Cl **FM** *SC* **FM** *P* **11** *L* **45** # 16

Grow, Robert — RMG Consulting / KDPOF

Comment Type **E** *Comment Status* **A**

If there is a D2.3, hopefully it will be the last recirculation before SA ballot on this project. Though ouf of scope for this recirculation, some FM items could be updated now though because amendment 1 is approved and amdnements 2 through 5 are to be on the September RevCom agenda. (Only amendment 1 likely to be published prior to our SA ballot.)

SuggestedRemedy

Editor's Note -- delete or update note.
Amendment 2 -- is not consistent with P802.3cs/D3.4
Amendment 3-- "(PHY)" has been removed (it isn't an acronym for Physical Layer)
Amendment 6 -- The description in P802.3cx/D3.0 is different.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Comment is out of scope for this recirculation ballot,also, these changes are non-substantive not requiring recirculation. Nevertheless, implement suggested remedy.

Cl **1** *SC* **1.4.464** *P* **23** *L* **3** # 17

Grow, Robert — RMG Consulting / KDPOF

Comment Type **E** *Comment Status* **A**

Base text does not agree with IEEE Std 802.3-2022, or changes are not marked.

SuggestedRemedy

<sb> = strikethrough begin, <se> = strikethrough end, <ub> = underscore begin, <ue> = underscore end.

1.4.464 physical header data (PHD): <sb>Side<se><ub>An<ue> information block embedded inside a Transmit Block that is used to exchange control <ub>information <ue>and for negotiation of PCS and PMA parameters between two link partners. (See IEEE Std 802.3, Clause 115.)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Comment is out of scope for this recirculation ballot. Nevertheless, implement suggested remedy.

Cl **44** *SC* **44** *P* **27** *L* **1** # 24

Dawe, Piers — Nvidia

Comment Type **E** *Comment Status* **A**

network

SuggestedRemedy

Change to "networks". Check that the draft is aligned to the latest base documents.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Comment is out of scope for this recirculation ballot. Nevertheless, implement suggested remedy, that corrects a base text error. Base text has been reviewed with one additional change per Comment #18 correcting subclause errors.

Cl **44** *SC* **44.1.2** *P* **28** *L* **1** # 18

Grow, Robert — RMG Consulting / KDPOF

Comment Type **E** *Comment Status* **A**

Typo in forced subclause number. Relationship of 10 Gigabit Ethernet to the ISO OSI reference model is numbered 44.1.3 in IEEE Std 802.3-2022.

SuggestedRemedy

Change to 44.1.3, check this corrects the following subclause numbers. (The editorial instructions on the bottom of p. 29 appear to be correct, but not the corresponding subclause numbers.)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Comment is out of scope for this recirculation ballot. Nevertheless, implement suggested remedy.

Cl **45** *SC* **45.2.1.158a.1** *P* **33** *L* **22** # 21

Dawe, Piers — Nvidia

Comment Type **E** *Comment Status* **R**

"0b0000" is not normal notation in 802.3.

SuggestedRemedy

Change 0b0000 to 0000, 0b0001 to 0001, and so on

Response *Response Status* **C**

REJECT.
Comment is out of scope for this recirculation ballot.
The proposed change would introduce ambiguities.
Without identification of hexadecimal or binary or decimal, "10" is either binary to decimal 2, decimal 10 or hex to decimal 16.

Cl **78** *SC* **78.4.1** *P* **47** *L* **14** # 25

Wayne, Larsen CommScope

Comment Type **T** *Comment Status* **A**

In the present times of hightened concern of energy use, the Energy-Efficient Ethernet (EEE) should be supported by all cy PHYs, it should not be optional.

SuggestedRemedy

- from the title of 78.4.1 delete 'optionally'
- page 62 line 36 clause 166.1 delete 'that supports this capability'
- page 65 line 22 clause 166.1.4 from 'may optionally support' to 'supports' and from 'advertise' to 'advertises'
- page 144 line 12 clause 166.16.3 remove EEE from the PICS (since it will not be optional)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Comment is out of scope for this recirculation ballot. Automotive Ethernet, has a significantly different profile of usage than most Ethernet application areas. Automotive Ethernet is typically totally shut down when the vehicle isn't running, This is unlike a data center or enterprise application where infrastructure equipment is constantly powered on, but not always carrying traffic.
Moreover, the implementation of this comment would be against 802.3cz approved objectives.

However, a possible problem with the use of the term "deep sleep" has been identified.

The following changes are to be implemented:

Replace "from deep sleep" with "from a low power state" on page 115 line 9.

Replace "includes a BASE-AU PHY into deep sleep" with "includes a BASE-AU PHY into a low power state" on page 115 line 14.

