

P802.3dm D2.2 Asymmetrical Electrical Automotive Ethernet 2nd Working Group recirculation ballot comr

Cl **FM** SC **FM** P **15** L **24** # **43**  
 Simms, William NVIDIA  
 Comment Type **E** Comment Status **X**  
 Are both dj and dm Amendment 13? The Introduction describes this document as 'IEEE Std 802.3dm-20xx Amendment 13', but the title page of D2.2 gives 'Amendment 14'. The same paragraph also lists 'IEEE Std 802.3dj-20xx Amendment 13', so two amendments are numbered 13.  
**SuggestedRemedy**  
 Make the amendment number in the Introduction agree with the title page and with the number assigned to 802.3dj and/or dm  
 Proposed Response Response Status **O**

Cl **45** SC **45.2.1.16.aaab** P **42** L **36** # **33**  
 Simms, William NVIDIA  
 Comment Type **E** Comment Status **X**  
 Typo: In Table 45-19, bit 1.18.10 is described as '1 = PMA/PMD is able to perform MultiG+100M/100M+MultiGBASE-V1 ability' and '0 = PMA/PMD is able to perform MultiG+100M/100M+MultiGBASE-T1'  
**SuggestedRemedy**  
 Either use ability for either state or remove ability from state 1  
 Proposed Response Response Status **O**

Cl **45** SC **45.2.1.60f.1** P **43** L **5** # **23**  
 Lo, William Axonne Inc.  
 Comment Type **E** Comment Status **X**  
 Font mismatch  
**SuggestedRemedy**  
 Fix the fonts  
 Proposed Response Response Status **O**

Cl **45** SC **45.2.1.244.1** P **47** L **8** # **38**  
 Simms, William NVIDIA  
 Comment Type **T** Comment Status **X**  
 45.2.1.244.1 and 45.2.1.245.1 cite the interleave Infocfield as 191.5.2.4.5 and 191.5.2.5.4. 191.5.2.4.5 is the HS\_PATH PHY capability field, and Table 191-7 shows that it carries only VendorSpecificData, Reserved and OAMen. InterleaverDepth appears only in Table 191-8, the LS\_PATH field specified in 191.5.2.5.4, which is also the only subclause cited for PrecodSel by 45.2.1.244.2 and 45.2.1.244.4. The reference to 191.5.2.4.5 therefore points at a field that does not contain the interleave setting.  
**SuggestedRemedy**  
 Delete 191.5.2.4.5 from 45.2.1.244.1 and 45.2.1.245.1, leaving 191.5.2.5.4 as the Clause 191 reference.  
 Proposed Response Response Status **O**

Cl **45** SC **45.2.1.250a** P **48** L **26** # **35**  
 Simms, William NVIDIA  
 Comment Type **E** Comment Status **X**  
 Typo: Missing spaces in the Description column of the table for 7.5Gb/s. 5 Gb/s, and 2.5Gb/s  
**SuggestedRemedy**  
 Insert a space before 'Gb/s' in the Description column of bits 1.2318.6, 1.2318.5 and 1.2318.4.  
 Proposed Response Response Status **O**

Cl **45** SC **45.2.1.250c** P **51** L **1** # **34**  
 Simms, William NVIDIA  
 Comment Type **E** Comment Status **X**  
 Register 1.2320 is named 'link partner rate negotiation' and Table 45-212ac is captioned to match, but every bit in it is a link partner ability bit and the table is a bit-for-bit mirror of Table 45-212aa, the rate ability register. The negotiation register is 1.2319 and has a different structure. The present name invites a reader to look for negotiation results in 1.2320.  
**SuggestedRemedy**  
 Rename register 1.2320 and Table 45-212ac to 'MultiGBASE-A PMA link partner rate ability', and update 45.2.1.250c and its subclauses.  
 Proposed Response Response Status **O**

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**Cl 45**    **SC 45.2.3**    **P 53**    **L 20**    # **3**

Wienckowski, Natalie    IVN Solutions LLC; Ethernovia, Bosch

**Comment Type**    **T**    **Comment Status**    **X**

Registers 3.2322, 3.2323, and 2.2325 are not OAM registers.

**SuggestedRemedy**

Remove footnote "b" from these and replace with footnote "c". Add footnote c to read: This register applies to MultiGBASE-T1, 100M+MultiGBASE (-T1 and -V1), MultiG+100MBASE (-T1 and -V1), MultiGBASE-AT1, and MultiGBASE-AV1 PHYs.

**Proposed Response**    **Response Status**    **O**

**Cl 98**    **SC 98.2.1.1.4**    **P 63**    **L 2**    # **36**

Simms, William    NVIDIA

**Comment Type**    **E**    **Comment Status**    **X**

Typo: missing 'the' in 'shall be within range of 0.5V...

**SuggestedRemedy**

Change 'within range of' to 'within the range of' in 98.2.1.1.4 and in rows DME10 and DME11 of the Clause 98 PICS.

