C/ 045 SC 45.2.1.124 P 63 L 41 # 1 C/ 000 SC 0 P 105 L 32 Cadence Design Syste Anslow, Pete Marris, Arthur Ciena Comment Type Т Comment Status D bucket Comment Type ER Comment Status D bucket Remove editors note Many of the new PICS statements do not have the appropriate entries in the Support column. SuggestedRemedy If the Status is "M", then there should just be "Yes []" in the Support column. Add 50G, 100G PAM4 to 45.2.1.124 text as modified by 802.3bs If the Status is "O", then there should just be "Yes []" and "No []" in the Support column. If the Status is conditional on something else and M, then there should just be "Yes []" Proposed Response Response Status W and "N/A []" in the Support column. PROPOSED ACCEPT. If the Status is conditional on something else and O, then there should be "Yes []", "No [1". and "N/A []" in the Support column. C/ 045 SC 45.2.1.7.4 P 49 L 10 SuggestedRemedy Anslow. Pete Ciena Scrub the New PICS statements to apply the rules in the comment. Comment Type ER Comment Status D bucket Proposed Response Response Status W In Tables 45-9, 45-10, and 45-12 IEEE Std 802.3bq-2016 has inserted a row for 40GBASE-PROPOSED ACCEPT. T below the row for 40GBASE-FR. SuggestedRemedy C/ 080 SC 80.1.2 P 85 L4 Change the editing instructions for the 50G insertions to be below 40GBASE-T Anslow. Pete Ciena Proposed Response Response Status W Comment Type T Comment Status D bucket PROPOSED ACCEPT. An item should be added to 80.1.2 for the 1 lane MDI for 100GBASE-DR SuggestedRemedy C/ 082 SC 82.7.4.11 P 95 L 9 # 5 Show item g) as changing to: "The MDIs as specified in Clause 89 for 40GBASE-FR and Anslow. Pete Ciena Clause 140 for 100GBASE-DR use a single lane data path." Comment Type E Comment Status D bucket Proposed Response Response Status W In the table in 82.7.6.4 (renumbered as 82.7.4.11) the entries in the support column are PROPOSED ACCEPT IN PRINCIPLE. incorrect in the base standard. Since this table is being changed in this draft, these should be corrected. The 100GBASE-DR PHY is listed in list item m). However, it would be better to list 100GBASE-DR along with 40GBASE-FR. SuggestedRemedy In the row for *AN1 add "No []" in underline font in the support column. Delete item m) and change item g) to: In the rows for AN2 through AN4 add "N/A []" in underline font in the support column. "The MDIs as specified in Clause 89 for 40GBASE-FR and Clause 140 for 100GBASE-DR Proposed Response Response Status W use a single lane data path." PROPOSED ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed Z/withdrawn SORT ORDER: Comment ID

Comment ID 12

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C/ 136 SC 136.8.12.6 P 193 L 46 # 17 C/ 136 SC 136.9.4.2 P 205 L 38 # 25 Ran, Adee Ran, Adee Intel Intel Comment Status D Comment Type Т Comment Status D bucket Comment Type E bucket The number 2 is in magenta, a peculiar color. Nothing seems wrong with this value. The number 13.28 is in magenta, a peculiar color (twice). Nothing seems wrong with this SuggestedRemedy Also in 136.9.4.2.3. Paint it black. SuggestedRemedy Proposed Response Response Status W Paint'em black. PROPOSED ACCEPT. Proposed Response Response Status W PROPOSED ACCEPT. C/ 136 P 201 SC 136.9.3 L 26 # 20 Ran. Adee Intel C/ 136 SC 136.9.4.2.4 P 207 L 10 # 26 Comment Type E Comment Status D bucket Ran. Adee Intel Editor's note has served its purpose. Comment Type E Comment Status D bucket SuggestedRemedy Editor's note has served its purpose. delete editor's note. SuggestedRemedy Proposed Response Response Status W delete editor's note. PROPOSED ACCEPT. Proposed Response Response Status W PROPOSED ACCEPT. C/ 136 SC 136.9.3.1.2 P 203 L 42 # 21 Ran. Adee Intel See comment #165 Comment Status D Comment Type E bucket C/ 136 SC 136.9.4.2.5 P 207 L 25 # 27 The number 0.49 is in magenta, a peculiar color. Nothing seems wrong with this value. Ran, Adee Intel Editor's note has served its purpose. Comment Status D Comment Type Ε bucket SuggestedRemedy Editor's note has served its purpose. Paint it black. Also in table 136-11. SuggestedRemedy Delete editor's note. delete editor's note. Proposed Response Response Status W Proposed Response Response Status W PROPOSED ACCEPT. PROPOSED ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed Z/withdrawn SORT ORDER: Comment ID

Comment ID 27

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Cl 136 SC 136.14 Ran, Adee	P 215 Intel	L 5	# 28	Cl 136 SC 136.7 Ran, Adee	<i>P</i> 181 Intel	L 41	# 35
Comment Type T PICS tables for clause	Comment Status D 136 are not updated.		bucket		Comment Status D ble mapping should be upda	ated, so that the	bucket editor's note can be
SuggestedRemedy Create PICs tables bas Proposed Response PROPOSED ACCEPT.	Response Status W			register mapping in clau	table 136-6 according to value 45. Add registers in claus		
CI 073 SC 73.3 Ran, Adee Comment Type E "see 73-9" should be "s	P76 Intel Comment Status D see 73.9".	L 49	# [29 bucket	Implement with editorial Delete editor's note. Proposed Response PROPOSED ACCEPT.	Response Status W		
SuggestedRemedy correct per comment				CI 136 SC 136.8.8 Ran, Adee	<i>P</i> 185 Intel	L 37	# [37
Proposed Response PROPOSED ACCEPT.	Response Status W			Comment Type E This subclause describe function is specified in 1	Comment Status D es the _local_ loopback func 35.5.8.	tion. Control of t	bucket he local loopback
Cl 136 SC 136.6 Ran, Adee	<i>P</i> 180 Intel	L 34	# 32	SuggestedRemedy	ence from 135.5.9 to 135.5.8	l.	
Comment Type E Editor's note has serve	Comment Status D d its purpose.		bucket	Proposed Response PROPOSED ACCEPT.	Response Status W		
SuggestedRemedy Delete the editor's note				Cl 136 SC 136.8.8 Ran, Adee	P 185 Intel	L 22	# 38
Proposed Response PROPOSED ACCEPT.	Response Status W			Comment Type T Editor's note has served	Comment Status D its purpose.		bucket
				SuggestedRemedy Delete the editor's note.			
				Proposed Response PROPOSED ACCEPT.	Response Status W		