Cl **105** *SC* **105.1.1** *P* **49** *L* **18** # 19

Grow, Robert RMG Consulting / KDPOF

Comment Type **E** *Comment Status* **A**

The changes were not implemented correctly.

SuggestedRemedy

25 Gigabit Ethernet uses the IEEE 802.3 MAC sublayer, connected through a 25 Gigabit Media Independent Interface (25GMII) to <us>one of a number of 25GBASE Physical Layer devices specified in this standard (see Table 105–2)<ue><sb>such as 25GBASE-CR, 25GBASE-CR-S, 25GBASE- KR, 25GBASE-KR-S, 25GBASE-SR, 25GBASE-T, 25GBASE-LR, and 25GBASE-ER<se>.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See response to Comment #6

Cl **105** *SC* **105.1.1** *P* **49** *L* **19** # 6

Zimmerman, George CME Consulting/APL Group, Cisco, Commscope, Mar

Comment Type **E** *Comment Status* **A**

The sentence as constructed doesn't seem to read right connected through...(25GMII) "to one of a number of 25 Gb/s, coupled with any IEEE 802.3 25GBASE Physical Layer devices specified in this standard (see Table 105–2)"…

SuggestedRemedy

Change "to one of a number of 25 Gb/s, coupled with IEEE 802.3 25GBASE Physical Layer devices" to "coupled to one of a number of 25 Gb/s IEEE 802.3 Physical Layer devices"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change to "25 Gigabit Ethernet uses the IEEE 802.3 MAC sublayer, connected through a 25 Gigabit Media Independent Interface (25GMII)<us> coupled to one of a number of 25GBASE Physical Layer devices specified in this standard (see Table 105–2)<ue><sb>such as 25GBASE-CR, 25GBASE-CR-S, 25GBASE- KR, 25GBASE-KR-S, 25GBASE-SR, 25GBASE-T, 25GBASE-LR, and 25GBASE-ER<se>."
See Comment #19

Cl **125** *SC* **125.1.4** *P* **57** *L* **3** # 20

Grow, Robert RMG Consulting / KDPOF

Comment Type **E** *Comment Status* **R**

The order of Table 125-1 and Table 125-2 appear to be alphanumeric after rate, but Table 125-3 is neither alphanumeric within rate nor is it illuminati order. It therefore looks like Clause 125 tables have an undocumented order.

SuggestedRemedy

Perhaps our iserts into tables should be rate/alphanumeric instead of where they are, optionally leave unchanged (this comment is out of scope).

Response *Response Status* **C**

REJECT.
Comment is out of scope for this recirculation ballot.

Cl **131** *SC* **131.4** *P* **61** *L* **34** # 22

Dawe, Piers — Nvidia

Comment Type **T** *Comment Status* **R**

This 11,264 BT delay for the whole PHY is the same as that for the 50GBASE-R PCS alone, without FEC, PMA or PMD. It seems too aggressive.

SuggestedRemedy

Review the delay limits, particularly at the higher speeds.

Response *Response Status* **C**

REJECT.
Comment is out of scope for this recirculation ballot.
See response to comment #248 to D2.0:
"Delay is specified 25GMII to 25GMII. It considers sum of delays for TX and RX sides of PCS, PMA and PMD sublayers, without including propagation delay of the fiber medium. 11264 bit times corresponds to 2.2x the time needed to transmit a RS-FEC code-word (544 RS symbols, 5440 bits). This upper bound limit has been specified with >25% margin considering actual implementation in a technology node qualified for automotive application."
The same response applies to 50GBASE-AU.

Cl **166** *SC* **166.1** *P* **62** *L* **27** # 7

Zimmerman, George — CME Consulting/APL Group, Cisco, Commscope, Mar

Comment Type **T** *Comment Status* **A**

"This clause specifies the operation between link partners implementing the same BASE-AU PHY type and rate in both link partners for each of the fibers used for unidirectional transmission."
Is this supposed to mean that the upstream rate and downstream rates are independent? If so, then it should say that. And, if that is the case, then it is not consistent with the reference model in Figure 166-1 which shows a single, bidirectional xMII. I cannot find the change that inserted this text in 166.1 (it seems to have moved from 166.1.4), so I cannot verify the intent.

SuggestedRemedy

Change "This clause specifies the operation between link partners implementing the same BASE-AU PHY type and rate in both link partners for each of the fibers used for unidirectional transmission." to "This clause specifies the operation between link partners implementing the same BASE-AU PHY type and rate in both link partners for each of the fibers used for unidirectional transmission, with the same rate in each direction."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The specifications of PCS, PMA and PMD in this clause do not preclude asymmetric rate in up and down streams. However, it was not intent to be uncompatible with Figure 166-1.

