** *layer diagrams, CC*

Need consistent notes for FEC and AN amongst all of the layer diagrams.

SuggestedRemedy

Use one not for both FEC and AN, with the same text as in Figure 105-1.
"CONDITIONAL BASED ON PHY TYPE"

Also, in Figure 105-1, use a single note since both notes have the same text.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **107** *SC* **107.1.4** *P* **100** *L* **53** # 99

Brown, Matthew APM

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

The use of Gtransfers was due to the inteface being a multi-bit interface.

SuggestedRemedy

Change "Gtransfers/s" to "Gb/s".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **107** *SC* **107.1.4.1** *P* **101** *L* **7** # 100

Brown, Matthew APM

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

PCS Interface should be PCS service interface

SuggestedRemedy

Change "PCS Interface" to "PCS service interface".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **107** *SC* **107.2** *P* **101** *L* **17** # 101

Brown, Matthew APM

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

The heading "107.2 Physical Coding Sublayer (PCS)" is not required since this entire clause is exactly that. Also, there is only one subclause under 107.2.

SuggestedRemedy

Remove the heading 107.2 and promote 107.2.1 and its subclauses.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **107** *SC* **107.2.1** *P* **101** *L* # 102

Brown, Matthew APM

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

The functionality in Clause 49 and 82.2.11 are more than definitions.
Also, the first reference to PCS is specifically the 25GBASE-R PCS.

SuggestedRemedy

Change "The PCS supports" to "The 25GBASE-R PCS supports".
Change "defined" to "specified" in the following locations
page 101 line 22
page 101 line 23
page 103 line 52
page 104 line 43

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **110** *SC* **110.10.7.1.1** *P* **155** *L* **41** # 103

Brown, Matthew APM

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

Should be specific about what is being calculated.

SuggestedRemedy

Change:
"The channel signal path from TP0 to TP5"
To:
"The S-parameters of the channel signal path from TP0 to TP5"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Text is based on 92.10.7.1, however the suggeted change is an improvement.

Cl **110** *SC* **110.10.7.2** *P* **156** *L* **46** # 104

Brown, Matthew APM

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

Sublauses should include 110.10.7.2.4.

SuggestedRemedy

Change:
"110.10.7.2.3"
To:
"110.10.7.2.4"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **110** *SC* **110.11** *P* **157** *L* **34** # 105

Brown, Matthew APM

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

Subclause 110.7 is the PMD functional characteristics. The PMD is specified in multiple subclauses. Since there is just one 25GBASE-CR PMD and it is this clause it is not necessary to call out the clause number(s) here. If it is necessary use the form "(x.x.x)" rather than "as per x.x.x". And there is no need to repoint to these subclauses in the next sentence.

SuggestedRemedy

Change ", as per 110.7" to "(110.7)" on line 33
Change ",as per 110.10" to "(110.10)" on line 34
Delete "of 110.8" and "of 110.10" on line 37.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change ", as per 110.7" to "(110.7 and 110.8)" on line 33.

Change ",as per 110.10" to "(110.10)" on line 34.

Delete "of 110.8" and "of 110.10" on line 37.

Cl **110** *SC* **110.8** *P* **148** *L* **40** # 106

Brown, Matthew APM

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

110 includes specifications for the 25GBASE-CR PMD, MDI, and Channel. Subclause titles should be specific about this.

SuggestedRemedy

Change heading from:
"25GBASE-CR electrical characteristics"
To:
"PMD electrical characteristics"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Following the suggested change, 110.8.1 and 110.8.2 should not be a within 110.8, since they refer to the MDI and the end-to-end channel respectively, and do not address the PMD.

Change heading from:
"25GBASE-CR electrical characteristics"
To:
"PMD electrical characteristics".

Move 110.8.1 to be a subclause of 110.11.

Move the content of 110.8.2 to 110.9.

Cl **110** *SC* **110.2** *P* **142** *L* **47** # 107

Brown, Matthew APM

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

The acronym PMD has been introduced and used multiple times prior to this subclause.

SuggestedRemedy

Change heading from:
"Physical Medium Dependent (PMD) service interface"
To:
"PMD service interface"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **110** *SC* **110.11.1** *P* **158** *L* **35** # 108

Brown, Matthew APM

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

It appears that the table only includes the data signals.

SuggestedRemedy

Change:
"The contact assignments"
To:
"The transmit and receive data signal contact assignments"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

In line 34, change "The contact assignments" to "The data signals and signal ground contact assignments".

In line 3, change "have contact assignments" to "have data signal and signal ground contact assignments".