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed Z/withdrawn SORT ORDER: Comment ID

Comment ID 38

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C/ 136 SC 136.11.7.1.1 P 211 L 8 # 45 C/ 137 SC 137.10.1 P 232 L 21 # 55 Ran, Adee Intel Ran, Adee Intel Comment Status D Comment Type E Comment Status D bucket Comment Type E bucket Value in magenta has not drawn any discussion. It can be made black. Values in magenta seem agreeable. They can be made black. SuggestedRemedy SuggestedRemedy Paint it black. Paint'em black. Proposed Response Proposed Response Response Status W Response Status W PROPOSED ACCEPT. PROPOSED ACCEPT. See comment #77. C/ 137 P 223 SC 137.1 L 28 # 47 Ran. Adee Intel C/ 137 SC 137.12 P 234 L 5 Comment Type Ε Comment Status D bucket Ran. Adee Intel Editor's note has served its purpose. Comment Type T Comment Status D bucket SuggestedRemedy PICS tables for clause 137 are not updated. delete editor's note. SuggestedRemedy Proposed Response Response Status W Create PICs tables based on the clause text. PROPOSED ACCEPT. Proposed Response Response Status W PROPOSED ACCEPT. C/ 137 SC 137.9.3.1 P 230 L 2 # 52 Ran. Adee Intel C/ 136 SC 136.9.3 P 201 L 34 Comment Status D Comment Type E bucket Dawe, Piers Mellanox Values in magenta have not drawn any discussion. They can be made black. Comment Type Comment Status D bucket SuggestedRemedy The first sentence of 136.9.3 says these are specifications. This is a spec, not a datasheet. Paint'em black, and delete editor's note. SuggestedRemedy Proposed Response Response Status W Change Table 136-11--Transmitter characteristics at TP2 summary to Table 136-11--Summary of transmitter specifications at TP2 PROPOSED ACCEPT. Proposed Response Response Status W C/ 137 SC 137.10 P 231 L 6 # 54 PROPOSED ACCEPT. Ran, Adee Intel Comment Type Ε Comment Status D bucket Values in magenta have not drawn any discussion. They can be made black. SuggestedRemedy

Paint all magenta values in table 137-5 black.

Response Status W

Proposed Response

PROPOSED ACCEPT.

C/ 136A SC 136A.5 P 355 L 12 # 76 C/ 134 P 142 L 44 SC 134.5.4.2.1 # 82 Brown, Matt Applied Micro Dawe, Piers Mellanox Comment Type Ε Comment Status D bucket Comment Type T Comment Status D bucket Wrong reference The redefinition for fec optional states includes the opening sentence "Boolean variable that is true if the optional states are implemented and false otherwise." For the Clause 134 SuggestedRemedy FEC, this sentence is out of context since the "optional states" are always implemented. Reference to using Equation (136A-3) should be to Equation (136A-2). SuggestedRemedy Proposed Response Response Status W Delete "Boolean variable that is true if the optional states are implemented and false PROPOSED ACCEPT IN PRINCIPLE. otherwise." Proposed Response Response Status W See commment resolution #136 PROPOSED ACCEPT IN PRINCIPLE. C/ 134 SC 134.2 P 133 L 33 # 81 Replace the definition with the following: Brown. Matt Applied Micro "Boolean variable that is always set to true to indicate that the optional states in the FEC synchronization state diagram in Figure 91-8 are implemented." Comment Type E Comment Status D bucket Given that there are both "FEC lanes" and "PCS lanes", the full term should be used rather C/ 082 SC 82.7.4.7 P 94 L 38 # 83 than just "lanes". Brown, Matt Applied Micro SuggestedRemedy Comment Type E Comment Status D bucket Where "lanes" is referring to FEC lanes, replace "lanes" with "FEC lanes" as necessary. Where "lanes" is referring specifically to PCS lanes, replace "lanes" with "PCS lanes" as Editor's note has served it's purpose. necessary. SugaestedRemedy Remove editor's note. Some specific locations: page 133, line 33, "FEC lane" Proposed Response Response Status W page 134, lines 16 and 32, "PCS lane" PROPOSED ACCEPT. page 135, Figure 134-2 page 138, line 5 page 141, Figure 134-5 C/ 134 P 140 L 13 SC 134.5.3.7 Brown, Matt Applied Micro Proposed Response Response Status W PROPOSED ACCEPT. Comment Type E Comment Status D bucket Editor's note has served it's purpose. SuggestedRemedy Remove editor's note.