Change "This clause specifies the operation between link partners implementing the same BASE-AU PHY type and rate in both link partners for each of the fibers used for unidirectional transmission." to
"This clause specifies the operation between link partners implementing the same BASE-AU PHY type"

Cl **166** *SC* **166.1.1** *P* **63** *L* **19** # 9

Law, David — Hewlett Packard Enterprise

Comment Type **T** *Comment Status* **A**

Subclause 166.1.1 includes the text 'The notation used in the state diagrams in this clause follows the conventions in 21.5.'. Figure 166–22 'PCS 64B/65B receive state diagram, part by uses the '++' notation in the state RX_W and an RX_WE, however, this notation is not defined in subclause 21.5.

SuggestedRemedy

Suggest that text 'The notation ++ after a counter or integer variable indicates that its value is to be incremented.' be added to the end of the penultimate paragraph of subclause 166.1.1.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Comment is out of scope for this recirculation ballot. Nevertheless, implement suggested remedy.

Cl **166** *SC* **166.2.2.1.1** *P* **68** *L* **34** # 23

Dawe, Piers — Nvidia

Comment Type **E** *Comment Status* **A**

Table is hard to use because it spreeads over too many pages

SuggestedRemedy

Make the table full width and make the second column much wider, reducing the first, third and fourth columns. "Fit to contents" might do this well but it might try to wrap the field names, which should be avoided

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Comment is out of scope for this recirculation ballot.
Nevertheless, editor notes that table is full width, but will consider changes to column widths.

Cl **166** *SC* **166.2.2.5** *P* **75** *L* **33** # 1

Pérez-Aranda, Rubén — KDPOF

Comment Type **E** *Comment Status* **A**

Incorrect implementation of comment #39 to D2.1

SuggestedRemedy

Annex 166A provides partial listings of sequences produced by BASE- U binary scrambler shift register for G = 1 and G = 2

Response *Response Status* **C**

ACCEPT.

Cl **166** *SC* **166.2.2.6** *P* **75** *L* **33** # 8

Zimmerman, George — CME Consulting/APL Group, Cisco, Commscope, Mar

Comment Type **E** *Comment Status* **A**

please use nonbreaking spaces in "G = 1" and "G = 2".

SuggestedRemedy

use nonbreaking spaces in "G = 1" and "G = 2".

Response *Response Status* **C**

ACCEPT.

Cl **166** *SC* **166.2.3.7.2** *P* **91** *L* **35** # 10

Law, David — Hewlett Packard Enterprise

Comment Type **T** *Comment Status* **A**

Subclause 166.2.3.7.2 'Variables' defines the values of the sotxb_synch variable as 'OK: Transmit Block synchronization has been achieved.' and 'NOT_OK: Transmit Block synchronization has not been achieved.'. Figure 166–21 'PCS 64B/65B receive state diagram, part a', however, treats the variable sotxb_synch as a Boolean in the open arrow entry to the RX_INIT state in the equation ' pcs_reset + !sotxb_synch + !rx_xmii_enable'.

SuggestedRemedy

Either change the definition of sotxb_synch in subclause 166.2.3.7.2 to a Boolean, or change '... + !sotxb_synch + ...' in the open arrow entry to the RX_INIT state to read '... + (sotxb_synch = NOT_OK) + ...'

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Comment is out of scope for this recirculation ballot. Nevertheless, implement suggested remedy changing the open arrow entry to RX_INIT state in Figure 166-21 per sugested remedy.

Cl **166** *SC* **166.3.1** *P* **95** *L* **33** # 11

Law, David — Hewlett Packard Enterprise

Comment Type **E** *Comment Status* **A**

UTC' on the exit condition from the RX_WE state should be 'UCT' for 'unconditional transition', see IEEE Std 802.3-2022 figure 1-1.

SuggestedRemedy

Change 'UTC' on the exit condition from the RX_WE state to read 'UCT'.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Comment is out of scope for this recirculation ballot. Nevertheless, implement suggested remedy.

Cl **166** *SC* **166.3.4.2** *P* **98** *L* **6** # 12

Law, David — Hewlett Packard Enterprise

Comment Type **T** *Comment Status* **A**

The variable tx_xmii_enable is using in Figure 166-23 'PHY Tx control state diagram', however the variable tx_xmii_enable is not defined in subclause 166.3.4.1 'PHY control state variables'.