Cl **110B** *SC* **110B.1.3.6** *P* **229** *L* **4** # 109

Brown, Matthew APM

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

Eqs. 110B-1 and 110B-2 are identical to 92-44 and 92-45.

SuggestedRemedy

Delete eqs. 110B-1 and 110B-2 and refer to eqs. 92-44 and 92-45, instead.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Many user's have had difficulty in the implementation of the ICN calculations.
The ICN text in 110B.1.3.6 is related to 110B-1 and 110B-2 and pointing to 92-44 and 92-45 will further complicate.

Cl **109B** *SC* **109B.4.4.4** *P* **217** *L* **40** # 110

Maki, Jeffery — Juniper Networks

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

"As 83E.1.1 with settings associated with Recommended_CTLE_value" is not compatible with mandatory use of Adaptive receiver. 25G-AUI chip to module needs to use autonmous Adaptive reciver.

SuggestedRemedy

Should read "As 83E.1.1 with autonmous adaptive CTLE."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

[The editor changed the reference "line" to 47.]

The commenter is apparently referring to PICS item RM2.
The reference to 83E.1.1 (which is titled "Bit Error Ratio") in the RM2 value/comment column is likely an error and should be 83E.3.4.1.1. However, 83E.3.4.1.1 does not specify in any way an "autonomous adapative CTLE".

For PICS item RM2.
Change the Value/Comment field to:
"As 83E.3.4.1.1 with settings
associated with Recommended_
CTLE_value"

Cl **105** *SC* **105.1.3** *P* **81** *L* **40** # 111

Wertheim, Oded — Mellanox Technologie

Comment Type **E** *Comment Status* **D** *mii instantiation, CC*

Table 105-2 indicates that 25G-MII (clause 106) is Mandatory for 25GBASE-CR, 25GBASE-KR, 25GBASE-SR. 25G-MII should be optional.

SuggestedRemedy

Chnage the table to indicate that 25G-MII is Optional for 25GBASE-CR, 25GBASE-KR, 25GBASE-SR.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See comments #21 and #117.

Cl **108** *SC* **108.5.2.4** *P* **111** *L* **9** # 112

Wertheim, Oded — Mellanox Technologie

Comment Type **ER** *Comment Status* **D** *codeword spacing*

20480 257-bit transcoded blocks are equivalent to 81920 64B/66B encoded blocks. (instead of 81960).

SuggestedRemedy

The distance between the beginning of successive codeword markers is therefore 20480 257-bit transcoded blocks, equivalent to 81920 64B/66B encoded blocks.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See also comment #29.

Cl **108** *SC* **108.4** *P* **109** *L* **13** # 113

Wertheim, Oded — Mellanox Technologie

Comment Type **TR** *Comment Status* **D** *rs-fec delay, CC*

A 24576 bit time (983.04 ns) maximum delay where the latency target is 250ns creates an unnecessary burden on the buffers management.
In addition the delay is inconsistent with table 105-3.
Propose to change to 614.4ns (2.5x the Clause 74 maximum delay)

SuggestedRemedy

Change the maximum delay to 15360 bit time (614.4 ns).
Update table 105.3 accordingly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The delay budget allows for some implementations for which it is may not be practical to meet the proposed round-trip delay. Historically, the delay budget has been generous for this reason.

Change maximum RS-FEC delay in Table 105-3 to 24576 bit times, 48 pause_quanta, and 983.04 ns, to match 108.4.

See also comment #115.

Cl **105** *SC* **105.5** *P* **90** *L* **47** # 114

Cober, Don — CoMIRA Solutions Inc

Comment Type **ER** *Comment Status* **D** *rs-fec delay*

The delay for 25GBASE-R RS-FEC in Sublayer Delay Constraints Table 105-3 does not match delay in 108.4.

SuggestedRemedy

Change 5th row to:

25GBASE-R RS-FEC | 24576 | 48 | 983.04 | See 108.4.

or appropriate to match Clause 108.4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change 5th row to:
25GBASE-R RS-FEC | 24576 | 48 | 983.04 | See 108.4.

Also, see comments 115 and 113.

Cl **108** *SC* **108.4** *P* **109** *L* **12** # 115

Cober, Don — CoMIRA Solutions Inc

Comment Type **T** *Comment Status* **D** *rs-fec delay, CC*

Maximum delay in UI of equivalent FECs should scale based on codeword length.
Maximum delay in ns of equivalent FECs should scale based on codeword length and inversely based on rate.