Proposed Response

PROPOSED ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed Z/withdrawn SORT ORDER: Comment ID

Comment ID 84

Response Status W

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C/ 134 SC 134.5.4.2.1 P 142 L 9 # 85 C/ 137 SC 137.8.1 P 227 L 13 # 89 Applied Micro Brown, Matt Applied Micro Brown, Matt Comment Type E Comment Status D bucket Comment Type E Comment Status D bucket Editor's note has served it's purpose. Editor's note has served it's purpose. SuggestedRemedy SuggestedRemedy Remove editor's note. Remove editor's note. Proposed Response Proposed Response Response Status W Response Status W PROPOSED ACCEPT IN PRINCIPLE. PROPOSED ACCEPT. Per comment #154, the lane numbers are actually zero-based. SC 136.1 P 176 C/ 136 L 28 # 86 Brown. Matt Applied Micro Delete "+1" from all indices. Comment Type E Comment Status D bucket Delete editor's note. Editor's note has served it's purpose. SC 137.9.2 P 229 L 3 SuggestedRemedy C/ 137 # 90 Remove editor's note. Brown, Matt Applied Micro Proposed Response Response Status W Comment Type Comment Status D bucket PROPOSED ACCEPT. Editor's note speculates that a different SNR may be required. If this is necessary then a comment a supporting information is required. C/ 136 SC 136.8.1 P 183 L 5 # 87 SuggestedRemedy Brown. Matt Applied Micro Remove editor's note. Comment Status D Comment Type E bucket Proposed Response Response Status W Editor's note has served it's purpose. PROPOSED ACCEPT. SuggestedRemedy C/ 137 SC 137.10.2 P 233 L 2 Remove editor's note. Brown, Matt Applied Micro Proposed Response Response Status W Comment Type T Comment Status D bucket PROPOSED ACCEPT IN PRINCIPLE. Parameters in Equation 137-4 are magenta. The editor's note below says that the figure must be updated if the parameters change. See response to #154. SuggestedRemedy Change the parameters to black text and remove editor's note. Proposed Response Response Status W PROPOSED ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed Z/withdrawn SORT ORDER: Comment ID

Comment ID 91

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C/ 138 SC 138.1 P 242 # 92 C/ 136 SC 136.11.7 P 210 L 30 L 39 # 98 Wertheim, Oded Brown, Matt Applied Micro Mellanox Technologie Comment Type E Comment Status D bucket Comment Type ER Comment Status D bucket Editor's note has served it's purpose. Table 136-15-COM parameter values - Transmitter equalizer, 2nd post-cursor coefficient should be 2nd pre-cursor coefficient SuggestedRemedy SuggestedRemedy Remove editor's note. Fix the text to Transmitter equalizer, 2nd pre-cursor coefficient Proposed Response Response Status W Proposed Response Response Status W PROPOSED ACCEPT. PROPOSED ACCEPT. SC 0 P0C/ 000 10 # 93 C/ 131 SC 131.1.2 P 107 L 10 # 104 Brown, Matt Applied Micro Ghiasi Quantum LLC Ghiasi, Ali Comment Type T Comment Status D bucket Comment Type TR Comment Status D bucket PICS in Annexes 135B to 135G and 136B are incomplete. LAUI-2 and 50GAUI-2 are introduced to this point the reader does not know what they till SuggestedRemedy they read page 113 Complete PICS. SuggestedRemedy Proposed Response Response Status W We either need to add explicit definition for LAUI-2 is an optional 2 lanes electrical interface above the FEC operating at 25.78125 GBd and 50GAUI-2 is an optional 2 lanes electrical PROPOSED ACCEPT. interface below the FEC operating at 26.5625 GBd. This wording should in this section or it could added in front material. C/ 136B SC 136B.1 P 358 # 94 L 20 Proposed Response Response Status W Brown, Matt Applied Micro PROPOSED REJECT. Comment Type T Comment Status D bucket If any changes are required to the QSFP28 specifications then a comment is required. A definition for 50GAUI-n and LAUI-2 is provided in 1.4.72a7. SuggestedRemedy IEEE 802.3 is a consistently structured document. Although, references to many terms Remove editor's note. occur in the introduction clauses, the reader understands that for full understanding the defining clause or annexes must be consulted. Proposed Response Response Status W PROPOSED ACCEPT. C/ 134 SC 134.5.2.6 P 137 1 24 # 105 Ghiasi. Ali Ghiasi Quantum LLC C/ 136C SC 136C.3.1 P 363 L 13 # 95 Comment Type TR Comment Status D bucket Brown, Matt Applied Micro Tx scrambled no clear Comment Type Comment Status D bucket SuggestedRemedy Editor's note solicits contributions on breakout from 200GBASE-CR4 to 100GBASE-CR2. Since there have been no contributions remove editor's note. change to Start of tx_scrambled data SuggestedRemedy Proposed Response Response Status W Remove editor's note. PROPOSED REJECT. Proposed Response Response Status W Current implementation is consistent with Clause 91 (Figure 91-4). PROPOSED ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed Z/withdrawn SORT ORDER: Comment ID

Comment ID 105

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bucket

 CI 136
 SC 136.11
 P 208
 L 30
 # 107

 Ghiasi, Ali
 Ghiasi Quantum LLC

 Comment Type
 TR
 Comment Status
 D
 bucket

One discuss SFP28 and QSFP28, I don't see the third conector

SuggestedRemedy

either change three connector to two or add the third connector

Proposed Response Status W

PROPOSED REJECT.

The paragraph states that there are "two specified MDI connectors" with "three possible combinations"; SFP28 to SFP28,

QSFP28 to QSFP28, and QSFP28 to 4xSFP28.

Cl 135G SC 135G.1 P 349 L 10 # 116

Ghiasi, Ali Ghiasi Quantum LLC

Comment Type TR Comment Status D

For this clause we are referencing CL120.D broken specification. C2M simulation were based on channels with ICN of ~0.7 dB where QSFP28 ICN is in excess of 4 mV. For background please see attach presentation

http://www.ieee802.org/3/bs/public/16_09/ghiasi_3bs_01_0916.pdf

SuggestedRemedy

Both BS and CD task force need to develop a robust C2M specifications, this will likley involve tighting the transmiter RLM and jitter and receiver sensitivity.

