Cl **FM**	*SC* **FM**	*P* **10**	*L* **3**	# 822

Grow, Robert   RMG Consulting

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

This boxed paragraph is part of the published standard, so the self reference should be IEEE Std, not a project designation

SuggestedRemedy

Replace "P802.3cy" with "IEEE Std 802.3cy-202x"

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cy D2.1 and D2.21. Hence it is not within the scope of the recirculation ballot.

The commenter is encouraged to re-submit the comment for initial IEEE-SA ballot. If the commenter is not a member of the Standards Association ballot group for P802.3cy, the comments may be submitted as non-binding via the Chair's Standard Offer.

Cl **1**	*SC* **1.4.128a**	*P* **22**	*L* **7**	# 823

Grow, Robert   RMG Consulting

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

Grammar, "a" should have been deleted in editing out "network".

SuggestedRemedy

"...specification for 25 Gb/s Ethernet …"

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cy D2.1 and D2.21. Hence it is not within the scope of the recirculation ballot.

The commenter is encouraged to re-submit the comment for initial IEEE-SA ballot. If the commenter is not a member of the Standards Association ballot group for P802.3cy, the comments may be submitted as non-binding via the Chair's Standard Offer.

Cl **165**	*SC* **165.1**	*P* **36**	*L* **11**	# 824

Grow, Robert   RMG Consulting

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

PHY is not the acronym for Physical Layer, the cited sublayers are appropriately a Physical Layer device. (See Figure 165-1.)

SuggestedRemedy

25GBASE-T1 Physical Layer device (PHY)

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cy D2.1 and D2.21. Hence it is not within the scope of the recirculation ballot.

The commenter is encouraged to re-submit the comment for initial IEEE-SA ballot. If the commenter is not a member of the Standards Association ballot group for P802.3cy, the comments may be submitted as non-binding via the Chair's Standard Offer.

Cl **165**	*SC* **165.1.3.1**	*P* **38**	*L* **35**	# 813

Dawe, Piers   Nvidia

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

tx_group130x65B - as it's 65 bits, lower case b would avoid ambiguity

SuggestedRemedy

Change tx_group130x65B to tx_group130x65b (6 instances)

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cy D2.1 and D2.21. Hence it is not within the scope of the recirculation ballot.

CRG disagrees with commenter. The nomenclature is consistent with nomenclature used throughout 802.3, where 65B denotes a 65 bit block in the PCS encoding. IEEE Std 802.3 uses 64B/66B and 64B/65B as the nomenclature for this, where "B" indicates bits. Changing to lower case would break the intended association with the 64B/65B encoding. Clause 149 uses similar variable names for the same thing, and deviation would suggest something different.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general *Cl* **165** Page 1 of 6
COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn *SC* **165.1.3.1** 10/12/2022 12:44:17 PM
SORT ORDER: Clause, Subclause, page, line

Cl **165**   *SC* **165.1.3.1**   *P* **38**   *L* **48**   *#* 821

Dawe, Piers   Nvidia

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

"In the training mode (see 165.4.2.4), the PCS transmits and receives PAM2 training frames to synchronize to the PHY frame..." but "PHY frame" is not defined.

SuggestedRemedy

Change to "synchronize to the PHY frame..." to "synchronize to the RS-FEC superframes that follow, ..."

Proposed Response   *Response Status* **W**

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cy D2.1 and D2.21. Hence it is not within the scope of the recirculation ballot.

The commenter is encouraged to re-submit the comment for initial IEEE-SA ballot. If the commenter is not a member of the Standards Association ballot group for P802.3cy, the comments may be submitted as non-binding via the Chair's Standard Offer.

Cl **165**   *SC* **165.2.2.2**   *P* **45**   *L* **3**   *#* 825

Grow, Robert   RMG Consulting

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

The defined terms master PHY and slave PHY are lower case in 1.4.389 and 1.4.535 definitions. This amendment should follow that precident. Reconsider if MASTER and SLAVE should be all caps.

SuggestedRemedy

Change MASTER PHY and SLAVE PHY to master PHY and SLAVE PHY throughout. (Pages 45, 63, 65, 81, 91, 97, 117.)

Proposed Response   *Response Status* **W**

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cy D2.1 and D2.21. Hence it is not within the scope of the recirculation ballot.

CRG disagrees with commenter. While the lower case "master PHY" and "slave PHY" are used occasionally in IEEE Std 802.3-2022, the vast majority of references, including those in similar places in the BASE-T and BASE-T1 clauses since 1000BASE-T are all upper case.