In Clause 74 the delay in UI is shown to scale based on codeword length:

10G = 2112 bits of CW , delay = 6144 UI
40G = 4 x 2112 bits of CW , delay = 4 x 6144 = 24576 UI
100G = 20 x 2112 bits of CW , delay = 20 x 6144 = 122880 UI

Since the Clause 108 FEC is using the same codeword length and structure of Clause 91, the delay in UI should be the same : 40960. Since the data rate is 1/4 of Clause 91 we would expect the max delay to be 4x~400ns =~1600ns.

A target delay of 250ns is very aggressive for 25G. In 100G the target was 100ns.
The delay of the FEC layer can be broken into two parts, the CW accumulation and the decoding:
1. The codeword accumulation time is fixed for a given codeword size / datarate. In 100G this value is 5280/100G = 51.2ns. In 25G this is 5280/25G = 204.8ns.
2. The decoder time can vary depending on the hardware implementation (There is a tradeoff of area vs latency). In 100G the target is 100-51.2=48.8ns. A 25G target of 250ns would imply a decoder time of 250-204.8=45.2ns. To hit this target an implementation would need to use a 25G decoder of the same area (or greater) as a 100G decoder.

SuggestedRemedy

1. Change line 12 to:
.... shall be no more than 40960 bit times (80 pause_quanta or 1638.4 ns)....

2. Update Table 105-3 to match.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The delay does not neccesarily scale inversely with the rate, since the striping is different.

Although the codeword accumulation period in 25G is 4x longer, the Baud rates of 25G and 100G are the same, so it is expected that the decoding logic can be implemented in a similar way in both cases, such that the decoding takes about 50 ns (see gustlin_081214_25GE_adhoc, slide 15).

Even with a slower design that requires 400 ns for accumulation and decoding, the maximum delay is more than twice that, and should be easy to meet.

See also comment #113.

Cl **108** *SC* **108.5.4.2** *P* **117** *L* **23** # 116

Cober, Don — CoMIRA Solutions Inc

Comment Type **T** *Comment Status* **D** *codeword markers*

cwm_valid state variable is checking 48 nibbles (4 AMs) to find the edge of the codeword, while the original amp_valid for Clause 91.5.4.2.1 only checks for 12 (Only AM0 is saught for alignment).

The extra checking should not be required for 25G RSFEC if it is not needed for 100G RSFEC.

SuggestedRemedy

Change to:

cwm_valid
Boolean variable that is set to true if the received 257-bit block is a valid codeword marker. Bits [0:23] and [32:55] of the candidate block are compared to the known 48 bits of the AM0 codeword marker on a nibble-wise basis (12 comparisons). If no more than 3 nibbles in the candidate block fail to match the corresponding known nibbles in the codeword marker, the candidate block is considered a valid codeword marker.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Codeword markers are defined as 257-bit blocks and are not comprised of four separate AMs.

Clause 91 RS-FEC has four PMA lanes which may be re-ordered and have different AM content on each one, so comparing only the first AM enables simpler implementation. With a single lane there is no such benefit, and there is no reason to introduce 64-bit structure.

See also comment #34.

Cl **106** *SC* **1** *P* **93** *L* **6** # 117

Nicholl, Gary — Cisco Systems

Comment Type **E** *Comment Status* **D** *MII instantiation, CC*

It is probably worth mentioning that Clause 106 is based on Clause 46. Suggest using a statement that is similar to the one included in sectiuon that is included in section 107.1.2 on page 99.

SuggestedRemedy

Suggest including a statement along the lines of " The 25Gigabit Reconciliation Sublayer (RS) is identical to the 10Gigabit Reconciliation Sublayer specified in Clause 49.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add the following sentence in the first paragraph of 106.1:
"The 25 Gb/s RS has identical logical functionality to the 10 Gb/s RS defined in Clause 46. A physical implementation and associated electrical characteristics for the 25G-MII are not defined."

See comment #21 and #111.

Cl **107** *SC* **2** *P* **101** *L* **17** # 118

Nicholl, Gary — Cisco Systems

Comment Type **E** *Comment Status* **D** *single-bit interface*

This clause is essentially referencing Clause 49. Most of Clause 49 is simply referenced, so I am not sure Figure 107-2 and Figure 107-3 are special and copied directly into Clause , compared to all of the other Figures in Clause 49 that are not copied accross.

SuggestedRemedy

I suggest not copying Figure 107-2 and Figure 107-3 , and simply referencing Clause 49, to be consistent with the rest of the detailed information and Figures in Clause 49 which are not copied.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

They are copied over because the 25 Gb/s PMA service interface is single-bit rather than 16-bit. These figures have been modified to show that.