Proposed Response Response Status W

PROPOSED REJECT.

Annex 135G references all specifications in P802.3bs Annex 120E (not Annex 120D).

Since Annex 120E is still open for commenting no changes are required to Annex 135G.

Cl 045 SC 45.2.1.116d P 55 L 8 # 124

Hidaka, Yasuo Fujitsu Labs. of Ameri

Comment Type E Comment Status D bucket

45.2.1.116d has been updated in P802.3bs draft.

SuggestedRemedy

Change "The transmitter, receive direction, is the transmitter that sends data towards the PCS."

to

"The transmitter, receive direction, is the transmitter that sends data towards the MAC."

Proposed Response Response Status W PROPOSED ACCEPT.

Cl 045 SC 45.2.1.116e P 57 L 38 # 125

Hidaka, Yasuo Fujitsu Labs. of Ameri

Comment Type E Comment Status D

45.2.1.116e has been updated in P802.3bs draft.

SuggestedRemedy

Change "The transmitter, receive direction, is the transmitter that sends data towards the PCS."

to

"The transmitter, receive direction, is the transmitter that sends data towards the MAC."

Proposed Response Status **W**

PROPOSED ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed Z/withdrawn SORT ORDER: Comment ID

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bucket

C/ 135 SC 135.6 P 165 C/ 136 SC 136.5 P 180 # 129 L 44 # 126 L 23 Fujitsu Labs. of Ameri Hidaka, Yasuo Hidaka, Yasuo Fujitsu Labs. of Ameri Comment Type Comment Status D bucket Comment Type Т Comment Status D bucket The description of PMA precoder control in Table 135-2 is inconsistent with Clause 45. The bit time in the footnote a) of Table 136-4 is wrong. SuggestedRemedy SuggestedRemedy Change "1.152.7" to "1.602.1" Change "20ns for 50GBASE-CR, 10ns for 100GBASE-CR2, and 5ns for 200GBASE-CR4" to "20ps for 50GBASE-CR, 10ps for 100GBASE-CR, and 5ps for 200GBASE-CR4". Change "1.152.6" to "1.602.0" Change "1.152.5" to "1.603.1" Proposed Response Response Status W Change "1.152.4" to "1.603.0" PROPOSED ACCEPT. Change "1.152.3" to "1.600.1" Change "1.152.2" to "1.600.0" Change "1.152.1" to "1.601.1" C/ 135 SC 135.6 P 167 L 1 # 130 Change "1.152.0" to "1.601.0" Hidaka, Yasuo Fuiitsu Labs, of Ameri Change "precoder up tx enable 1" to "precoder tx up enable 1" Change "precoder up tx enable 1" to "precoder tx up enable 0" Comment Type Comment Status D bucket Change "precoder_up_rx_enable_1" to "precoder_rx_up_enable_1" "PMA precode request status (1.604)" is missing in Table 135-3. Change "precoder up rx enable 1" to "precoder rx up enable 0" Change "precoder_down_tx_enable_1" to "precoder_tx_down_enable_1" SugaestedRemedy Change "precoder_down_tx_enable_1" to "precoder_tx_down_enable_0" Add rows for "PMA precode request status (1.604)" to Table 135-3. Change "precoder down rx enable 1" to "precoder rx down enable 1" Proposed Response Response Status W Change "precoder down rx enable 1" to "precoder rx down enable 0" Change "PMA precoder control" for the appropriate name of "PMA precoder control Tx PROPOSED REJECT. down", "PMA precoder control Rx down", "PMA precoder control Tx up", or "PMA precoder control Rx up". This is used only for 50GAUI-1 and 100GAUI-2 C2C interfaces and thus is defined and Add rows for "PMA precoder request down (1.605)". referenced in Annex 135F only. Add rows for "PMA precoder request up (1.606)". SC 136A.4 C/ 136A P 354 L 31 # 134 Proposed Response Response Status W Hidaka, Yasuo Fujitsu Labs. of Ameri PROPOSED ACCEPT. Comment Type TR Comment Status D bucket C/ 135 SC 135.1.4 P 153 L 12 # 127 The recommended minimum printed circuit board trace insertion loss is specified by Equation (92A-2), not by Equation (92A-1). Hidaka, Yasuo Fujitsu Labs. of Ameri SuggestedRemedy Comment Type Ε Comment Status D bucket Change "The recommended maximum and minimum printed circuit board trace insertion Item 3) of item g) is describing CAUI-10. losses are specified in Equation (92A-1)." SuggestedRemedy to Change "CAUI-4" in item 3) of item g) to "CAUI-10". Proposed Response Response Status W "The recommended maximum and minimum printed circuit board trace insertion losses are PROPOSED ACCEPT. specified in Equation (92A-1) and Equation (92A-2), respectively." Proposed Response Response Status W See also comment 187. PROPOSED ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed Z/withdrawn SORT ORDER: Comment ID

