

IEEE P802.3dm D2.0 Asymmetrical Electrical Automotive Ethernet Initial Working Group ballot comments

Cl 191 SC 191.1.3.2 P 63 L 28 # 501  
 Razavi, Alireza Eliyan  
 Comment Type E Comment Status X late  
 While PHY\_D and PHY\_S defined, 100M+MultiGBASE-T1/V1 , and MultiGBASE+100M-T1/V1 are widely used  
 SuggestedRemedy  
 use PHY\_D for 100M+MultiGBASE-T1/V1,and PHY\_S as MultiGBASE+100M-T1/V1 in the text  
 Proposed Response Response Status O

Cl 191 SC 191.1.4 P 64 L 26 # 517  
 Razavi, Alireza Eliyan  
 Comment Type E Comment Status X late  
 Passive voice: "HS\_PATH signaling is performed by the HS\_TX PCS generating continuous code-group sequences ..."  
 SuggestedRemedy  
 replace with "HS\_TX PCS generates countinous..", same for p64,l52, p76,l27,  
 Proposed Response Response Status O

Cl 191 SC 191.3.2.2 P 76 L 40 # 509  
 Razavi, Alireza Eliyan  
 Comment Type ER Comment Status X late  
 Several sentences in Clause 191 use passive voice where an active construction would read more directly and better matches preferred 802.3 drafting style. Example — 191.3.2.2 (p76) states: "The operation of the PCS Transmit function is controlled by the PMA\_TXMODE.indication message received from the PMA PHY Control function." The acting entity (the PMA\_TXMODE.indication message) appears after the verb. Suggested active form and additional instances are given in the Proposed Change column.  
 SuggestedRemedy

Convert the example to active voice: "The PMA\_TXMODE.indication message, received from the PMA PHY Control function, controls the operation of the PCS Transmit function." Apply the same passive-to-active conversion to the following instances: (a) p63 191.1.3 — "Each of these 276-bit blocks is formed into an RS-FEC input frame, then encoded by the RS-FEC(50,46,6)" → "The PCS forms each 276-bit block into an RS-FEC input frame, then the RS-FEC(50,46,6) encoder encodes it." (b) p64 191.1.4 — "the PCS is directed to generate only PAM2 symbols for transmission by the HS\_TX PMA" → "PHY Control directs the PCS to generate only PAM2 symbols for the HS\_TX PMA to transmit." (c) p73 191.2.3 — "The pcs\_data\_mode variable is generated by the PMA PHY Control function" → "The PMA PHY Control function generates the pcs\_data\_mode variable." (d) p85 191.3.2.3 — "Frames that cannot be corrected are marked with error symbols by the decoder" → "The decoder marks frames that cannot be corrected with error symbols." (e) p96 191.3.6 — "This status is set by the PHY to indicate the status of the receiver" → "The PHY sets this status to indicate the status of the receiver." These are editorial improvements only; no normative change is intended. Passive voice remains acceptable where the acting entity is genuinely unimportant or unknown.

Proposed Response Response Status O

Cl 191 SC 191.3.2.2 P 77 L 7 # 504  
 Razavi, Alireza Eliyan  
 Comment Type ER Comment Status X late  
 Long sentence (43 words) reduces readability. Current text: "If a PMA\_TXMODE.indication message has the value SEND\_N, the PCS is in the data mode of operation and the PCS Transmit function shall use a 65B coding technique to generate, at each symbol period, code-groups that represent data or control."  
 SuggestedRemedy  
 Replace with two sentences: "If a PMA\_TXMODE.indication message has the value SEND\_N, the PCS is in the data mode of operation. In data mode, the PCS Transmit function shall use a 65B coding technique to generate, at each symbol period, code-groups that represent data or control."  
 Proposed Response Response Status O

IEEE P802.3dm D2.0 Asymmetrical Electrical Automotive Ethernet Initial Working Group ballot comments

CI 191 SC 191.3.2.2 P 77 L 15 # 505

Razavi, Alireza Eliyan  
 Comment Type ER Comment Status X late

Long sentence (38 words) reduces readability. Current text: "During data encoding, PCS Transmit utilizes L-interleaved (L = 1, 2, or 4) Reed-Solomon encoders to generate and append 340 parity check bits to form 3600-bit (360,326) RS-FEC frames that are interleaved into an L-interleaved RS-FEC superframe."

**SuggestedRemedy**

Replace with two sentences: "During data encoding, PCS Transmit uses L-interleaved (L = 1, 2, or 4) Reed-Solomon encoders to generate and append 340 parity check bits, forming 3600-bit (360,326) RS-FEC frames. These frames are interleaved into an L-interleaved RS-FEC superframe."