Cl **105** *SC* **105.4.3.2.2** *P* **87** *L* **36** # 119

Nicholl, Gary — Cisco Systems

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

I think the word 'trasmits' is missing in the follwoing sentance " The sublayer continuously a bit strea ....."

SuggestedRemedy

Replace with "The sublayer continuously transmits a bit stream"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The service interfaces receives bits from the client sublayer.

Change:
"The sublayer continuously a bit stream"

To:
"The sublayer continuously receives a bit stream"

Cl **107** *SC* **107.3** *P* **104** *L* **50** # 120

Lusted, Kent — Intel

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

This paragraph is one sentence and it hard for a reader to determine what is mandated by the "shall" statements.

"If the 25GBASE-R PCS is part of a PHY configured for EEE fast wake operation the PCS shall encode and decode LPI as required, however it shall not perform the actions described in the transmit and receive state diagrams defined in Figure 49-12 and Figure 49-13 but behave as if in the TX_ACTIVE and RX_ACTIVE states depicted in those diagrams."

I think that the intent is 2-fold:
1. a PHY configured for EEE FW shall encode and decode LPI
2. a PHY configured for EEE FW shall behave as if in the TX_ACTIVE and RX_ACTIVE states when in the FW mode.

SuggestedRemedy

I don't have a good example. sorry.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change to:
"If the 25GBASE-R PCS is part of a PHY configured for EEE fast wake operation the PCS shall encode and decode LPI when indicated, however it shall not perform the actions described in the transmit and receive state diagrams defined in Figure 49-12 and Figure 49-13 but behave as if in the TX_ACTIVE and RX_ACTIVE states depicted in those diagrams."

Cl **105** *SC* **105.1.1** *P* **79** *L* **14** # 121

Lusted, Kent — Intel

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

pointer to definition of frame loss ratio (see 1.4.223) is not correct.

P802.3bx draft 2.0 has frame loss ratio as 1.4.222. (see P8023_D2p0_SECTION1.pdf, pg 74, line 13)

SuggestedRemedy

Update to 1.4.222 if necessary.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The relevant reference document is P802.3bx Draft 2.1 for which the subclause reference is correct.

Cl **105** *SC* **105.4.1** *P* **83** *L* **30** # 122

Lusted, Kent — Intel

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

typo. the interface includes some or all...

SuggestedRemedy

change "then the inter-sublayer service interface includes so or all..." to "change "then the inter-sublayer service interface includes some or all..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **107** *SC* **Figure 107-1** *P* **100** *L* **17** # 123

Lusted, Kent — Intel

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

the 1 in FEC1 should be a superscript.

same with the 2 in AN2

SuggestedRemedy

Consider changing the 1 in AN1 and 2 in AN2 to be superscript.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **105** *SC* **105.4.2** *P* **85** *L* **16** # 124

Lusted, Kent Intel

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

The FEC block shown on the inter-sublayer service interface can be optional or omitted depending on the phy type.

It would also be useful to change "FEC" in the block to be "FEC or RS-FEC" as in Figure 105-3.

SuggestedRemedy

Update Figure 105-2 with appropriate note, such as "NOTE 1-OPTIONAL OR OMITTED DEPENDING ON PHY TYPE", and mark FEC block appropriately.

change "FEC" in the block to be "FEC or RS-FEC"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

[The editor changed the subclause from Figure 105-2 to 105.4.2.]

The comment is referring to Figure 105-2.

See comment #41.

Cl **109** *SC* **109.2** *P* **130** *L* **23** # 125

Ran, Adee Intel

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

PMA service interface, so primitives should be PMA:*

Also in line 39.

SuggestedRemedy

Change PMD to PMA, 4 times.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change:
"PMD:IS_UNITDATA.request
PMD:IS_UNITDATA.indication
PMD:IS_SIGNAL.indication"

To:
"PMA:IS_UNITDATA.request
PMA:IS_UNITDATA.indication
PMA:IS_SIGNAL.indication"

AND

Change:
"The SIGNAL_OK parameter of the PMD:IS_SIGNAL.indication primitive"
To:
"The SIGNAL_OK parameter of the PMA:IS_SIGNAL.indication primitive"

Cl **109** *SC* **109.2** *P* **130** *L* **41** # 126

Ran, Adee Intel

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

"The PMA:IS_SIGNAL.indication primitive is generated through a set of Signal Indication Logic (SIL) that reports signal health based on receipt of the inst:IS_SIGNAL.indication from the sublayer below, data being received from the sublayer below, and bits being sent to the PMA client"

This statement is unclear, and it seems that it actually means "implementation dependent SIL".

Also, the requirement to relay the IS_SIGNAL.indication from the sublayer below should be normative when it has the value FAIL.