Cl **165**   *SC* **165.2.2.4.3**   *P* **46**   *L* **26**   *#* 819

Dawe, Piers   Nvidia

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

This says that the effect of receipt of this primitive, PMA_UNITDATA.indication(rx_symb), is unspecified. That's not correct.

SuggestedRemedy

Change "is unspecified" to "is specified in 165.3.2.3.1".

Proposed Response   *Response Status* **W**

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cy D2.1 and D2.21. Hence it is not within the scope of the recirculation ballot.

CRG disagrees with the commenter. While the PMA_UNITDATA.indication primitive transfers a value that is used, the effect of receipt of the primitive itself is unspecified. This is consistent with the specification in IEEE Std 802.3 PHY clauses, including Clauses 23, 32, 36, 40, 55, 96, 97, 113, 126, and 149 in IEEE Std 802.3-2022 (among others). Clause 101 is an exception where the primitive has a slightly different function, conveying both a value and initiating or terminating a burst transmission.

Cl **165**   *SC* **165.3.2.2.16**   *P* **57**   *L* **34**   *#* 810

Dawe, Piers   Nvidia

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

pL,33

SuggestedRemedy

pL,89 ?

Proposed Response   *Response Status* **W**

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cy D2.1 and D2.21. Hence it is not within the scope of the recirculation ballot.

The commenter is encouraged to re-submit the comment for initial IEEE-SA ballot. If the commenter is not a member of the Standards Association ballot group for P802.3cy, the comments may be submitted as non-binding via the Chair's Standard Offer.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **165**   Page 2 of 6
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **165.3.2.2.16**   10/12/2022 12:44:17 PM
SORT ORDER: Clause, Subclause, page, line

Cl **165** *SC* **165.3.2.2.16** *P* **58** *L* **3** # 811

Dawe, Piers   Nvidia

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

#1 #2 #L

SuggestedRemedy

1 2 L (as in other figures, e.g. 65B block, 165B block 2 ...)

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cy D2.1 and D2.21. Hence it is not within the scope of the recirculation ballot.

CRG disagrees with commenter. Figure and style is consistent with similar interleaver diagrams in IEEE Std 802.3-2022. See, e.g., Figure 149-9.

Cl **165** *SC* **165.3.2.2.17** *P* **58** *L* **27** # 815

Dawe, Piers   Nvidia

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

Galois Field

SuggestedRemedy

Galois field

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cy D2.1 and D2.21. Hence it is not within the scope of the recirculation ballot.

CRG disagrees with commenter. Both Galois Field (GF) and Galois field (GF) are in use. In IEEE Std 802.3-2022, ONLY clauses 101 and 115 uses "Galois field". Clauses 65, 76, 91, 97, 108, 113, 115, 119, and 149 use Galois Field.

Cl **165** *SC* **165.3.2.2.17** *P* **58** *L* **39** # 812

Dawe, Piers   Nvidia

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

Need to define all the items in the equation (except well-known functions and operators, and j here which is just a counter). Also, "alpha is a primitive element of the finite field defined by the primitive polynomial 0x409 = $x^{10} + x^3 + 1$" is too vague; it's not clear if it means that alpha is defined by 0x409 (how), or that the finite field is defined by 0x409, or that alpha is 0x409, or what.

SuggestedRemedy

Add: "In this subclause, x is the indeterminate variable."
Change "In Equation (165-1), alpha is a primitive element of the finite field defined by the primitive polynomial 0x409 = $x^{10} + x^3 + 1$."
to an unambiguous definition, e.g.
"In Equation (165-1), alpha, a primitive element of the finite Galois field GF(2^{10}), is the primitive polynomial 0x409 = $x^{10} + x^3 + 1$."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cy D2.1 and D2.21. Hence it is not within the scope of the recirculation ballot.

CRG disagrees with Commenter. Commenter is incorrect. The standard is not intended as a tutorial on Reed Solomon coding. An individual familiar with RS coding would understand the specification as written, unambiguously. The suggested remedy (specifically that alpha is the primitive polynomial, rather than a primitive element) is incorrect.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general *Cl* **165** Page 3 of 6
COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn *SC* **165.3.2.2.17** 10/12/2022 12:44:17 PM
SORT ORDER: Clause, Subclause, page, line

Cl **165** *SC* **165.3.2.2.17** *P* **58** *L* **49** # 809

Dawe, Piers   Nvidia

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

This says "mi,0 is the first bit transmitted" while on the next page "c935 = m845 is transmitted first". Seems contradictory.