**Proposed Response**    **Response Status**    **O**

**Cl 191**    **SC 191.1.3**    **P 72**    **L 7**    # **4**

Ran, Adeo    Cisco Systems

**Comment Type**    **T**    **Comment Status**    **X**

"normal operation" is described here as "not in a diagnostic test mode". Test modes 5 and 7 descriptions include "Normal operation", and test mode 5 is followed by "(normal operation)" in 191.6.2.7 and 191.7.2.7, and the PICS also include "normal operation". These are apparently diagnostic modes (traffic cannot be sent), so there is some contradiction.

**SuggestedRemedy**

Either add "(other than test modes 5 or 7)" or change the definition in some other way. Alternatively, delete the indications of "normal operation" of the test modes in the indicated places.

**Proposed Response**    **Response Status**    **O**

**Cl 191**    **SC 191.1.3**    **P 72**    **L 11**    # **5**

Ran, Adeo    Cisco Systems

**Comment Type**    **E**    **Comment Status**    **X**

The new inserted "normal operation" paragraph separates the NOTE from the paragraph it is about (which uses the terms Leader and Follower).

**SuggestedRemedy**

Move the NOTE above the "normal operation" paragraph.

**Proposed Response**    **Response Status**    **O**

**Cl 191**    **SC 191.1.3**    **P 73**    **L 10**    # **20**

Tan, Yuxuan    Motorcomm

**Comment Type**    **E**    **Comment Status**    **X**

In Figure 191-35 -- Link Monitor state diagram, the value of pcs\_data\_mode is used to set the variable link\_status. However, in Figure 191-3 -- PHY\_S functional block diagram, pcs\_data\_mode is only passed to HS\_TX PCS TRANSMIT, and not to LINK MONITOR.

**SuggestedRemedy**

Add an arrow to show the transfer of pcs\_data\_mode from PHY CONTROL to LINK MONITOR.

**Proposed Response**    **Response Status**    **O**

**Cl 191**    **SC 191.1.3**    **P 74**    **L 10**    # **21**

Tan, Yuxuan    Motorcomm

**Comment Type**    **E**    **Comment Status**    **X**

In Figure 191-35 -- Link Monitor state diagram, the value of pcs\_data\_mode is used to set the variable link\_status. However, in Figure 191-4 -- PHY\_D functional block diagram, pcs\_data\_mode is only passed to LS\_TX PCS TRANSMIT, and not to LINK MONITOR.

**SuggestedRemedy**

Add an arrow to show the transfer of pcs\_data\_mode from PHY CONTROL to LINK MONITOR.

**Proposed Response**    **Response Status**    **O**

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Cl 191 SC 191.1.3.2 P75 L27 # 45

Wang, Frank Realtek Semiconductor Corp.

Comment Type E Comment Status X

For consistency with other IEEE 802.3 clauses, the symbol size should be omitted from within the parentheses.

SuggestedRemedy

Change "RS-FEC(50,46,6)" to "RS-FEC(50,46)".

Proposed Response Response Status O

Cl 191 SC 191.3.2.2 P89 L38 # 44

Wang, Frank Realtek Semiconductor Corp.

Comment Type E Comment Status X

Formatting

SuggestedRemedy

Turn off italics for the right bracket of "(5.625 x S)".

Proposed Response Response Status O

Cl 191 SC 191.4.2.2.15 P117 L1 # 6

Ran, Adeo Cisco Systems

Comment Type E Comment Status X

"The CRC-6, shown by Equation (191-7), is the remainder of the division of the payload polynomial by the generator polynomial"

Equation 191-7 shows the polynomial, not the CRC-6.

SuggestedRemedy

Change to

"The CRC-6, is the remainder of the division of the payload polynomial by the generator polynomial g(x) defined by Equation (191-7)".

Proposed Response Response Status O

Cl 191 SC 191.4.2.2.15 P117 L12 # 7

Ran, Adeo Cisco Systems

Comment Type T Comment Status X

The new figure show that the CRC generator is fed by zeros when the switch is in "CRCout" position, but it is not clear when it is set to this position and for how long. The switch positions are discussed in 191.5.2.4.7 and in 192.4.2.4.9, but these are different generators.

SuggestedRemedy

Add the rules for setting the switch position, similarly to the text in 191.5.2.4.7 and 192.4.2.4.9.

Proposed Response Response Status O

Cl 191 SC 191.5.2.4.4 P126 L19 # 37

Simms, William NVIDIA

Comment Type E Comment Status X

The sentence 'When loc\_rcvr\_status = OK the Infocfield variable is set to loc\_rcvr\_status<5> = 1 and set to 0 otherwise' conflates the state variable with the Infocfield bit that carries it, and sets a variable to an assignment. The same sentence appears in 191.5.2.5.3 on page 129 and in 192.4.2.4 on page 256.

SuggestedRemedy

Reword as: 'The Infocfield bit loc\_rcvr\_status<5> shall be set to 1 when loc\_rcvr\_status = OK, and to 0 otherwise.' Apply the same change in all three places.