SuggestedRemedy

Change this paragraph to read:

The PMA:IS_SIGNAL.indication primitive is generated based on receipt of the inst:IS_SIGNAL.indication from the sublayer below and PMA internal signal indication methods at the discretion of the implementor. When the SIGNAL_OK parameter of inst.IS_SIGNAL.indication from the sublayer below has the value FAIL, or the PMA internally indicates no signal, the SIGNAL_OK parameter of the PMA:IS_SIGNAL.indication primitive shall have the value FAIL. Otherwise, SIGNAL_OK shall have the value OK.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Figure 109-2 shows the relationship between inst:IS_SIGNAL.indication(SIGNAL_OK) input, the "signal detect" function, and PMA:IS_SIGNAL.indication(SIGNAL_OK) output. This figure should be used as a reference.

The specification of PMA:IS_SIGNAL.indication(SIGNAL_OK) in 109.2 does not adequately specify the intent.

PMA:IS_SIGNAL.indication(SIGNAL_OK) is redundantly defined in 109.4.3 Link Status.

In 109.1.3, delete the last bullet "g)" in the function list (page 128 line 14).

Change the second paragraph of 109.1.3 (page 128, line 16) to:
The function diagram in Figure 109-2 shows the inputs, outputs, test pattern checking and generation, loopbacks, and Signal Indication Logic (SIL) (See 109.2).

In Figure 109-2, add "signal detect" label on bottom input line.

Change the 7th paragraph in 109.2 (page 130, line 42) to:
PMA:IS_SIGNAL.indication(SIGNAL_OK) is generated based on receipt of inst:IS_SIGNAL.indication(SIGNAL_OK) from the sublayer below and status of the input signal as determined by the signal detect function (see Figure 109-2). When inst:IS_SIGNAL.indication(SIGNAL_OK) has the value FAIL or the signal detect function detects an invalid signal, PMA:IS_SIGNAL.indication(SIGNAL_OK) shall have the value FAIL, otherwise PMA:IS_SIGNAL.indication(SIGNAL_OK) shall have the value OK. The operation of the signal detect function is beyond the scope of this standard.

Delete 109.4.3 Link Status (page 132, line 32).

Cl **108** *SC* **108.2** *P* **115** *L* **6** # 127

Ran, Adee Intel

Comment Type **T** *Comment Status* **D** *error marking, CC, NC*

The current text in subclause 108.2 makes the RS-FEC output undefined when SIGNAL_OK is FAIL. This is fine if the PCS is the client of the RS-FEC and FEC:IS_SIGNAL.indication is available to it. However, if 25G-AUI separates the RS-FEC and the PCS, then the SIGNAL_OK might not be available to the PCS.

We need to guarantee that the PCS identifies this condition, so that upper layers can be informed and AN restarted when the link is interrupted. This could be achieved with pervasive management, but a solution that does not involve management is preferable.

In order to guarantee that "multiple blocks are marked as bad" and cause hi_ber that will restart AN (as suggested in 108.5.3.3), it is required that the RS-FEC output be well-defined with blocks marked as bad even after codeword marker lock is lost (restart_lock is set to true and SIGNAL_OK becomes FAIL).

This can be achieved by continuing to send 64b/66b blocks with corrupted headers when SIGNAL_OK is FAIL (FEC_align_status is false and codewords are uncorrectable). The Reed-Solomon decoder (108.5.3.2) includes this behavior already - the only requirement is to continue passing its output to the service interface.

SuggestedRemedy

Delete the sentence "When SIGNAL_OK is FAIL, the rx_bit parameter of the FEC:IS_UNITDATA.indication primitive is undefined."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **108** *SC* **108.5.2.4** *P* **111** *L* **19** # 128
Ran, Adee Intel

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

Values of RSVD3, RSVD7 and Pad are TBD.

SuggestedRemedy

Change RSVD3 to hexadecimal FF and RSVD7 to hexadecimal 00 everyhere.

Change Pad to 0.

Delete editor's note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **108** *SC* **108.5.4** *P* **117** *L* **3** # 129
Ran, Adee Intel

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

EEE signaling over the RS-FEC sublayer is not addressed

SuggestedRemedy

A detailed proposal should be provided.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See ran_3by_01_0315.

Cl **110** *SC* **110.10** *P* **153** *L* **13** # 130
Ran, Adee Intel

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

SFP28 and QSFP28 were not part of the adopted nomenclature. SFP28 appears in the normative reference list, but QSFP does not.

SuggestedRemedy

Adopt the terms SFP28 and QSFP28 for the two MDI connector types.