Proposed Response Response Status O

CI 191 SC 191.3.2.2 P 77 L 22 # 506

Razavi, Alireza Eliyan  
 Comment Type ER Comment Status X late

Long sentence (36 words) reduces readability. Current text: "The interleaver settings requested in each direction of transmission may be different, and the value of L used by the transmitter is determined by the link partner and signaled during the PAM2 training mode Infocfield exchange."

**SuggestedRemedy**

Replace with two sentences: "The interleaver settings requested in each direction of transmission may be different. The link partner determines the value of L used by the transmitter, and signals it during the PAM2 training mode Infocfield exchange."

Proposed Response Response Status O

CI 191 SC 191.3.2.2.6 P 79 L 42 # 503

Razavi, Alireza Eliyan  
 Comment Type E Comment Status X late

191.3.2.2.6 "Ordered sets" is a modified-adoption reference: "See 149.3.2.2.6. LPI, /LI/ is not used by MultiG+100MBASE-T1/V1 PHYs." The reader must open Clause 149.3.2.2.6, then mentally subtract the LPI/ /LI/ content, to know the actual requirement.

**SuggestedRemedy**

Rewrite so the net requirement is stated locally, e.g., "Ordered sets are as specified in 149.3.2.2.6, except that LPI signaling and the /LI/ ordered set are not used by MultiG+100MBASE-T1/V1 PHYs. All other ordered sets defined in 149.3.2.2.6 apply unchanged."

Proposed Response Response Status O

CI 191 SC 191.3.2.2.6 P 79 L 43 # 518

Razavi, Alireza Eliyan  
 Comment Type E Comment Status X late

Typo: "MutltiG+100MBASE-T1/V1" has a misspelling ("Mutlti").

**SuggestedRemedy**

Correct to "MultiG+100MBASE-T1/V1".

Proposed Response Response Status O

CI 191 SC 191.3.2.3 P 84 L 1 # 507

Razavi, Alireza Eliyan  
 Comment Type ER Comment Status X late

Long sentence (39 words) reduces readability. Current text: "The PCS Receive function shall conform to the PCS 64B/65B Receive state diagram in Figure 191–19 and the PCS Receive bit ordering in Figure 191–13 for 10 Gb/s and Figure 191–14 for 5 Gb/s and 2.5 Gb/s, including compliance with the associated state variables as specified in 191.3.5.1.2."

**SuggestedRemedy**

Replace with two sentences: "The PCS Receive function shall conform to the PCS 64B/65B Receive state diagram in Figure 191–19, and to the PCS Receive bit ordering in Figure 191–13 for 10 Gb/s and Figure 191–14 for 5 Gb/s and 2.5 Gb/s. Conformance includes compliance with the associated state variables specified in 191.3.5.1.2."

Proposed Response Response Status O

IEEE P802.3dm D2.0 Asymmetrical Electrical Automotive Ethernet Initial Working Group ballot comments

CI 191 SC 191.3.2.3 P 85 L 22 # 508

Razavi, Alireza Eliyan  
 Comment Type ER Comment Status X late

Long sentence (40 words) reduces readability. Current text: "When the PCS Synchronization process has obtained synchronization, the RS-FEC frame error ratio (RFER) monitor state diagram shown in Figure 191-17 monitors the received signal for high RS-FEC frame error ratio and asserts hi\_rfer to indicate excessive RS-FEC frame errors."

SuggestedRemedy

Replace with two sentences: "When the PCS Synchronization process has obtained synchronization, the RS-FEC frame error ratio (RFER) monitor state diagram of Figure 191-17 monitors the received signal for a high RS-FEC frame error ratio. The monitor asserts hi\_rfer to indicate excessive RS-FEC frame errors."

Proposed Response Response Status O

CI 191 SC 191.4.2.2.12 P 102 L 7 # 519

Razavi, Alireza Eliyan  
 Comment Type E Comment Status X late

Missing space: "(seeFigure 191-18)".

SuggestedRemedy

Insert a space: "(see Figure 191-18)".

Proposed Response Response Status O

CI 191 SC 191.4.2.2.12 P 102 L 9 # 497

Razavi, Alireza Eliyan  
 Comment Type E Comment Status X late

Missing terminal period: the sentence ends "... contain the block payload" with no period.

SuggestedRemedy

Add a period at the end of the sentence.