Proposed Response Response Status O

Cl 191 SC 191.5.2.6 P130 L26 # 8

Ran, Adeo Cisco Systems

Comment Type E Comment Status X

"The follower sets timing\_lock\_OK to one when it has a stable transmit clock; otherwise, timing\_lock\_OK is set to zero. The setting of the timing\_lock\_OK value is implementation specific."

The first sentence defined the setting explicitly, so it can't be implementation specific.

SuggestedRemedy

Change to

"The follower sets timing\_lock\_OK to one when it has a stable transmit clock; otherwise, timing\_lock\_OK is set to zero. The definition of a stable transmit clock is implementation specific."

Proposed Response Response Status O

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CI 191 SC 191.5.2.6 P 130 L 40 # 39

Simms, William

NVIDIA

Comment Type T Comment Status X

In Table 191-9 the PHY\_S (Leader) entry for 'Entry to SILENT state until en\_follower\_tx = 1 is transmitted' is given as an equation '20 - 0.384' in a column headed 'Maximum time (ms)'. Every other cell in the table states a single number. A reader has to evaluate the expression to get the limit, and it is not clear whether the intent is a subtraction or a range. Taking it as 19.616 ms makes the column total 50.000 ms exactly, which suggests subtraction was meant rather than expressing a range of 20 to 0.384

SuggestedRemedy

Replace '20 - 0.384' with the value 19.616, and if the relationship to the 0.384 ms COUNTDOWN interval is worth recording, state it in a note to the table.

Proposed Response Response Status O

CI 191 SC 191.5.2.6.1 P 131 L 20 # 9

Ran, Adeo

Cisco Systems

Comment Type E Comment Status X

The font size of the text in this subclause is too small

SuggestedRemedy

Format as normal text.

Proposed Response Response Status O

CI 191 SC 191.6.2.5 P 149 L 42 # 32

Simms, William

NVIDIA

Comment Type E Comment Status X

Annex 191B is normative, but it is invoked here with 'describes an additional High Pass Filter to be applied', which does not require anything. 'High Pass Filter' is also capitalised mid-sentence and is unhyphenated, where the annex itself writes 'high-pass filter'.

SuggestedRemedy

Reword as: 'When the DUT includes a low-frequency high-pass network, for example PoC or PoDL, the high-pass filter specified in Annex 191B shall be applied to the measured data.'

Proposed Response Response Status O

CI 191 SC 191.7.2.7 P 157 L 29 # 25

Schreiner, Stephan

Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type E Comment Status X

Unit of PSD is "dBm/Hz", but the "Z" should not be capital EQ: 191-15, 191-16

SuggestedRemedy

Change unit to "dBm/Hz"

Proposed Response Response Status O

CI 191 SC 191.9.1 P 160 L 31 # 24

Schreiner, Stephan

Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type E Comment Status X

Text says: ...insertion loss of each -T1 link...and I think the word "each" doesn't make sense at this position. This wording is also part of 191.9.1.3; 191.9.1.4; 191.9.1.5, 191.10.1.1; 191.10.1.3; 191.10.1.5

SuggestedRemedy

Replace "each" with "a"

Proposed Response Response Status O

CI 191 SC 191.9.1.1 P 160 L 43 # 10

Ran, Adeo

Cisco Systems

Comment Type E Comment Status X

Fmax in equation 191-18 has MHz units, but in other places it is used as a number:  
In P160 L38:  $3 \leq f \leq F_{\max}$  (if is "in MHz")  
In 191.9.1.6 and 191.10.1.6: "Fmax MHz" (units added after a number)  
In Equations 191-23 and 191-24:  $400 \leq f \leq F_{\max}$   
191.15.4.4 LSTC5: "Fmax MHz"

Also in 191.9.1.5 Fmax appears with "MHz" but in the referenced 149.7.1.5 it appears as "Fmax MHz".

See section 15.4 of style manual "Equations shall be dimensionally correct".  
Based on the majority of instances, it is suggested to keep Fmax as a number.

SuggestedRemedy

Change Equation 191-18 to define Fmax as a number (without MHz), and in 191.9.1.5 delete "MHz".

