Cl **FM** *SC* **FM** *P* **1** *L* **33** # R1-20

Grow, Robert RMG Consulting

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

*** Comment submitted with the file image.png attached ***

You missed updating the copyright year here.

SuggestedRemedy

Change 2022 to 2023. (Could be a FrameMaker variable problem.).

Response *Response Status* **C**

ACCEPT.

Cl **1** *SC* **1.4.407** *P* **22** *L* **15** # R1-9

Zimmerman, George Cisco Systems, Inc.,CME Consulting,CommScope,M

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

Clause 149 is now in the draft, so the external reference should be an active cross reference

SuggestedRemedy

Replace the external reference to clause 149 with an active cross reference to Clause 149

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.244.1** *P* **26** *L* **34** # R1-7

Zimmerman, George Cisco Systems, Inc.,CME Consulting,CommScope,M

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

45.2.1.244 is only about MultiGBASE-T1, so there is no need to call that out in the text, which reads very awkward and suggests the bits apply to other than MultiGBASE-T1. I am probably the source of the original text, so I apologize for the churn, but seeing how it finally ended up made me question the need... this occurs multiple times, this is the first instance.

SuggestedRemedy

delete "for MultiGBASE-T1" at P26 L34, P26 L35, P26 L52, P26 L53, P27 L34, P27 L44, P27 L51.

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.87.2** *P* **28** *L* **20** # R1-8

Zimmerman, George Cisco Systems, Inc.,CME Consulting,CommScope,M

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

hi_rfer is actually defined in 149.3.7.2.2 (which is in the draft). 149.3.8.1 is a reference to the variable, but the definition is in the state diagram variables…

SuggestedRemedy

replace external reference to 149.3.8.1 with cross-reference to 149.3.7.2.2

Response *Response Status* **C**

ACCEPT.

Cl **78** *SC* **78.1** *P* **29** *L* **15** # R1-10

Zimmerman, George Cisco Systems, Inc.,CME Consulting,CommScope,M

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

No other entry to table 78-1 has a section referenced - only the clause. AND the header on the table says "Clause" not "Section" or "Subclause"

SuggestedRemedy

Delete "and 165.3.8" from Clause entry in Table 78-1 on P29 L15

Response *Response Status* **C**

ACCEPT.

Cl **105** *SC* **105.5** *P* **35** *L* **30** # R1-11

Zimmerman, George Cisco Systems, Inc.,CME Consulting,CommScope,M

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

Editing instruction has been modified to be "Change" although the row is inserted, there are other things shown (including that the row is multiple rows in other places) so the extra clarity would help in the editing instruction (for example, the footnotes are unchanged)

SuggestedRemedy

Underline the new text in the table (25GBASE-T1 row & rows….)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Changed editing instructions to read "Insert a row in Table 105-3 (as modified by IEEE Std 802.3cz-202x) for 25GBASE-T1 after 25GBASE-T (unchanged rows not shown)". No underline for the new text is then needed.

Cl **149B** *SC* **149B** *P* **132** *L* **14** # R1-19

Zimmerman, George Cisco Systems, Inc.,CME Consulting,CommScope,M

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

Clause 149 is now in the draft, so the external reference should be an active cross reference

SuggestedRemedy

Replace the external reference to clause 149 with an active cross reference to Clause 149

Response *Response Status* **C**

ACCEPT.

Cl **165** *SC* **165** *P* **38** *L* **1** # R1-6

Zimmerman, George Cisco Systems, Inc.,CME Consulting,CommScope,M

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

The preceding page with clause 149 is numbered page 36. This page is page 38. Is there a page 37? It looks like a numbering error…

SuggestedRemedy

Renumber pages so that clause 149 and 165 are continuously numbered without a gap.

Response *Response Status* **C**

ACCEPT.

Cl **165** *SC* **165.1.3.1** *P* **40** *L* **30** # R1-13

Zimmerman, George Cisco Systems, Inc.,CME Consulting,CommScope,M

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

when we changed "data octets" to "octets" it was incorrect. There is also control information on the 25GMII interface, and only "data octets" are on TXD<31:0>. The 25GMII also contains control information on TXC<3:0>, so I would expect these are counted as part of the "25GMII octets"....

SuggestedRemedy

reverse change - change "25GMII octets" to "25GMII data octets"

Response *Response Status* **C**

ACCEPT.

Cl **165** *SC* **165.2** *P* **38** *L* **35** # R1-12

Zimmerman, George Cisco Systems, Inc.,CME Consulting,CommScope,M

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

parallel language - "The PHY sublayers… are specified in this clause… Auto-Negotiation… is defined in Clause 98". These are really the same thing, both should be defined or specified…

SuggestedRemedy

change "are specified" to "are defined"

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **165** *SC* **165.3.2** *P* **43** *L* **42** # R1-14

Zimmerman, George Cisco Systems, Inc.,CME Consulting,CommScope,M

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

This is now the first reference to PFC24. It needs to be expanded, and probably referenced to where it is better described. Clarity is improved if the expansion for PFC24 is also left where it is more fully described in 165.3.5.