Comment ID 134

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C/ 136A SC 136A.5 P 355 C/ 136 P 204 L 11 # 136 SC 136.9.3.1.4 L 19 Fujitsu Labs. of Ameri Hidaka, Yasuo Hidaka, Yasuo Fujitsu Labs. of Ameri Comment Type Ε Comment Status X bucket Comment Type Ε Comment Status D The nominal insertion loss of the mated test fixture is defined by Equation (136A-2), not by c(coef sel) is the normalized transmit equalizer coefficient, not the normalized amplitude. Equation (136A-3). SuggestedRemedy SuggestedRemedy Change "the normalized amplitude" to "the normalized transmit equalizer coefficient" at two Change the reference of IL MatedTF(f) from Equation (136A-3) to Equation (136A-2). locations in the first paragraph of 136.9.3.1.4 and two locations in the second paragraph of 136.9.3.1.4. Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE. Change "the normalized amplitude of a coefficient" to "the normalized transmit equalizer coefficient" in the third paragraph of 136.9.3.1.4. Change: P355 L12 Equation (136A-3) Proposed Response Response Status W To: Equation (136A-2) PROPOSED ACCEPT. Change: P355 L39 Equation (136A-3) To: Equation (136A-2) C/ 136 SC 136.9.4.2 P 205 L 22 Hidaka, Yasuo Fujitsu Labs. of Ameri P 359 L 33 C/ 136B SC 136B.1.1.6 # 140 Comment Type Comment Status D Hidaka, Yasuo Fujitsu Labs. of Ameri A grammer error. Comment Status D Comment Type Ε bucket SuggestedRemedy Table 136B-2 gives parameters for near-end crosstalk as well as far-end crosstalk. Change "in specified in Table 136-13" to "are specified in Table 136-13". SuggestedRemedy Proposed Response Response Status W Change the title of Table 136B-2 from "Mated test fixture integrated near-end crosstalk noise parameters" to "Mated test fixture integrated crosstalk noise parameters". PROPOSED ACCEPT. Proposed Response Response Status W PROPOSED ACCEPT. C/ 136C SC 136C P 362 L 7 # 141 Hidaka, Yasuo Fujitsu Labs. of Ameri Comment Type Ε Comment Status D bucket The title of 136C says 100GBASE-CR1. SuggestedRemedy Change "100GBASE-CR1" in the title of 136C to "100GBASE-CR2".

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed Z/withdrawn SORT ORDER: Comment ID

Response Status W

Proposed Response

PROPOSED ACCEPT.

Comment ID 147

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144

147

bucket

bucket

C/ 001 SC 1.4.54a P 36 L 1 # 151 Dudek, Mike Cavium

Comment Type Ε Comment Status D bucket

It seems strange to insert 100GBASE-DR between 100GBASE-CR10 and 100GBASE-KP4. It would make more sense to insert it between 100GBASE-LR4 and 100GBASE-SR2. Also to have 100GBASE-KR2 after 100GBASE-KR4 while 100GBASE CR4 is between

SuggestedRemedy

Make

100GBASE-DR become 1.4.58a1 100GBASE-SR2 become 1.4.58a2

100GBASE-KR2 become 1.4.54a

Proposed Response Response Status W

PROPOSED REJECT.

The definitions are sequenced according to the 802.3 formatting rules.

See "Definition sort order" in the following: http://www.ieee802.org/3/WG tools/editorial/requirements/words.html

C/ 001 SC 1.4.81 P 37 L 17 # 152 Dudek, Mike Cavium

Comment Type T Comment Status D

bucket

There are two four-lane versions.

SuggestedRemedy

Replace "a four-lane version (CAUI-4, GAUI-4)" with "two four-lane versions (CAUI-4, GAUI-4)"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change:

"a four-lane version (CAUI-4, 100GAUI-4)"

"two four-lane versions (CAUI-4, 100GAUI-4)"

C/ 136 P 183 L 6 SC 136.8.1 # 154 Dudek, Mike Cavium Comment Type T Comment Status D bucket

The Editor's note is helpful and would be helpful for future readers of the standard. Why do we want to remove the note prior to publication? However Clause 92 (including the MDI which is specified for clause 136 by reference to Clause 92) uses the 0 to 3

nomenclature not 1 to 4. It may be better to re-label the lanes here to match what is done in Clause 92.

the editors note.

SuggestedRemedy Either Change the Note from an Editor's note to a note. or as the previous paragraph already starts with "note that" just make this sentence into the last sentence of that

paragraph. Or remove the +1 in Figure 136-2 and the labels for SL and DL (throughout the clause) and

Make the same change to Clause 137 (and the editors note on page 277 line 13

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Indeed, contrary to the editor's note, the MDI in Clause 92 does use zero-based lane numbers. The one-based numbers are found only in 136.12, which should be fixed.

Remove the "+1" from indices in Figure 136-2 and clause text.

Delete editor's note.

In 136.12, change transmit and receive lane indices from 1-4 to 0-3.

See also comment #89.

C/ 136 SC 136.9.4.1 P 205 L 22 # 159 Dudek. Mike Cavium Comment Type Comment Status D bucket

typo

SuggestedRemedy

Change "requirements in" to "requirements are"

Proposed Response Response Status W

PROPOSED ACCEPT.

C/ 136 SC 136.9.4.2.4 P 206 L 54 # 163 Dudek, Mike Cavium Comment Type Т Comment Status D bucket Comment Type TR An alternating one-zero pattern isn't appropriate for this PAM4 pattern SuggestedRemedy Change to "alternating zero-three pattern" (Two places) Proposed Response Response Status W PROPOSED ACCEPT. P 214 C/ 136 SC 136.12 L 17 # 171 Dudek, Mike Cavium Comment Type T Comment Status D bucket In 92.12.1.1 the lanes are labelled 0 to 3 rather than 1 to 4. SuggestedRemedy Change SL4 to SL0 and DL4 to DL0 and re-order Proposed Response Response Status W PROPOSED ACCEPT. Resolve with comments #154 and #172 C/ 137 P 228 SC 137.9.1 L 35 # 173 Dudek, Mike Cavium Comment Status D Comment Type bucket "L" should have been converted to "n" as was done for many other instances. SuggestedRemedy Make the change. Proposed Response Response Status W PROPOSED ACCEPT.

C/ 091 SC 91.5 P 99 L 1 # 174 Dudek, Mike Cavium

bucket

The 100G Phy's call out clause 91 FEC but there is no call out in those clauses as to which FEC is used. There may also be other changes needed in clause 91 for exceptions.