Proposed Response Response Status O

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

CI 191

SC 191.9.1.1

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|                                                                                                                                                                                                                           |              |                   |      |      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------|------|------|
| CI 191                                                                                                                                                                                                                    | SC 191.9.1.1 | P 160             | L 47 | # 11 |
| Ran, Adeo                                                                                                                                                                                                                 |              | Cisco Systems     |      |      |
| Comment Type                                                                                                                                                                                                              | E            | Comment Status    | X    |      |
| "The Insertion loss is illustrated in Figure 191–52"                                                                                                                                                                      |              |                   |      |      |
| Figure 191-52 illustrates the limit of the insertion loss, not an actual insertion loss.                                                                                                                                  |              |                   |      |      |
| Also, No Need To Capitalize insertion loss.                                                                                                                                                                               |              |                   |      |      |
| Similarly for return loss (192.9.1.3), insertion loss (191.10.1.1), return loss (191.10.1.3), screening attenuation (192.10.1.5), PSANEXT (191.10.2.1), PSAACRF (191.10.2.2), MDI return loss (191.11.2.1 and 191.12.2.1) |              |                   |      |      |
| SuggestedRemedy                                                                                                                                                                                                           |              |                   |      |      |
| Change to "The insertion loss limit is illustrated in Figure 191–52" and change the caption of Figure 191–52 accordingly.                                                                                                 |              |                   |      |      |
| Change similarly in the other indicated places, including capitalization and corresponding figure captions.                                                                                                               |              |                   |      |      |
| Proposed Response                                                                                                                                                                                                         |              | Response Status O |      |      |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |                |      |      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------|------|------|
| CI 191                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SC 191.14 | P 169          | L 34 | # 12 |
| Ran, Adeo                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           | Cisco Systems  |      |      |
| Comment Type                                                                                                                                                                                                                                                                                                                                                                                                                                               | T         | Comment Status | X    |      |
| As indicated in comment 77 against D2.1, normative delay constraints cannot be stated for the HS_PATH or for the LS_PATH, because they comprise different parts from possibly different vendors as well as the transmission cable. A single vendor cannot claim compliance to an integrated system specification.                                                                                                                                          |           |                |      |      |
| Delay constraints for the MAC Control PAUSE operation are required to bound the roundtrip delay. The way to limit it for a single device is to specify the maximum sum of the transmit end receive delay. Transmit and receive delays could be limited individually but this is not required for PAUSE.                                                                                                                                                    |           |                |      |      |
| The sum of transmit and receive delay may seem more difficult to measure in an asymmetric PHY, but may be still possible to measure it with specialized test setups. Also, a vendor can claim compliance by design without actual measurement.                                                                                                                                                                                                             |           |                |      |      |
| The limit should be generous to enable multiple implementations. Products can always do better than the limit.                                                                                                                                                                                                                                                                                                                                             |           |                |      |      |
| The suggested remedy is provided following an email exchange on this topic, based on dividing the roundtrip delay calculated from Table 191-25 by 2 (i.e., divided evenly between PHY_D and PHY_S), and rounding to an integer number of ns. If the task force prefers an uneven allocation (as in Table 192-27), or larger values to enable implementations in flight to comply, I would be fine with that too.                                           |           |                |      |      |
| Note that the media delay is assumed to be negligible for these PHYs and need not be mentioned.                                                                                                                                                                                                                                                                                                                                                            |           |                |      |      |
| Annex 191A should be kept informative, and not recommend allocation between Tx and Rx delays, which is an implementation choice that does not affect interoperability or the functionality of the PAUSE operation. This is subject of another comment.                                                                                                                                                                                                     |           |                |      |      |
| SuggestedRemedy                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |                |      |      |
| Replace the text from the second paragraph to the end of 191.14 with the following text (based on 149.10):                                                                                                                                                                                                                                                                                                                                                 |           |                |      |      |
| "The sum of the transmit and receive data delays for an implementation of a PHY_S or PHY_D shall not exceed the limits shown in Table 191–25. Transmit data delay is defined from the input of a given unit of data at the XGMII to the presentation of the same unit of data by the PHY to the MDI. Receive data delay is defined from the input of a given unit of data at the MDI to the presentation of the same unit of data by the PHY to the XGMII. |           |                |      |      |
| NOTE—the methods by which this requirement is verified are beyond the scope of this standard."                                                                                                                                                                                                                                                                                                                                                             |           |                |      |      |
| Annex 191A provides information about the composition of transmit and receive delays.                                                                                                                                                                                                                                                                                                                                                                      |           |                |      |      |
| Change the content of Table 191-25 to the following:                                                                                                                                                                                                                                                                                                                                                                                                       |           |                |      |      |

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HS\_PATH data rate | Interleave | Maximum delay (ns)

2.5 Gb/s | 1x | 4608

5 Gb/s | 1x | 3584

5 Gb/s | 2x | 3943

10 Gb/s | 1x | 3072

10 Gb/s | 2x | 3252

10 Gb/s | 4x | 3584

In PICS item DC1, change "Feature" from "Path delays" to "Sum of transmit and receive delays".

Proposed Response Response Status ☐

Cl 191 SC 191.14 P 169 L 34 # 13

Ran, Adeo Cisco Systems

Comment Type E Comment Status X

The paragraph starts with "in full duplex mode" - but the PHYs defined in this clause only use full duplex - it is not a mode, and there's no need to mention it.  
(The text originates from earlier clauses which had both half duplex and full duplex specifications, and the rationale for delays was different for each mode; see 24.6 as an example).

SuggestedRemedy

Change the first paragraph to: "Predictable operation of the MAC Control PAUSE operation (Clause 31, Annex 31B) demands that there be an upper bound on the propagation delays through the network."

Proposed Response Response Status ☐

Cl 191 SC 191.15.3 P 172 L 6 # 40

Simms, William NVIDIA

Comment Type T Comment Status X

\*2.5G, \*5G and \*10G are each status O with no group, so an implementation may claim none of them and still be presented as conforming, although it would then support no data rate.