Proposed Response Response Status O

CI 191 SC 191.4.2.3 P 105 L 18 # 498

Razavi, Alireza Eliyan  
 Comment Type E Comment Status X late

"employs the generator polynomial per Equation (149-5)" should be replaced by "employs the generator polynomial per Equation (191-8)"

SuggestedRemedy

see comment

Proposed Response Response Status O

CI 191 SC 191.5.2.2 P 110 L 18 # 516

Razavi, Alireza Eliyan  
 Comment Type TR Comment Status X late

When Auto-Negotiation is bypassed or undefined, neither PHY can identify the remote PHY vendor, so the VendorSpecificData bits (Oct8/9, 191.5.2.4.5) of the HS\_PATH Infofield may be interpreted differently by different vendors, creating an interoperability risk.

SuggestedRemedy

Move OAMen to octet 7, and use octet 8,9,and 10 for 24 bits OUI  
 P112, L1 : change Message Field to Message Field and PHY capability bits  
 P112, L21: bring the definition of OAMen to this line  
 P112, L22, L33 : convert the first reserved bit to OAMen  
 P112, L42 : rename section 191.5.2.5.6 to Organizationally Unique Identifier  
 [Oct8 = OUI[7:0], Oct9 = OUI[15:8], Oct10 = OUI[23:16]] contains Organizationally Unique Identifier (OUI).

Proposed Response Response Status O

CI 191 SC 191.5.2.2 P 110 L 18 # 514

Razavi, Alireza Eliyan  
 Comment Type TR Comment Status X late

Table 191-4 gives DME timing T1 = 8.53 ns and T2 = 4.26 ns. T2 is not exactly half of T1 (T2 should be 4.265 ns if T1 = 8.53 ns, or T1 should be 8.52 ns if T2 = 4.26 ns). The two values disagree at the third decimal place.

SuggestedRemedy

Resolve the rounding inconsistency in Table 191-4: either set T1 = 8.533 and T2 = 4.267 (matching 25.6/3 ns), or state explicitly that T2 = T1/2 and give the controlling value, with the dependent value derived in a NOTE.

Proposed Response Response Status O

IEEE P802.3dm D2.0 Asymmetrical Electrical Automotive Ethernet Initial Working Group ballot comments

Cl 191 SC 191.5.2.4.4 P 112 L 4 # 500

Razavi, Alireza Eliyan  
 Comment Type E Comment Status X late

The Message Field uses the bit timing\_lock\_OK for the FOLLOWER (Oct7<4>), but timing\_lock\_OK is not defined as a state diagram variable in 191.5.2.6.1 and does not appear in the PHY Control state diagram (Figure 191–31) .

*SuggestedRemedy*

timing\_lock\_OK bit does not carry any information. replace timing\_lock\_OK bit with a reserved bit

Proposed Response Response Status O

Cl 191 SC 191.5.2.4.8 P 113 L 50 # 512

Razavi, Alireza Eliyan  
 Comment Type ER Comment Status X late

PMA MDIO function mapping identical for both high and low speed direction

*SuggestedRemedy*

move 191.5.2.4.8 to new section 191.5.2.6.4 and remove 191.5.2.5.6

Proposed Response Response Status O

Cl 191 SC 191.5.2.4.8 P 114 L 19 # 513

Razavi, Alireza Eliyan  
 Comment Type TR Comment Status X late

Table 191-9 maps "Receive fault" → PMA\_receive\_fault, but PMA\_receive\_fault is not defined in 191.5.2.x variable lists; the variable appears only in this mapping table. PMA\_transmit\_disable needs definition too

*SuggestedRemedy*

use lower case for PMA in PMA\_transmit\_disable, and add the definition to p118, L32  
 pma\_transmit\_disable : When pma\_transmit\_disable set to TRUE, the average power of transmitted signal at MDI is nominally zero, and the transmitted signal shall be less than -36 dBm. use lower case for PMA in PMA\_receive\_fault, and add the definition to p118, L32  
 pma\_receive\_fault When pma\_receive\_fault set to TRUE, it indicates that training in phy control state machine is not successful.

Proposed Response Response Status O

Cl 191 SC 191.5.2.5 P 114 L 39 # 515

Razavi, Alireza Eliyan  
 Comment Type TR Comment Status X late

When Auto-Negotiation is bypassed or undefined, neither PHY can identify the remote PHY vendor, so the VendorSpecificData bits (Oct6/7, 191.5.2.5.4) of the LS\_PATH Infofield may be interpreted differently by different vendors, creating an interoperability risk.