SuggestedRemedy

Either Amend clause 91 to explicitly add Clauses 136, 137, 138, 140, and annexes 135F and 135G (or the PHY and AUI names) with any amendments necessary (eg in section 91.5.2.7. maybe in 91.5.2.8, maybe in 92.5.3.1 definitely in 91.5.3.3 etc.) or. Write a FEC subsection for the 100G versions to go into each of these clauses describing which FEC is used and any exceptions to clause 91.

Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE.

802.3-2015 91.5.2.7 specifies which FEC format to use for the defined 100G PHY types.

Update 91.5.2.7 to include the new 100G PHY types with editorial license.

Comment Status D

C/ 091 SC 91.5.3.1 P 98 L 39 # 175 Nicholl, Gary Cisco Systems

Comment Status D Comment Type T

bucket, < late>

Figure 91-8. The "2_Good" state is not consistent with the original Clause 91. I think it may have been copied from Clause 119 by mistake. In Clause 119 there are no FEC lanes.

SuggestedRemedy

Change "pcs_lane_mapping<x> pcs lane" to "FEC lane mapping<x> fec lane"

Proposed Response Response Status W

PROPOSED ACCEPT.

Late comment: This comment was submitted after the Task Force review closed.

C/ 131 SC 131.1.2 P107 L10 # 179
Nicholl, Gary Cisco Systems

Comment Type E Comment Status D bucket, <late>

Reading bullet "2c" it could be interpreted that LAUI-2 can use Annex 135D/E.

SuggestedRemedy

Reword to make it clear that LAUI-2 uses Annex135B/C and 50GAUI-2 uses Annex 135 D/E. Something like: "The PMA service interface, which, when physically implemented as LAUI-2 at an observable interconnection port uses a 2-lane data path as specified in Annex 135B or Annex 135C and when physically implemented as 50GAUI-2 (50 Gb/s two-lane Attachment Unit Interface) uses a 2-lane data path as specified in Annex 135D or Annex 135E" or change the text for bullet 2c to add the words "as appropriate" at the end so "The PMA service interface, which, when physically implemented as LAUI-2 and 50GAUI-2 (50 Gb/s two-lane Attachment Unit Interface) at an observable interconnection port, uses a 2-lane data path as specified in Annex 135B, Annex 135C, Annex 135D or Annex 135E, as appropriate"

Proposed Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Late comment: This comment was submitted after the Task Force review closed.

Replace item c) with the following:

"c) The PMA service interface, which, when physically implemented as LAUI-2, as specified in Annex 135B and Annex 135C, or as 50GAUI-2 (50 Gb/s two-lane Attachment Unit Interface), as specified in Annex 135D and Annex 135E, at an observable interconnection port, uses a 2-lane data path."

C/ 131 SC 131.2.3 P 109 L 13 # 180

Nicholl, Gary Cisco Systems

Comment Type T Comment Status D

bucket. <late>

FEC is mandatory for all PHYs.

SuggestedRemedy

Change: "An FEC sublayer specified in Clause 134 is available for all 50GBASE-R PHYs" to "50GBASE-R PHYs use the FEC sublayer specified in Clause 134". This makes the description consistent with 131.2.2.

Proposed Response Status W

PROPOSED ACCEPT.

Late comment: This comment was submitted after the Task Force review closed.

C/ 131 SC 131.2.4 P109 L19 # 181

Nicholl, Gary Cisco Systems

Comment Type E Comment Status D bucket, <late>

There is no mention of FEC in this section? For example "The 50GBASE-R PMA performs the mapping of transmit and receive data streams between the PCS and PMA via the PMA service interface, and the mapping and multi-plexing of transmit and receive data streams between the PMA and PMD via the PMD service interface" The 50GBASE-R PMA also performs the mapping of transmit and receive data streams between the FEC and PMA via the PMA service interface.

SuggestedRemedy

Change the sentence to read " The 50GBASE-R PMA performs the mapping of transmit and receive data streams between the PCS and PMA via the PMA service interface, the mapping of transmit and receive data streams between the FEC and the PMA via the PMA service interface, and the mapping and multi-plexing of transmit and receive data streams between the PMA and PMD via the PMD service interface"

Proposed Response Response Status W

PROPOSED ACCEPT.

Late comment: This comment was submitted after the Task Force review closed.

See comment #184.

Comment Type E Comment Status D

bucket, <late>

"The PMA allows the PCS (see Clause 133 and Clause 82) to connect in a media-independent way with a range of physical media. " Why is there no mention of FEC here? The PMA also allows the FEC sub-layer (see Clause 91 and Clause 134) to connect in a media-independent way with a range of physical media. Why do we single out the PCS but not mention FEC?

SuggestedRemedy

No proposed solution.

Proposed Response Status W

PROPOSED ACCEPT IN PRINCIPLE

Late comment: This comment was submitted after the Task Force review closed.

Change:

"The PMA allows the PCS (see Clause 133 and Clause 82) to connect in a media-independent way with a range of physical media."

To:

"The PMA allows the PCS (see Clause 133 and Clause 82) and FEC (see Clause 134 and Clause 91) to connect in a media-independent way with a range of physical media."

See comment #181.

C/ 135 SC 135.1.2 P151 L13 # 185

Nicholl, Gary Cisco Systems

Comment Type E Comment Status D bucket, <late>

Figure 135-1. We should decide whether to use "FEC" or "RS-FEC" in these OSI reference models, and then be consistent across all clauses

SuggestedRemedy

Decide whether to use "FEC" or "RE-FEC" for the OSI reference models and be consistent across all Clauses.

Proposed Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Late comment: This comment was submitted after the Task Force review closed.

In future 50G PHYs, there may be other FEC types defined so the introduction, RS/MII, PCS, and PMA, Clauses should refer to a generic FEC in the OSI layer diagram. The FEC type is explicitly called out in each of the PMD clauses.