SuggestedRemedy

Give the rate options a status that requires at least one to be claimed, for example O/n on a common group.

Proposed Response Response Status ☐

Cl 191 SC 191.15.3 P 172 L 25 # 41

Simms, William NVIDIA

Comment Type E Comment Status X

The item labels \*Lead and \*Follow are mixed case, where every other item in the table is upper case (\*AN, \*INS, \*MDIO, \*OAM, \*PHY\_S, \*T1, \*V1).

SuggestedRemedy

Change \*Lead to \*LEAD and \*Follow to \*FOLLOW

Proposed Response Response Status ☐

Cl 191 SC 191.15.4.1.1 P 174 L 22 # 42

Simms, William NVIDIA

Comment Type T Comment Status X

PCT16 cites Figure 149-9 for the round-robin interleaving scheme, in a PICS table for Clause 191, and PCT9 likewise cites Table 149-2. If Clause 191 reuses those figures it should say so in the body; if it defines its own, the PICS should cite the Clause 191 figure. I don't see round-robin defined.

SuggestedRemedy

Cite the Clause 191 figure and table, or add an explicit statement in 191.3.2.2 that the Clause 149 figures apply. Define round-robin testing

Proposed Response Response Status ☐

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 191

SC 191.15.4.1.1

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CI 191A SC 191A P 322 L 9 # 19

Ran, Adeel

Cisco Systems

Comment Type T Comment Status X

As noted in another comment, the normative specification of delay constraints should be met by each device separately as a sum of Tx+Rx. There is no need to specify each component separately.

This annex seems to provide details about the composition of the roundtrip delay, which is good for informative annex, but it also includes recommendations, which are not necessary for interoperability or functionality of PAUSE. The recommended allocation is not required for time synchronization support, and the recommendation to "maintain low variance" is beyond the scope of the standard (similar to a recommendation to maintain low power - it is a product choice).

**SuggestedRemedy**

Change the annex title to "Components of roundtrip delay in asymmetrical PHYs".  
Change the first paragraph to "In 191.14, constraints are specified for sum of the transmit and receive data delays for predictable operation of the MAC Control PAUSE operation".  
Change "The HS\_PATH delay of 191.14" to "The HS\_PATH delay" and similarly for the LS\_PATH.  
Delete the two last paragraphs (from "Besides the MAC Control" to the end).  
Change the format of the figure title to make it Figure 191A-1.

Make any other required changes to keep this annex informative.

Proposed Response Response Status O

CI 191B SC 191B.3 P 326 L 13 # 30

Simms, William

NVIDIA

Comment Type E Comment Status X

The annex calls 191.6.2.5 'the transmitter distortion test', but 191.6.2.5 is titled 'Transmitter linearity'.

**SuggestedRemedy**

Refer to the subclause by its title, as the transmitter linearity test specified in 191.6.2.5.

Proposed Response Response Status O

CI 191B SC 191B.3 P 326 L 14 # 28

Simms, William

NVIDIA

Comment Type T Comment Status X

The annex is scoped to the test in 191.6.2.5, which is the HS\_PATH (PHY\_S) transmitter. The PHY\_D transmitter SNDR test in 191.7.2.6 sits behind the same MDI and the same PoC or PoDL network, and so is subject to the same baseline wander, but is not covered.

**SuggestedRemedy**

Extend the applicability of the annex to 191.7.2.6 if as described

Proposed Response Response Status O

CI 191B SC 191B.3 P 326 L 22 # 29

Simms, William

NVIDIA

Comment Type E Comment Status X

The SNDR expression that follows this sentence is not a numbered equation, and the quantities in it are not defined at the point of use. The same expression is given as a numbered equation where the test itself is specified.

**SuggestedRemedy**

Number the equation, define each quantity in it, or delete it and cross-reference the numbered equation in the body of the standard.

Proposed Response Response Status O

CI 191B SC 191B.3 P 326 L 29 # 27

Simms, William

NVIDIA

Comment Type T Comment Status X

The annex refers the linear-fit pulse-response estimation to 120D.3.1.6, but 191.6.2.5 defines the test by reference to 120D.3.1.2 and 191.7.2.6 defines it by reference to 85.8.3.3.5. Three different base-standard procedures are cited for the measurement this annex modifies, so it is not clear which one the filter is inserted into.

**SuggestedRemedy**

Cite the same subclause the modified test cites, and state explicitly at which point in that procedure the HPF is applied.

Proposed Response Response Status O

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CI 191B SC 191B.6 P 327 L 1 # 26

Simms, William

NVIDIA

Comment Type T Comment Status X

Gl.6 b) requires  $N_p = 300$  for the linear-fit estimation.  $N_p$  sets the length of pulse response the linear fit can model, so changing it changes the measured SNDR on its own, independently of the high-pass filter this annex is about. 191.6.2.5, the test the annex modifies, states no  $N_p$  and inherits it from 120D.3.1.6, while 191.7.2.6 fixes  $N_p = 100$ . The amendment therefore ends up with two SNDR tests using different fit windows, and the limits of 36 dB, 33 dB and 30 dB in 191.6.2.5 are left unchanged although the measurement that produces the number has been altered. I can find no basis for the value 300 in the public record: the supporting presentation (sakuna\_etal\_3dm\_01a\_0526) reports its measurements at  $N_p = 100$  and does not derive a replacement, the proposed annex text (Proposed\_Annex\_191B.pdf in the 0726 folder) states the value without justification, and the July 2026 minutes record no discussion of it.