*SuggestedRemedy*

Redefine Oct2/3/4 of the LS\_PATH Infofield as a 24-bit Organizationally Unique Identifier (OUI):  
 P114, L 30 : replace "reserved " with Organizationally Unique Identifier  
 P116,L 3 : rename section 191.5.2.5.6 with Organizationally Unique Identifier [Oct2 = OUI[7:0], Oct3 = OUI[15:8], Oct4 = OUI[23:16]] contains Organizationally Unique Identifier (OUI). The OUI is a 24-bit organization identifier assigned by the IEEE Registration Authority.

Proposed Response Response Status O

Cl 191 SC 191.6.2.5 P 133 L 46 # 502

Razavi, Alireza Eliyan  
 Comment Type E Comment Status X late

The acronym SNDR is used in 191.6.2.5 (transmitter linearity) and elsewhere without ever being expanded; "signal-to-noise-and-distortion ratio" does not appear anywhere in the clause.

*SuggestedRemedy*

Expand SNDR on first use, e.g., "signal-to-noise-and-distortion ratio (SNDR)", and add it to the acronym list if one is maintained.

Proposed Response Response Status O

IEEE P802.3dm D2.0 Asymmetrical Electrical Automotive Ethernet Initial Working Group ballot comments

Cl 191 SC 191.6.3.1 P 136 L 31 # 510  
 Razavi, Alireza Eliyan  
 Comment Type ER Comment Status X late  
 191.6.3.1 contains a subject-verb agreement error: "The signal received at the MDI that was transmitted ... and have passed through a link ... shall be received...". The singular subject "The signal" takes the plural verb "have passed". (The parallel sentence in 191.7.3.1 correctly uses "has passed".)  
*SuggestedRemedy*  
 Change "have passed" to "has passed" in 191.6.3.1 for agreement with the singular subject, consistent with 191.7.3.1.  
 Proposed Response Response Status O

Cl 191 SC 191.12.2.1 P 151 L 1 # 511  
 Razavi, Alireza Eliyan  
 Comment Type TR Comment Status X late  
 191.12.2.1 (-V1 MDI return loss) states "The differential impedance at the -V1 MDI for each transmit/receiver channel ..." and "For the -V1 PMD, a nominal differential characteristic is impedance of 50 Ω is used." The -V1 medium is a single coaxial cable (single-ended), so "differential impedance" and "differential characteristic impedance" are incorrect; the sentence also has transposed words ("characteristic is impedance of").  
*SuggestedRemedy*  
 Replace "differential impedance" / "differential characteristic impedance" with "characteristic impedance" for -V1, and correct the transposed wording to "a nominal characteristic impedance of 50 Ω is used." Also correct "transmit/receiver channel" to "transmit/receive channel".  
 Proposed Response Response Status O

Cl 191 SC 191.12.2.1 P 151 L 51 # 499  
 Razavi, Alireza Eliyan  
 Comment Type E Comment Status X late  
 Typo: "transmit/receiver channel".  
*SuggestedRemedy*  
 Change to "transmit/receive channel".  
 Proposed Response Response Status O

Cl 192 SC 192.1.1 P 159 L 17 # 495  
 Lin, YK Realtek Semiconductor Corp.  
 Comment Type T Comment Status X late  
 Add an option of 7.5 Gb/s in the HS\_PATH with 100 Mb/s in the LS\_PATH  
*SuggestedRemedy*  
 With editorial license, add 7.5 Gb/s in the HS\_PATH according to the changes proposed in [https://www.ieee802.org/3/dm/public/adhoc/060226/gorshe\\_3dm\\_02a\\_D2d0\\_7d5G-comments.pdf](https://www.ieee802.org/3/dm/public/adhoc/060226/gorshe_3dm_02a_D2d0_7d5G-comments.pdf)  
 Proposed Response Response Status O

Cl 192 SC 192.1.1 P 159 L 17 # 496  
 Lin, YK Realtek Semiconductor Corp.  
 Comment Type T Comment Status X late  
 Add two options:  
 7.5 Gb/s in the HS\_PATH with 1 Gb/s in the LS\_PATH  
 5 Gb/s in the HS\_PATH with 1 Gb/s in the LS\_PATH  
*SuggestedRemedy*  
 With editorial license, add 1 Gb/s in the LS\_PATH (with 5G/7.5G bps in the HS\_PATH) according to the changes proposed in [https://www.ieee802.org/3/dm/public/adhoc/060226/chini\\_3dm\\_02a\\_D2d0\\_1G\\_comments-preview.pdf](https://www.ieee802.org/3/dm/public/adhoc/060226/chini_3dm_02a_D2d0_1G_comments-preview.pdf)  
 Proposed Response Response Status O