SuggestedRemedy

Maybe this means: For each 10-bit message symbol mi, mi,0 is the first bit transmitted. Similarly for pi,0 on the next page.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cy D2.1 and D2.21. Hence it is not within the scope of the recirculation ballot.

CRG disagrees with Commenter, since the Commenter is incorrect. m325 is m(i=325, j = 0 to 9). The first statement says that m (i, 0) is the first bit transmitted. The second statement says that i=845 is the first value of i that is sent. So, m(i=845,j=0) is the first bit transmitted. Similarly for p_i

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Cl **165** *SC* **165.3.2.2.17** *P* **59** *L* **34** # 814

Dawe, Piers   Nvidia

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

GF add and GF multiply are not defined, although one can guess that GF means Galois field. Unfortunately, other clauses have used these terms without defining them, so we can't just point elsewhere in 802.3.

SuggestedRemedy

Please define or give a reference for Galois field addition and Galois field multiplication.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cy D2.1 and D2.21. Hence it is not within the scope of the recirculation ballot.

CRG disagrees with commenter. See page 58 line 27, "Galois Field GF(2^10)' defines the field, and the relevant polynomials for the code are defined. This is sufficient to unambiguously define the operations.

Cl **165** *SC* **165.3.2.2.17** *P* **59** *L* **54** # 808

Dawe, Piers   Nvidia

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

Unfortunate page break splitting so many columns in the table.

SuggestedRemedy

Increase the orphan rows setting so the table stays on one page

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cy D2.1 and D2.21. Hence it is not within the scope of the recirculation ballot.

The commenter is encouraged to re-submit the comment for initial IEEE-SA ballot. If the commenter is not a member of the Standards Association ballot group for P802.3cy, the comments may be submitted as non-binding via the Chair's Standard Offer.

Cl **165** *SC* **165.3.2.3.1** *P* **63** *L* **1** # 807

Dawe, Piers   Nvidia

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

"It obtains block lock to the PHY frames during PAM2 training using synchronization bits provided in the training frames" but "PHY frame" is not defined. As we are in training, there will be training frames present.

SuggestedRemedy

Change "PHY frames" to "training frames"

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cy D2.1 and D2.21. Hence it is not within the scope of the recirculation ballot.

The commenter is encouraged to re-submit the comment for initial IEEE-SA ballot. If the commenter is not a member of the Standards Association ballot group for P802.3cy, the comments may be submitted as non-binding via the Chair's Standard Offer. Suggest deleting this sentence altogether, since the concept is already covered in 165.3.5

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 U/unsatisfied Z/withdrawn
SORT ORDER: Clause, Subclause, page, line

Cl **165**
SC **165.3.2.3.1**

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10/12/2022 12:44:17 PM

Cl **165**   *SC* **165.3.7.3**   *P* **68**   *L* **21**   # 817

Dawe, Piers   Nvidia

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

Following D2.1 comment 785, there are three more 65B blocks to be changed to 64B/5B blocks.
Names can be more consistent.
Also, "65B RS-FEC" is a confusing name, as the FEC doesn't really operate on 65-bit blocks but on a 9360-bit payload, and 165.3.2.2.17 says "the particular Reed-Solomon code is denoted as RS-FEC(936,846)". There are two "64B/65B RS-FEC", three "65B RS-FEC frame" and 4 other "65B RS-FEC"

SuggestedRemedy

Change "65B transmitted blocks" to "64B/65B transmit(ted) blocks", "65B transmit block" to "64B/65B transmit(ted) block", "65B received blocks" to "64B/65B received blocks".
Here, "65B RS-FEC" can be changed to "RS-FEC".
Change the three "65B RS-FEC frame" to "RS-FEC frame"
Rename the remaining "65B RS-FEC" e.g. to RS-FEC(936,846).
With editorial licence.

Proposed Response   *Response Status* **W**

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cy D2.1 and D2.21. Hence it is not within the scope of the recirculation ballot.

The commenter is encouraged to re-submit the comment for initial IEEE-SA ballot. If the commenter is not a member of the Standards Association ballot group for P802.3cy, the comments may be submitted as non-binding via the Chair's Standard Offer.

Cl **165**   *SC* **165.4**   *P* **73**   *L* **16**   # 816

Dawe, Piers   Nvidia

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

802.3 specs define the sublayers in top-to-bottom order. Compare Clause 149, for example.

SuggestedRemedy

Swap 165.5 PMA electrical specifications and 165.4 Physical Medium Attachment (PMA) sublayer

Proposed Response   *Response Status* **Z**

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

This comment does not apply to the substantive changes between IEEE P802.3cy D2.1 and D2.21. Hence it is not within the scope of the recirculation ballot.