**SuggestedRemedy**

Delete Gl.6 b), or state the basis for  $N_p = 300$  and the SNDR limits that go with it, so that the limit and the measurement that produces it are specified together. If a longer fit window is genuinely needed to separate baseline wander from transmitter distortion, it should be applied to the test in 191.6.2.5 for all cases rather than only when a PoC or PoDL network is fitted.

Proposed Response Response Status O

CI 191B SC 191B.8.2.4 P 329 L 10 # 31

Simms, William

NVIDIA

Comment Type E Comment Status X

The heading of Gl.8.2.4 ends 'High-Pass Network', singular, while the annex title and Gl.8 and Gl.8.1 all use 'High-Pass Networks'.

**SuggestedRemedy**

Make the heading consistent with the annex title. "High-Pass Networks"

Proposed Response Response Status O

CI 192 SC 192.1.1 P 193 L 4 # 14

Ran, Adeo

Cisco Systems

Comment Type E Comment Status X

The notations  $N_r$ ,  $N_p$ ,  $N_z$  appear numerous times in this clause. These names are mentioned in this nomenclature subclause, but the actual values are only listed in 192.3.4.1, and being among the last instances of these names it is very difficult to find them. This makes reading and understanding the specification difficult for the uninformed reader.

**SuggestedRemedy**

Add "(see 192.3.4.1)" in the descriptions of  $N_r$ ,  $N_p$ , and  $N_z$ .

Proposed Response Response Status O

CI 192 SC 192.1.3 P 195 L 12 # 22

Tan, Yuxuan

Motorcomm

Comment Type E Comment Status X

In Figure 192-33 -- Link Monitor state diagram, the value of `pcs_data_mode` is used to set the variable `link_status`. However, in Figure 192-2 -- Functional block diagram, `pcs_data_mode` is only passed to PCS TRANSMIT, and not to LINK MONITOR.

**SuggestedRemedy**

Add an arrow to show the transfer of `pcs_data_mode` from PHY CONTROL to LINK MONITOR.

Proposed Response Response Status O

CI 192 SC 192.1.3.2 P 196 L 2 # 46

Wang, Frank

Realtek Semiconductor Corp.

Comment Type E Comment Status X

For consistency with other IEEE 802.3 clauses, the symbol size should be omitted from within the parentheses.

**SuggestedRemedy**

Change "RS-FEC(130,124,8)" to "RS-FEC(130,124)".

Proposed Response Response Status O

P802.3dm D2.2 Asymmetrical Electrical Automotive Ethernet 2nd Working Group recirculation ballot comr

CI 192 SC 192.1.4 P 197 L 45 # 47  
Wang, Frank Realtek Semiconductor Corp.  
Comment Type E Comment Status X  
The "Z symbols" appears for the first time here without reference.  
SuggestedRemedy  
Change "Z symbols" to "Z symbols (see 192.5.2.4)".  
Proposed Response Response Status O

CI 192 SC 192.2.1.8.1 P 204 L 38 # 48  
Wang, Frank Realtek Semiconductor Corp.  
Comment Type T Comment Status X  
Since the implementation of the XGMII is optional, I would suggest rewriting the text as in 126.2.2.11.1.  
SuggestedRemedy  
Change lines 40~42:  
TRUE PHY is in state PCS\_Data (see Figure 192-32).  
FALSE PHY is not in state PCS\_Data (see Figure 192-32).  
Proposed Response Response Status O

CI 192 SC 192.3.2.1 P 206 L 36 # 49  
Wang, Frank Realtek Semiconductor Corp.  
Comment Type E Comment Status X  
Missing period.  
SuggestedRemedy  
Change "(see 192.3.5.1.2)" to "(see 192.3.5.1.2)."  
Proposed Response Response Status O

CI 192 SC 192.3.2.2.3 P 211 L 6 # 50  
Wang, Frank Realtek Semiconductor Corp.  
Comment Type E Comment Status X  
The index of character should be subscript.  
SuggestedRemedy  
Line 6: change D0 and D7 to D<sub>0</sub> and D<sub>7</sub>, respectively.  
Line 7: change C0, C7, O0, and O4 to C<sub>0</sub>, C<sub>7</sub>, O<sub>0</sub>, and O<sub>4</sub>, respectively.  
Line 8: change S0 and S4 to S<sub>0</sub> and S<sub>4</sub>, respectively.  
Line 9: change T0 and T7 to T<sub>0</sub> and T<sub>7</sub>, respectively.  
Proposed Response Response Status O