SuggestedRemedy

Change "PFC24" to "partial frame count (PFC24, see 165.3.5).
Leave the expansion in 165.3.5…

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Changed per suggested remedy but on pdf page 51 and not 43.

Cl **165** *SC* **165.3.2** *P* **53** *L* **10** # R1-22

Zimmerman, George Cisco Systems, Inc.,CME Consulting,CommScope,M

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

The PFC24 entry in Table 165-1 for L=2 should be 8, not 5, I think...

SuggestedRemedy

Change entry for PFC24 in the L=2 row to 8.

Response *Response Status* **C**

ACCEPT.

Cl **165** *SC* **165.3.2.2.17** *P* **61** *L* **16** # R1-15

Zimmerman, George Cisco Systems, Inc.,CME Consulting,CommScope,M

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

There are 846 message symbols, not 522, so m_845 should NOT have been changed to m_521. Note that 845 also agrees with equation 165-2.

SuggestedRemedy

reverse change - change "message symbols m_521 to m_0" to "message symbols m_845 to m_0"

Response *Response Status* **C**

ACCEPT.

Cl **165** *SC* **165.3.3** *P* **96** *L* **33** # R1-18

Zimmerman, George Cisco Systems, Inc.,CME Consulting,CommScope,M

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

"less than 0.4 ps when measured with bandwidth from 1 MHz to 100 MHz, and less than 0.8 ps when measured with bandwidth from 10 kHz to 1 MHz." seems to indicate that the measurement bandwidth may vary. What is meant is "over the bandwidth" and it isn't a spot value, it's an integrated value.
Same issue in 165.5.3.1.1 at line 52

SuggestedRemedy

change "less than 0.4 ps when measured with bandwidth from 1 MHz to 100 MHz, and less than 0.8 ps when measured with bandwidth from 10 kHz to 1 MHz." to
"less than 0.4 ps when measured over the bandwidth from 1 MHz to 100 MHz (integrated), and less than 0.8 ps when measured over the bandwidth from 10 kHz to 1 MHz (integrated)."
(change 2x once at P96 L33, once at P96 L52)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Changed per suggested remedy, but the comment is against 165.5.3.3, not 165.3.3

Cl **165** *SC* **165.5.1.1** *P* **94** *L* **23** # R1-17

Zimmerman, George Cisco Systems, Inc.,CME Consulting,CommScope,M

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

Figure 165-25 shows coax cables attached to a transmitter, but WHERE…. The important thing is that the coax cables access the balanced pair at the MDI, not somewhere before or after…

SuggestedRemedy

add vertical dotted line labeled MDI at the junction of the "Transmitter under test" box and the coax cables in Figure 165-25

Response *Response Status* **C**

ACCEPT.

Cl **165** *SC* **165.5.2** *P* **95** *L* **11** # R1-16

Zimmerman, George Cisco Systems, Inc.,CME Consulting,CommScope,M

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

I realize this is out of scope, but Figure 165-27 shows a PMD transmit function and PMD receive function. Clause 165 does not have a PMD. It has a PMA.

SuggestedRemedy

Change PMD transmit function and PMD receive function to PMA transmit function and PMA receive function in Figure 165-27.

Response *Response Status* **C**

ACCEPT.

Cl **165** *SC* **165.7.1.3.2** *P* **105** *L* **1** # R1-5

Zimmerman, George Cisco Systems, Inc.,CME Consulting,CommScope,M

Comment Type **ER** *Comment Status* **A**

*** Comment submitted with the file 8023-165_etm_rem_d3p1_separated.pdf;8023-165_etm_rem_d3p1_separated_r1.pdf attached ***

The explanation of the two metrics are confused by the fact that they are explained in an intertwined manner, which causes lack of clarity in variable naming and in making it look as though REM computes a vector, whereas it only computes a single number, and removes clarity on the iteration of ETM. (NOTE - comment label ETM1)

SuggestedRemedy

Replace 165.7.1.3.2 through 165.7.1.3.6 (page 104 line 53 though page 108 line 13) with file 8023-165-etm_rem_3p1_separated_r1.pdf dated 24 February 2023 on the upper part of the page. (note, a previous version was uploaded, without the "r1" - please discard - this new one fixes errors found after initial submission but before ballot close)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Changed per suggested remedy based on the contribution: https://grouper.ieee.org/groups/802/3/cy/comments/8023-165_etm_rem_d3p1_separated_r1.pdf, with editorial license.