Since the FEC clause and PMD clauses are referencing specific FEC specifications the OSI diagrams should refer to RS-FEC. All of the PMD clauses should be consistent.

In Figure 139-1 and Figure 140-1, change "FEC" to "RS-FEC".

Cl 135 SC 135.1.4 P 152 L 28 # [186

Nicholl, Gary Cisco Systems

Comment Type E Comment Status D bucket, <late>

Figure 135-2. Suggest extending Figure 135-2 to show LAUI-2 interface between 50G PCS and FEC , and CAUI-n between 100G PCS and FEC, to better align with the subsequent text which talkes about both LAUI-2 and CAUI-n.

SuggestedRemedy

Add LAUI-2 and CAUI-n to Figure 135-2.

Proposed Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Late comment: This comment was submitted after the Task Force review closed.

This diagram shows the locations of the PMA specified in Clause 135. Adding, the CAUI-n to the 100G stack would be confusing or would require a lot more labelling to differente between the PMA layers used by CAUI-n and 100GAUI-n.

However, it makes sense to add LAUI-2 to the diagram since it also uses the PMA specified in Clause 135.

Add a LAUI-2 interface in the 50G stack.

Cl 135 SC 135.1.4 P153 L12 # 187
Nicholl, Gary Cisco Systems

Comment Type E Comment Status D bucket, <late>

CAUI-4 should be CAUI-10.

SuggestedRemedy

Replace "CAUI-4 is specified Clause 83 and associated annexes." with "CAUI-10 is specified Clause 83 and associated annexes."

Proposed Response Status W

PROPOSED ACCEPT.

Late comment: This comment was submitted after the Task Force review closed.

See also comment 127.

Cl 135 SC 135.5 P156 L 27 # 190

Nicholl, Gary Cisco Systems

Comment Type T Comment Status D bucket, <late>

It is not clear what the word "divisors" means in the following sentence " As described in 135.1.4, the number of input lanes and the number of output lanes for a given PMA are divisors of 2 (below the FEC) or 4 (above the FEC) for 50GBASE-R, or 4 for 100GBASE-P, which are the number of PCSLs/FECLs for the respective PHYs". A retimer PMA would have the same number of input lanes as output lanes, in which case I don't see how the divisor can be 2 (or 4)?

SuggestedRemedy

Reword to make it clear what is meant by "divisors".

Proposed Response Status W

PROPOSED REJECT.

Late comment: This comment was submitted after the Task Force review closed.

Wikipedia defines divisor as follows:

"In mathematics, a divisor of an integer n, also called a factor of n, is an integer that can be multiplied by some other integer to produce n. An integer n is divisible by another integer m if m is a factor of n, so that dividing n by m leaves no remainder."

As an example for 50G below the RS-FEC, there are 2 FEC lanes so any divisor of 2 (1 or 2) is permissible as the number of input or output lanes.

Since divisor is a commonly used well-defined term, no further definition is required in the referenced text.

Cl 135 SC 135.5 P156 L 38 # 191

Nicholl, Gary Cisco Systems

Comment Type T Comment Status D bucket, <late>

The list starting on line 38 is missing the condition "Whether the PMA is adjacent to the FEC"

SuggestedRemedy

Update the list to include "Whether the PMA is adjacent to the FEC"

Proposed Response Response Status W

PROPOSED ACCEPT.

Late comment: This comment was submitted after the Task Force review closed.

Comment Type T Comment Status D bucket, <late>

Note LAUI-2 is missing from notes "a" and "b" in Figure 135-5.

SuggestedRemedy

Change "a If 50GAUI-n or 100GAUI-n immediately above this PMA" to "a If LAUI-2, 50GAUI-n or 100GAUI-n immediately above this PMA" and change "b If 50GAUI-n or 100GAUI-n immediately below this PMA or if this is the closest PMA to the PMD" to "b If LAUI-2, 50GAUI-n or 100GAUI-n immediately below this PMA or if this is the closest PMA to the PMD"

Proposed Response Status W

PROPOSED ACCEPT.

Late comment: This comment was submitted after the Task Force review closed.

Cl 135 SC 135.5.1 P157 L 50 # 193
Nicholl, Gary Cisco Systems

.....

Comment Type T Comment Status D bucket, <late>

Missing reference to LAUI-2

SuggestedRemedy

Change "If the interface between the sublayer below the PMA and the PMA is physically instantiated as 50GAUI-n or 100GAUI-n, the PMA....." to "If the interface between the sublayer below the PMA and the PMA is physically instantiated as LAUI-2, 50GAUI-n or 100GAUI-n, the PMA....."

Proposed Response Status W

PROPOSED ACCEPT.

Late comment: This comment was submitted after the Task Force review closed.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed Z/withdrawn SORT ORDER: Comment ID

Comment ID 193

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C/ 135 SC 135.5.2 P158 L11 # 195

Nicholl, Gary Cisco Systems

Comment Type E Comment Status D

bucket, <late> Comment Type E

C/ 135

Nicholl, Gary

omment Type E Comment Status D bucket, <late>

Cisco Systems

P 158

L 18

There are no PCLS below the FEC (or if they are then the number is 4 and not 2) so the text is somewhat confusing.

SuggestedRemedy

Change "The number of PCLS/FECLs z is 2 (below the FEC) and 4 (above the FEC) for 50GBASE-R interface and 4 for 100GBASE-P interfaces" to "The number of PCSLs/FECLs z is 2 FECLs (below the FEC) and 4 PCSLs (above the FEC) for 50GBASE-R interface and 4 FECLs (below the FEC) for 100GBASE-P interfaces"

Proposed Response

Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Late comment: This comment was submitted after the Task Force review closed.

From:

"The number of PCSLs/FECLs z is 2 (below the FEC) and 4 (above the FEC) for 50GBASE-R interfaces and 4 for 100GBASE-P interfaces."