Add a reference to SFF-8665 (QSFP28) in 1.3.

Remove editor's note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **069** *SC* **69.1.2** *P* **50** *L* **14** # 131
Dawe, Piers Mellanox

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

Looks unfinished.

SuggestedRemedy

In Figure 69-1, make the stack wider so 25GBASE-R PCS fits on one line, like Figure 105-1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **078** *SC* **78.1.4** *P* **72** *L* **21** # 132
Dawe, Piers Mellanox

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

Entries not in the usual order (slow to fast, short to long or ...).

SuggestedRemedy

Put all the new entries before XLAUI/CAUI-10.
Move 25G-AUI to above 25GBASE-KR.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The ordering of the 25G PHYs and AUI are consistent with other rate groups in this table.

Cl **109** *SC* **109.4.6.2** *P* **133** *L* **42** # 133
Dawe, Piers Mellanox

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

Receive PRBS31 Test Pattern Generation - rogue capitals?

SuggestedRemedy

Receive PRBS31 test pattern generation (like 109.4.6.1 Transmit PRBS31 test pattern generation above).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

[Editor provided Line 42 as it was blank]

Change:
"Receive PRBS31 Test Pattern Generation"
To:
"Receive PRBS31 test pattern generation"

Cl **112** *SC* **112.5.9** *P* **188** *L* **23** # 134

Dawe, Piers Mellanox

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

If the PMD has detected a local fault on the transmit lane

SuggestedRemedy

If the PMD has detected a local fault on the transmitter

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **112** *SC* **112.5.10** *P* **188** *L* **30** # 135

Dawe, Piers Mellanox

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

If the PMD has detected a local fault on any receive lane

SuggestedRemedy

If the PMD has detected a local fault on the receiver

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **093A** *SC* **93A.1** *P* **205** *L* **18** # 136

Dawe, Piers Mellanox

Comment Type **E** *Comment Status* **D** *com phy table*

Now that this list is growing, we should put the entries in the conventional order: slow to fast, low power to high power (which is usually short to long). Also, if there is an entry for 25GBASE-CR there should be one for 100GBASE-CR4.
"CAUI-4" is ambiguous.
There are really three columns here.

SuggestedRemedy

3 columns:

25GBASE-KR	(Clause 111)	Table 93-8
25GBASE-CR	(Clause 110)	Table 110-8
Chip-to-chip CAUI-4	(Annex 83D)	Table 83D-6
100GBASE-KR4	(Clause 93)	Table93-8
100GBASE-KP4	(Clause 94)	Table94-17
100GBASE-CR4	(Clause 92)	Table 93-8

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Addition of 100GBASE-CR4 to this table is out of scope for this project. The commenter is invited to submit a maintenance request to address this.

There is no consistent, conventional order as suggested in the comment. The order here is first by bit rate and then by order in which they appear in the draft.

A 3rd column for the Clause or Annex reference is not necessary. It is common throughout 802.3 to include a clause or subclause reference in brackets as is done here.

The CAUI-4 in the table is specifically the chip-to-chip CAUI-4. It would help to use the same designation style as used for the 25G-AUI C2C.

Change: "CAUI-4 (Annex 83D)"
To: "CAUI-4 C2C (Annex 83D)"

Also, see comment #66.

Cl **105** *SC* **105.4** *P* **83** *L* **7** # 137

Dawe, Piers Mellanox

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

There are nearly 7 pages of service interface specification method and notation, which should be the same as 40 and 100G.
If there are more than the natural differences because 25GBASE-R is serial, they should be explicity identified anyway, rather than leaving the reader to wade through all this. I hope there aren't, and this is an editorial comment.

SuggestedRemedy

Remove everything in 105.4 except the figures and some text introducing them.
Say that the service interface specification for 25GBASE-R Physical Layers is the same as for 40GBASE-R, 100GBASE-R, and 100GBASE-P Physical Layers, as in 80.3, except there is one lane in each direction (n = 1). Therefore the primitives shown there as IS_UNITDATA_i.request and IS_UNITDATA_i.indication are called IS_UNITDATA.request and IS_UNITDATA.indication for 25GBASE-R.
If you are feeling very conscientious, mention 25GBASE-R and Clause 108 in 80.3/80.3.1.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

All 25G service interfaces are serial.

By re-defining the service interface as a serial interface in all cases saves considerable explanatory text within each of the 25G subclauses that specify a service interface.

Also, many explanations of interfaces are difficult to interpret when written as parallel interfaces as in Clause 80.

Since this is the introductory clause for a new class of physical layer entities, it is worthwhile specifying a clear and relevant framework.