CI 192 SC 192.3.2.2.4 P 211 L 31 # 51  
Wang, Frank Realtek Semiconductor Corp.  
Comment Type E Comment Status X  
To be consistent with Figure 192-7.  
SuggestedRemedy  
Line 31: change "Input data" to "Input Data".  
Line 34: change "input data" to "Input Data".  
Line 39: change "Input data field" to "Input Data column".  
Proposed Response Response Status O

CI 192 SC 192.3.2.2.4 P 211 L 38 # 52  
Wang, Frank Realtek Semiconductor Corp.  
Comment Type E Comment Status X  
To be consistent with the previous clauses.  
SuggestedRemedy  
Change "start" to "Start" and change "terminate" to "Terminate".  
Proposed Response Response Status O

P802.3dm D2.2 Asymmetrical Electrical Automotive Ethernet 2nd Working Group recirculation ballot comr

CI 192 SC 192.3.2.2.13 P 215 L 46 # 53  
Wang, Frank Realtek Semiconductor Corp.  
Comment Type E Comment Status X  
Missing period.  
SuggestedRemedy  
Add a period to the end of line 46.  
Proposed Response Response Status O

CI 192 SC 192.3.2.2.16 P 219 L 18 # 54  
Wang, Frank Realtek Semiconductor Corp.  
Comment Type E Comment Status X  
TF<sub>n is not defined yet.  
SuggestedRemedy  
Insert a sentence, "TF<sub>n is the training frame bit sequence as defined in 192.3.4.2",  
before "Bit DS<sub>n[0] is produced using the scrambler defined in 192.3.2.2.18."  
Proposed Response Response Status O

CI 192 SC 192.3.2.3 P 225 L 50 # 55  
Wang, Frank Realtek Semiconductor Corp.  
Comment Type T Comment Status X  
The selections to the mux/demux are not complete.  
SuggestedRemedy  
Change "10 Gb/s \* (tx\_mode = SEND\_N)" to "bit rate \* (tx\_mode = SEND\_N)".  
Proposed Response Response Status O

CI 192 SC 192.3.2.3.1 P 226 L 32 # 56  
Wang, Frank Realtek Semiconductor Corp.  
Comment Type E Comment Status X  
7.5 Gb/s is for HS PATH only.  
SuggestedRemedy  
Change "see Figure 192–12 for LS\_RX or Figure 192–13 for HS\_RX" to "see Figure 192–13  
and Figure 192–14"  
Proposed Response Response Status O

CI 192 SC 192.3.4 P 229 L 2 # 57  
Wang, Frank Realtek Semiconductor Corp.  
Comment Type E Comment Status X  
Formatting  
SuggestedRemedy  
Line 2: turn off italics for the right bracket of (N<sub>z).  
Line 14: turn off italics for the right bracket of (N<sub>z).  
Proposed Response Response Status O

CI 192 SC 192.3.4 P 230 L 43 # 58  
Wang, Frank Realtek Semiconductor Corp.  
Comment Type E Comment Status X  
The right-side arrow to the refresh header of LS burst structure may need adjustment.  
SuggestedRemedy  
As comment.  
Proposed Response Response Status O

P802.3dm D2.2 Asymmetrical Electrical Automotive Ethernet 2nd Working Group recirculation ballot comr

CI 192 SC 192.3.4.1 P 231 L 22 # 59  
Wang, Frank Realtek Semiconductor Corp.  
Comment Type E Comment Status X  
Formatting  
SuggestedRemedy  
Apply italic formatting to N<sub>r, N<sub>p, and N<sub>z.  
Proposed Response Response Status O

CI 192 SC 192.3.4.3 P 233 L 21 # 60  
Wang, Frank Realtek Semiconductor Corp.  
Comment Type T Comment Status X  
Refine (192-14).  
SuggestedRemedy  
See attachment for (192-14) updates: equation\_192\_14.  
Proposed Response Response Status O

CI 192 SC 192.4.2.4.5 P 259 L 6 # 2  
Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi, S  
Comment Type E Comment Status X  
The minimum baseline rates are implemented as duplicate shalls.  
SuggestedRemedy  
Change ""shall be supported" to "are supported (see Table 192-1)" at P259 L6.  
Proposed Response Response Status O

CI 192 SC 192.9.2.1 P 290 L 19 # 15  
Ran, Adeo Cisco Systems  
Comment Type E Comment Status X  
Fmax in Equations 192-33 and 192-34 has MHz units but should be a number, see similar comment against 191.9.1.1.  
SuggestedRemedy  
Change Equations 192-33 and 192-34 to define Fmax as a number (without MHz), and in 192.7.1.5 delete "MHz".  
Proposed Response Response Status O