Cl **165** *SC* **165.7.1.3.2** *P* **105** *L* **1** # R1-2

Zimmerman, George Cisco Systems, Inc.,CME Consulting,CommScope,M

Comment Type **ER** *Comment Status* **A**

The new time-domain echo metrics and their algorithms require additional explanation. Additionally, the existing text of the second sentence of the paragraph is quite awkward. Suggested rewrites are based on the descriptions of the algorithms given in https://www.ieee802.org/3/cy/public/adhoc/zimmerman_3cy_01_02_14_23.pdf. (note, the proposed new text should be transparent to the proposed change in comment labeled ETM1, and the new subclause would go before that text, just as it goes before the existing text).

SuggestedRemedy

Insert a new subclause prior to 165.7.1.3.2 with the following content.
"The following subclauses define additional metrics and requirements to limit the characteristics of the echo from the link segment. There are two separate, but similar requirements, called the "residual echo metric" (REM) and the "echo tail metric" (ETM) which are fundamentally time domain metrics. The specified algorithms derive the time-domain responses from complex-valued frequency domain measurements for improved sensitivity. In both metrics, the resulting echo impulse response is divided into segments of length Nseg, and the energy in each segment is computed. Following that, the two metrics differ, both in their assumptions and specification.
In the first metric, REM, a number (Ndiscard) of the highest-energy segments of the impulse response are discarded, and the total echo energy from the remaining segments is computed and compared to the requirement.
The second metric, ETM, is designed to characterize the behavior of the lower level reflections excluding the cabling connectors and major discontinuities. In ETM, the round-trip delay of the link segment is estimated first, and any echo beyond a single round-trip reflection is discarded from the tail of the impulse response. Then, an iterative calculation is performed, discarding the initial segments from the initial m_s segments to a value m_e segments. Additionally, for each iteration, the remaining total echo energy is computed, as ETM(m), after discarding the remaining Ndiscard_etm highest-energy segments from the tail of the impulse response excluding the m initial segments. These values of ETM(m) are then compared to a limit line for values of m from m_s to m_e. It should be noted that the algorithms, particularly the ETM algorithm, were developed with the physical properties of automotive cabling in mind and are potentially unsuitable beyond the intended application."

Response *Response Status* **C**

ACCEPT.

Cl **165** *SC* **165.7.1.3.3** *P* **106** *L* **1** # R1-3

Zimmerman, George Cisco Systems, Inc.,CME Consulting,CommScope,M

Comment Type **TR** *Comment Status* **A**

The index of the right hand side of equation 165-24 is incorrect. It should be 2K_N - k , not K_N - k

SuggestedRemedy

Change Equation 165-24 to read H_k = conj (H_"2K_N - k") where "_" indicates subscript, and the "" delimiters indicate that the entire term is the subscript

Response *Response Status* **C**

ACCEPT.

Cl **165** *SC* **165.7.1.3.3** *P* **106** *L* **6** # R1-4

Zimmerman, George Cisco Systems, Inc.,CME Consulting,CommScope,M

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

Equation 165-25 shouldn't be its own equation - it is part of 165-24.

SuggestedRemedy

Reformat so that 165-25 is part of 165-24.

Response *Response Status* **C**

ACCEPT.

Cl **165** *SC* **165.7.1.3.4** *P* **107** *L* **29** # R1-21

Sedarat, Hossein Ethernovia

Comment Type **TR** *Comment Status* **A**

In equation (165-34), the limits for 'n' need to be scaled by Nseg to convert segment numbers to sample numbers

SuggestedRemedy

first line: change 'n < m' to 'n < m*N_seg'
second line: change 'm <= n < Le' to 'm*N_seg <= n < Le*N_seg'
third line: change 'Le <= n' to 'Le*N_seg <= n'

Response *Response Status* **C**

ACCEPT.

Cl **165** *SC* **165.7.1.3.6** *P* **107** *L* **10** # R1-1

Zimmerman, George Cisco Systems, Inc.,CME Consulting,CommScope,M

Comment Type **TR** *Comment Status* **A**

The function ETM(m) is a strictly decreasing function of m. Therefore, if the limit is not exceeded for m < m_e, it will never exceed the value at m=m_e for m>m_e. The second line of equation 165-36 is unneeded. NOTE - this change is included in comment ETM1, and if ETM1 is accepted, this comment can be considered accepted in principle by adopting the proposed text there.

SuggestedRemedy

Change m_e<=m<m_e to m_e<=m<=m_e on the first line of equation 165-36, and delete the second line (REM_limit - 16 (for) m_e <= m) Reformat the right hand side of the inequality without braces, since there is now only one entry

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Implemented changes per contribution https://grouper.ieee.org/groups/802/3/cy/comments/8023-165_etm_rem_d3p1_separated_r1.pdf, addressing the proposed changes.