Cl **109A** *SC* **109A** *P* **207** *L* **6** # 138

Dawe, Piers Mellanox

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

In English, adjectives come before nouns.

SuggestedRemedy

Change 25G-AUI C2C and 25G-AUI C2M to C2C 25G-AUI and C2M 25G-AUI throughout.
Or create new acronyms such as 25G-AUI-C and 25G-AUI-M.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Postpositive adjectives are common in English. Please refer to the following reference for common usage and dozens of examples.
http://en.wikipedia.org/wiki/Postpositive_adjective

Cl **111** *SC* **111.9** *P* **175** *L* **17** # 139

Dawe, Piers Mellanox

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

Surely the environmental specifications should be just the same as for 100GBASE-KR4?

SuggestedRemedy

Remove the duplicate text.
Insert:
The 25GBASE-KR4 environmental specifications are as defined in 93.10 for 100GBASE-KR4.
Change PICS subclause to 111.9, twice.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change the content of 111.9 to the following:

"The 25GBASE-KR4 environmental specifications are as defined in 93.10".

Merge the PICS items in 111.10.4.5 to one item and refer to 111.9.

Cl **112** *SC* **112.5.4** *P* **187** *L* **19** # 140

Dawe, Piers Mellanox

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

There's only one signal detect function here, unlike the multi-lane PMDs.

SuggestedRemedy

Delete "global" from "SIGNAL_DETECT shall be a global indicator of the presence of the optical signal."
Merge 112.5.5 into 112.5.4 - it's the same function.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **112** *SC* **112.8.2** *P* **190** *L* **39** # 141

Dawe, Piers Mellanox

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

The operating range section is the same as 95.7.

SuggestedRemedy

Remove the duplicate text and table. Insert:
The operating range and fiber types for the 25GBASE-SR PMD are as specified in 95.7 for 100GBASE-SR4.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Subject to discussion and agreement by the task force.

The editor included this section because it's a short section within Clause 112 which confirms basic performance without requiring the reader to switch to another clause.

Cl **112** *SC* **112.10.3** *P* **193** *L* **24** # 142

Dawe, Piers Mellanox

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

25GBASE-SR uses multimode fibre. Does IEC 61753-021-2, Fibre optic passive components performance standard, Part 021-2: Fibre optic connectors terminated on single-mode fibre for Category C-Controlled environment, performance Class S apply?

SuggestedRemedy

Delete.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response to #143

Cl **112** *SC* **112.10.3** *P* **193** *L* **22** # 143

Dawe, Piers Mellanox

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

Are these references OK for both SFP+ and QSFP formats?
95.11.3.2 has performance specifications IEC 61753-1 and IEC 61753-022-2. 52.14.4 has performance specifications IEC 61753-1-1 and IEC 61753-022-2.
Is there a difference between IEC 61753-1 and IEC 61753-1-1?

SuggestedRemedy

Consider if IEC 61753-1-1 should be IEC 61753-1 here or IEC 61753-1 be IEC 61753-1-1 in 95.11.3.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
In section 112.10.3 delete notes c), d) and e) and replace
"When the MDI is a connector plug and receptacle connection, it shall meet the interface performance
specifications of the following:"
with
"When the MDI is a connector plug and receptacle connection, it shall meet the interface performance specifications of IEC 61753-1 and IEC 61753-022-2."

Cl **112** *SC* **112.6** *P* **188** *L* **32** # 144

Dawe, Piers Mellanox

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

A 25GBASE-SR transceiver in SFP+ format might be Hazard Level 1, but four of them in QSFP would be the same Hazard Level as 100GBASE-SR4, which is 1M in Clause 95. So I think we have to allow either.

SuggestedRemedy

Do we want to tie the Hazard Level to the form factor?
If not, just say Hazard Level 1 or Hazard Level 1M.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Use Hazard Level 1 throughout clause 112.
See response to #64

Cl **109B** *SC* **109B.1.1** *P* **214** *L* **22** # 145

Dawe, Piers — Mellanox

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

This bit error ratio spec goes with non-FEC PMDs that can't be connected to 25G-AUI. It adds a pointless burden of test cost and power - this is most obvious for a 25GBASE-SR module for which the PMD type is known.
Also, any consideration of error correlation should take the FEC into account.
The remedy below is intended to put no burden on the host and allow dual-use hosts or modules that are tested to CAUI-4 only.