CI 192 SC 192.12 P 293 L 40 # 16  
Ran, Adeo Cisco Systems  
Comment Type E Comment Status X  
"In full duplex mode, predictable operation of the MAC Control PAUSE operation (see Clause 31 and Annex 31B) also demands that <...>"  
The phrasing of this paragraph seems to be taken from clause 149, but this text originates from earlier clauses - initially 24.6. The "also" refers to full-duplex (vs. half-duplex, which is not defined for this clause), and the other statements in this paragraph (network planners and administrators, concatenation of devices) are irrelevant and obsolete.  
The corresponding paragraph in 191.14 is shorter and sufficient. Note that another comment suggests deleting the mention of "full duplex mode".  
SuggestedRemedy  
Change the first paragraph to: "Predictable operation of the MAC Control PAUSE operation (Clause 31, Annex 31B) demands that there be an upper bound on the propagation delays through the network."  
Proposed Response Response Status O

|                                                                                                                                                                                                                                                                                                                    |           |                   |     |      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------------|-----|------|
| CI 192                                                                                                                                                                                                                                                                                                             | SC 192.12 | P 294             | L 2 | # 17 |
| Ran, Adeo                                                                                                                                                                                                                                                                                                          |           | Cisco Systems     |     |      |
| Comment Type                                                                                                                                                                                                                                                                                                       | T         | Comment Status    | X   |      |
| Following my comment 77 against D2.2 the text was changed from "The sum of" to "The combined", and from "Transmit data delay is measured" to "Transmit data delay is estimated", and similarly for receive data delay. These changes were not requested in the comment and unfortunately create additional issues. |           |                   |     |      |
| "sum" is well-defined, but "combined" can be interpreted in several ways (it might be the maximum of the two? the average?) so the new text introduces ambiguity to the requirement                                                                                                                                |           |                   |     |      |
| The standard indeed does not require measurement, but it certainly should not require anyone to estimate anything; estimation is by definition ambiguous. The standard just needs to define what each delay means so that the requirements are unambiguous.                                                        |           |                   |     |      |
| The transmit data delay and receive data delay are not specifications - only their sum is. So a specific delay need not be measured, estimated, or even stated in a datasheet. Only the sum is required to be below the maximum.                                                                                   |           |                   |     |      |
| SuggestedRemedy                                                                                                                                                                                                                                                                                                    |           |                   |     |      |
| Change "The combined" back to "The sum of".                                                                                                                                                                                                                                                                        |           |                   |     |      |
| Change "Transmit data delay is estimated" to "Transmit data delay is defined" and similarly for receive data delay.                                                                                                                                                                                                |           |                   |     |      |
| Change the title of Table 192-27 to "Delay constraints".                                                                                                                                                                                                                                                           |           |                   |     |      |
| Proposed Response                                                                                                                                                                                                                                                                                                  |           | Response Status O |     |      |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                   |     |      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------------|-----|------|
| CI 192                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | SC 192.12 | P 294             | L 5 | # 18 |
| Ran, Adeo                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           | Cisco Systems     |     |      |
| Comment Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | T         | Comment Status    | X   |      |
| The additional text about the recommendations of 90A.7 is likely for a good purpose but it is unclear. What is the meaning of "maximum intrinsic delay value is allocated to the transmit PHY" and "minimum intrinsic delay is allocated to the receive PHY" in this clause? The table has PHY_S and PHY_D, each of which has both transmit and receive functions, and both are required for the time synchronization; the "allocation" in 90A.7 seems to be about how delays are reported in the context of clause 90, not about the delay constraints specified in this subclause. |           |                   |     |      |
| Also, this text is related to clause 90 or annex 90A, and unrelated to PAUSE.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |                   |     |      |
| I don't recall seeing similar text in any amendment, even after publication of 802.3cx, so it's unclear why it is required here.                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |                   |     |      |
| SuggestedRemedy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                   |     |      |
| If this text needs to be retained, break it into a separate paragraph (or a separate subclause), and clarify it. Otherwise, consider deleting it.                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |                   |     |      |
| Proposed Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | Response Status O |     |      |

|                                                                                                                                                                                                                                                                                                            |                 |                                                    |                                        |     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------------------------------------|----------------------------------------|-----|
| CI 192                                                                                                                                                                                                                                                                                                     | SC 192.13.4.5.3 | P 304                                              | L 6                                    | # 1 |
| Zimmerman, George                                                                                                                                                                                                                                                                                          |                 | CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi, S |                                        |     |
| Comment Type                                                                                                                                                                                                                                                                                               | T               | Comment Status                                     | X                                      |     |
| PICS RCV1 Feature can't be a receive FEC error rate, because this is a PMA requirement and the FEC decoder is in the PCS. The referenced requirement is on PMA receive signal quality. Rewording this to align with the requirements text in 192.4.2.3 will fix the issue, similar to PMAR1 in clause 191. |                 |                                                    |                                        |     |
| SuggestedRemedy                                                                                                                                                                                                                                                                                            |                 |                                                    |                                        |     |
| Change PICS RCV1 to read:                                                                                                                                                                                                                                                                                  |                 |                                                    |                                        |     |
| Quality of received symbols                                                                                                                                                                                                                                                                                |                 | 192.4.2.3                                          | Allows RFER of less than 2x10-10 after |     |
| RS-FEC decoding (by the PCS)                                                                                                                                                                                                                                                                               |                 | M                                                  | Yes[]                                  |     |
| Proposed Response                                                                                                                                                                                                                                                                                          |                 | Response Status                                    | O                                      |     |