CRG disagrees with Commenter. See Clauses 40, 55, 97, 113, 126, and 149 in IEEE Std 802.3-200 for examples. PMA electrical specifications come AFTER the PMA specification.

Cl **165**   *SC* **165.4.2.4.10**   *P* **79**   *L* **43**   # 818

Dawe, Piers   Nvidia

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

After cleaning up "Partial PHY frame count" (D2.1 comment 786), the draft uses "partial frame" 27 times and "partial PHY frame" three times

SuggestedRemedy

Change the three remaining "partial PHY frame" to "partial frame"

Proposed Response   *Response Status* **W**

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cy D2.1 and D2.21. Hence it is not within the scope of the recirculation ballot.

The commenter is encouraged to re-submit the comment for initial IEEE-SA ballot. If the commenter is not a member of the Standards Association ballot group for P802.3cy, the comments may be submitted as non-binding via the Chair's Standard Offer. Please consider listing specific locations where changes are needed.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **165**   Page 5 of 6
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **165.4.2.4.10**   10/12/2022 12:44:17 PM
SORT ORDER: Clause, Subclause, page, line

Cl **165** *SC* **165.5.2** *P* **93** *L* **25** # 820

Dawe, Piers   Nvidia

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

Do the wavy lines across the connectors represent other pairs in a multilane PHY as in Figure 136-2, or provision for other "alien crosstalk" signals in a bigger connector? 165.8.1 says "2-pin connector with a shield". Figure 136-2 shows Signal_i shield and Link shield. Also, the diagonal line and "25GBASE-T1" don't help. The figure title says it's 25GBASE-T1, pointers usually have arrowheads, and words such as "cable" or "bulk cable" would better represent the two signal lines.

SuggestedRemedy

Delete the wavy lines, "25GBASE-T1" and diagonal line. Add the shield.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cy D2.1 and D2.21. Hence it is not within the scope of the recirculation ballot.

The commenter is encouraged to re-submit the comment for initial IEEE-SA ballot. If the commenter is not a member of the Standards Association ballot group for P802.3cy, the comments may be submitted as non-binding via the Chair's Standard Offer.

Cl **165** *SC* **165.5.3.3** *P* **95** *L* **6** # 804

Dawe, Piers   Nvidia

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

In the explanation "this is equivalent...", "at least" should be deleted following the change to make the bandwidth at line 5 a value rather than a one-sided limit.

SuggestedRemedy

Delete "at least"

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cy D2.1 and D2.21. Hence it is not within the scope of the recirculation ballot.

The commenter is encouraged to re-submit the comment for initial IEEE-SA ballot. If the commenter is not a member of the Standards Association ballot group for P802.3cy, the comments may be submitted as non-binding via the Chair's Standard Offer.

Cl **165** *SC* **165.11.4.2.5** *P* **118** *L* **10** # 806

Dawe, Piers   Nvidia

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

PICS uses "frame" twice and "PHY frame" 4 times. The normative material it refers to in 165.3.6.1 uses "RS-FEC frame" 10 times or more, "frame" once.

SuggestedRemedy

Here, change all "frame" and "PHY frame" to "RS-FEC frame". In 165.3.6.1, change "four frames after" to "four RS-FEC frames after".

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cy D2.1 and D2.21. Hence it is not within the scope of the recirculation ballot.

The commenter is encouraged to re-submit the comment for initial IEEE-SA ballot. If the commenter is not a member of the Standards Association ballot group for P802.3cy, the comments may be submitted as non-binding via the Chair's Standard Offer. Commenter should provide specific references rather than 'all "frame" and "PHY frame" to "RS-FEC frame"'. There are instances in the text where "frame" refers to a training frame, and therefore not an RS-FEC frame.

Cl **165** *SC* **165.11.4.5** *P* **128** *L* **28** # 805

Dawe, Piers   Nvidia

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

Maximum link delay in PICS is out of date

SuggestedRemedy

Change 94 to 60

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cy D2.1 and D2.21. Hence it is not within the scope of the recirculation ballot.

The commenter is encouraged to re-submit the comment for initial IEEE-SA ballot. If the commenter is not a member of the Standards Association ballot group for P802.3cy, the comments may be submitted as non-binding via the Chair's Standard Offer.

Note that this issue is only associated with the PICS comment field synchronization and the technical content of the draft is correct as is.

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 U/unsatisfied Z/withdrawn
SORT ORDER: Clause, Subclause, page, line

Cl **165**
SC **165.11.4.5**

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