SuggestedRemedy

Change
The bit error ratio (BER) shall be less than 10^-15 with any errors sufficiently uncorrelated to ensure an acceptably high mean time to false packet acceptance (MTTFPA) assuming 64B/66B coding.
to
The bit error ratio (BER) shall be less than 10^-6 with any errors sufficiently uncorrelated to ensure an acceptably high mean time to false packet acceptance (MTTFPA) assuming 64B/66B coding and the RS-FEC of Clause 108.
In 109B.3.1, add exceptions:
EW15 and EH15 do not apply.
Limits for EW6 and EH6 A and B are 0.46 UI and 95, 80 mV.
In 109B.3.2, add exceptions:
EW15 and EH15 do not apply.
Limits for EW6 and EH6 are 0.57 UI and 228 mV.
VEC6 is defined as 20*log10(AV/EH6). Limit 4.5 dB.
In 109B.3.3, add exceptions:
Host implementer may comply to either the host stressed input test of 83E.3.3.2 (BER <= 1e-15) or to a test to BER<=1e-6 with the EW6, EH6 defined for the module output in 109B.3.2 with a VEC6 in the range of 3.5 dB to 4.5 dB with a target value of 4 dB.
In 109B.3.4, add exceptions:
Module implementer may comply to either the module stressed input test of 83E.3.4.1 (BER <= 1e-15) or to a test to BER<=1e-6 with the EW6, EH6 defined for the host output in 109B.3.1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Pending task force review.

Cl **110** *SC* **110.8.4.2.3** *P* **150** *L* **11** # 146

Mellitz, Richard — Intel Corporation

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

test 3 and test 4 fitted insertion loss coefficients are not aligned with posted cable measurements

SuggestedRemedy

See mellitz_by_xxx for recommended values.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See mellitz_3by_0315.

Cl **110C** *SC* **110C.1** *P* *L* # 147

Mellitz, Richard — Intel Corporation

Comment Type **TR** *Comment Status* **D** *no-FEC*

A no FEC link will like not work for a 3 meter cable.

SuggestedRemedy

Add another MDI called CA-N.
Change
25GBASE-CR has two specified MDI connectors, single-lane (SFP28, specified in 110.11.1) and multi-lane
(QSFP28, specified in 92.12). This creates two host interface types and three cable assembly types with different combinations of the connectors at each end. These host and cable assembly types are referred to as
form factors, distinguishing both the host receptacle (MDI) and the cable assembly plug. 25GBASE-CR cable assemblies have two sets of electrical specifications, denoted CA-L and CA-S, as specified in 110.10. CA-L specifications are based on a single lane of 100GBASE-CR4 cable assembly (see
92.10), enabling a 5 m reach, and are compatible with25GBASE-CR PHYs that include the RS-FEC sublayer (Clause 108) with error correction enabled. The CA-S specifications enable a shorter reach of 3 m with
lower loss than CA-L, and are required for compatibility with 25GBASE-CR PHYs that bypass RS-FEC
error correction or that do not include the RS-FEC sublayer.

To

25GBASE-CR has three specified MDI connectors, single-lane (SFP28, specified in 110.11.1) and multi-lane
(QSFP28, specified in 92.12). This creates two host interface types and three cable assembly types with different combinations of the connectors at each end. These host and cable assembly types are referred to as
form factors, distinguishing both the host receptacle (MDI) and the cable assembly plug. 25GBASE-CR cable assemblies have two sets of electrical specifications, denoted CA-L, CA-S and CA-N, as specified in 110.10. CA-L specifications are based on a single lane of 100GBASE-CR4 cable assembly (see
92.10), enabling a 5 m reach, and are compatible with25GBASE-CR PHYs that include the RS-FEC sublayer (Clause 108) with error correction enabled. The CA-S specifications enable a shorter reach of 3 m with
lower loss than CA-L for interfaced which use a Clause 74 FEC. . The CA-S specifications enable even a shorter reach of 2 m with lower loss than CA-C for interfaced which use a no FEC operation.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The suggested remedy appears to be using the term MDI to refer to a cable type and is seems to be suggesting that in addition to the CA-L (5 m, RS-FEC) and CA-S (3 m, BASE-R FEC) cable types, a third cable type CA-N (TBD m, no FEC).

See comments #54, #8, and #14.

Cl **112** *SC* **112.9** *P* **191** *L* **36** # 148

Dawe, Piers — Mellanox

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

Fiber optic cabling model is the same as for 100GBASE-SR4.

SuggestedRemedy

Delete present contents, refer to 95.10 Fiber optic cabling model and state that Cabling Skew and Cabling Skew Variation don't apply.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Subject to discussion and agreement by the task force.

The editor included this section because it is a relatively short section within Clause 112 which confirms basic cabling requirements without the reader needing to switch to another clause.