To:

"The number of PCSLs/FECLs z is 2 FECLs (below the FEC) and 4 PCSLs (above the FEC) for 50GBASE-R interfaces and 4 FECLs for 100GBASE-P interfaces."

Cl 135 SC 135.5.2 P158 L12 # [196

Nicholl, Gary Cisco Systems

Comment Type T Comment Status D bucket, <late>

"The nominal bit rate Rlane of each PCSI /FFCI

is 25.78125 Gb/s for 50GBASE-R above the FEC and.." This is incorrect. The nominal bit rate for the 50GBASE-R PCS lane is 12.890625 Gb/s as described in Clause 133. There are also no FECLs above the FEC.

SuggestedRemedy

Change "The nominal bit rate Rlane of each PCSL/FECL is 25.78125 Gb/s for 50GBASE-R above the FEC and." to "The nominal bit rate Rlane of each PCSL is 12.890625 Gb/s for 50GBASE-R above the FEC and." This wording is still a bit cumbersome and could be improved further.

Proposed Response Status W

PROPOSED ACCEPT.

Late comment: This comment was submitted after the Task Force review closed.

The following sentence is a bit cumbersome "The Baud rate is equal to half of the bit rate when the number of physical lanes is 1 for 50GBASE-R or the number of physical lanes is 1 or 2 for 100GBASE-P (PAM4 symbols are sent or received on the lanes)"> This text, or similar, seems to be repeated several times in the clause.

SuggestedRemedy

Why not simply state that "the Baud rate is equal to half the bit rate when PAM4 encoding is implemented". It is already stated elsewhere (several times) that PAM4 encoding is used when "the number of physical lanes is 1 for 50GBASE-R or the number of physical lanes is 1 or 2 for 100GBASE-P". Too much repetition to quote a BBC radio 4 program!

Proposed Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

SC 135.5.2

Late comment: This comment was submitted after the Task Force review closed.

Relate the number of lanes and NRZ/PAM4 once then refer to NRZ and PAM4 thereafter.

CI 135 SC 135.5.2 P 158 L 33 # 198
Nicholl, Gary Cisco Systems

Comment Type T Comment Status D

bucket. <late>

197

"As the PCS (see Clause 133 and Clause 82) has fully flexible receive logic, an implementation is free to perform the mapping of PCSLs/FECLs from input lanes to output lanes without constraint" It is also a requirement that the FEC (Clause 91 and Clause 134) has flexible receive logic as well to make this satement true.

SuggestedRemedy

Include a reference to FEC (Clause 91 and 134).

Proposed Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Late comment: This comment was submitted after the Task Force review closed.

Change

"As the PCS (see Clause 133 and Clause 82) has fully flexible receive logic" To:

"As the PCS (see Clause 133 and Clause 82) and FEC (See Clause 91 and Clause 134) have fully flexible receive logic"

C/ 135 SC 135.5.2 P 159 L 9 # 199 Cisco Systems Nicholl, Gary bucket, <late> Comment Type Т Comment Status D Figure 135-6. The result of the equation "x+4/m" is incorrect. The correct answer should be x+1 and not 1. Same comment for equation x+4/n on line 27. SuggestedRemedy Replace "x+4/m=1" with "x+4/m=x+1" and replace "x+4/n=2" with "x+4/n=x+2" Proposed Response Response Status W PROPOSED ACCEPT.

C/ 135 SC 135.5.2 P159 L13 # 200

Late comment: This comment was submitted after the Task Force review closed.

Nicholl, Gary Cisco Systems

Comment Type **E** Comment Status **D** bucket, <late> Figure 135-6. Redundant set of muxes.

SuggestedRemedy

Delete the redundant set of muxes.

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.

Late comment: This comment was submitted after the Task Force review closed.

Remove the 4 demux stages immediately below the boxes with labels 0.3, 2.6, 1.3, and 3.5, respectively.

C/ 135 SC 135.5.3 P159 L41 # 201

Nicholl, Gary Cisco Systems

Comment Type T Comment Status D bucket, <late>
"The Skew (relative delay) between the PCSLs/FECLs must be kept within limits so that
the information on the lanes can be reassembled by the PCS" This statement also applies

to the FEC.

SuggestedRemedy

Change "The Skew (relative delay) between the PCSLs/FECLs must be kept within limits so that the information on the lanes can be reassembled by the PCS" to "The Skew (relative delay) between the PCSLs/FECLs must be kept within limits so that the information on the lanes can be reassembled by the PCS and FEC"

Proposed Response Status W PROPOSED ACCEPT.

Late comment: This comment was submitted after the Task Force review closed.

Comment Type T Comment Status D bucket, <late>

Remove the reference to PCSLs.

SuggestedRemedy

Change "while maintaining the bit order and position of PCSLs/FECLs on lanes sent in the receive direction towards the MAC." to "while maintaining the bit order and position of FECLs on lanes sent in the receive direction towards the MAC.

Proposed Response Response Status W

PROPOSED ACCEPT.

Late comment: This comment was submitted after the Task Force review closed.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed Z/withdrawn SORT ORDER: Comment ID

Comment ID 203

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Cl 135 SC 135.6 P 165 L 21 # 205

Nicholl, Gary Cisco Systems

Comment Type E Comment Status D bucket, <late>

There are no detailed descriptions provided for each of the MDIO variables in Table 135-2. Please see section 134.6 or 91.6 as examples.

SuggestedRemedy

Add a description for each of the MDIO variables in Table 135-2.

Proposed Response Status W

PROPOSED REJECT.

Late comment: This comment was submitted after the Task Force review closed.

Descriptions are provided in the referenced Clause 45 subclauses.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed Z/withdrawn SORT ORDER: Comment ID

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Comment ID 205