SuggestedRemedy

Add a definition for the variable tx_xmii_enable to subclause 166.3.4.1.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Comment is out of scope for this recirculation ballot. Nevertheless, add the following definition in 166.3.4.1:
"tx_xmii_enable. See 166.2.2.8.2"

Cl **166** *SC* **166.3.4.2** *P* **98** *L* **29** # 13

Law, David — Hewlett Packard Enterprise

Comment Type **E** *Comment Status* **A**

The second paragraph of subclause 166.3.4.2 says '... specified in 166.2.2 (state PMA_ENABLE_TX), so that the remote PHY ...', however the state in Figure 166–23 is called 'PMATX_ENABLE_TX'.

SuggestedRemedy

Suggest that '... specified in 166.2.2 (state PMA_ENABLE_TX), so that the remote PHY ...' should be changed to read '... specified in 166.2.2 (state PMATX_ENABLE_TX), so that the remote PHY ...'.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Comment is out of scope for this recirculation ballot. Nevertheless, implement suggested remedy.

Cl **166** *SC* **166.3.4.3** *P* **99** *L* **17** # 14

Law, David — Hewlett Packard Enterprise

Comment Type **T** *Comment Status* **A**

The variable sotxb_synch is used in Figure 166-24 'PHY Rx control state diagram' however the variable sotxb_synch is not defined in subclause 166.3.4.1 'PHY control state variables'.

SuggestedRemedy

Assuming this is the same as the sotxb_synch variable defined in subclause 166.2.3.7.2 'Variables' of the PCS 64B/65B receive state diagram parameters, suggest the following text should be added to subclause 166.3.4.1 'PHY control state variables':

sotxb_synch
See 166.2.3.7.2.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Comment is out of scope for this recirculation ballot. Nevertheless, add the following definition in 166.3.4.1:
"sotxb_synch. See 166.2.3.7.2"

Cl **166** *SC* **166.3.4.5** *P* **102** *L* **28** # 15

Law, David — Hewlett Packard Enterprise

Comment Type **T** *Comment Status* **A**

Strictly speaking, since subclause Subclause 166.1.1 says 'The notation used in the state diagrams in this clause follows the conventions in 21.5.', based on Table 21-1 'State diagram operators', the action in the state LOCHDR_EVAL_FAIL means assign hdr_fail_count Boolean OR 1 to hdr_fail_count.

SuggestedRemedy

Suggest that ' hdr_fail_count <= hdr_fail_count + 1' be changed to read 'hdr_fail_count++'

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Comment is out of scope for this recirculation ballot. Nevertheless, implement suggested remedy.

Cl **166** *SC* **166.6.3.4** *P* **119** *L* **41** # 3

Pérez-Aranda, Rubén KDPOF

Comment Type **T** *Comment Status* **A**

Power budget for 50GBASE-AU should be 5.4 dB, instead of 5.04 dB, according to resolution of comment #33 to D2.1

SuggestedRemedy

Change 5.04 with 5.4.

Response *Response Status* **C**

ACCEPT.

Cl **166** *SC* **166.6.3.4** *P* **119** *L* **51** # 4

Pérez-Aranda, Rubén KDPOF

Comment Type **E** *Comment Status* **A**

Reference to Table 166-7 is not correct and does not include cross link.Connection should be “connection insertion loss”.

SuggestedRemedy

Replace footnote with: “The channel insertion loss is calculated including aging using the maximum distance specified in Table 166–8, cabled optical fiber attenuation of 2 dB/km at 980 nm plus an allocation of 0.4 dB for cable attenuation penalty, and connection insertion loss given in 166.9.2.1.”

Response *Response Status* **C**

ACCEPT.

Cl **166** *SC* **166.7.8.2** *P* **126** *L* **38** # 2

Pérez-Aranda, Rubén KDPOF

Comment Type **T** *Comment Status* **A**

Incorrect implementation of comment #48 to D2.1

SuggestedRemedy

The BER calculation block calculates the BER from the equalized sequence s, the standard deviation sigma_nin, and the equalizer filter F(z) as specified in 166.7.8.2.2. Change figure 166-40 including F(z) arrow from reference equalizer block to BER calculation block.

Response *Response Status* **C**

ACCEPT.

Cl **166** *SC* **166.7.10.1** *P* **132** *L* **17** # 5

Pérez-Aranda, Rubén KDPOF

Comment Type **T** *Comment Status* **A**

Simulations indicate that the effect of the 1st order high pass filter used to filter the Gaussian random jitter is negligible. Implementation of this filter in test equipment may add extra complexity that is not desirable and is not worth.

SuggestedRemedy

Remove high pass filter used for filtering the random jitter generation. In page 132, line 17 and the block in figure 166-45.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Comment is out of scope for this recirculation ballot. Nevertheless, implement suggested remedy.