Cl **FM** *SC* **FM** *P* **0** *L* **0** # 435

Hajduczenia, Marek Charter Communications

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

Update FM to revision 5.0 from https://www.ieee802.org/3/tools/framemaker/index.html

SuggestedRemedy

Per change

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.13.1** *P* **18** *L* **6** # 465

Tse, Richard Microchip Technology

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

Subclause 30.13.1 should be updated so all the TimeSync features from clause 45 are represented by a corresponding management object. There should be management objects that show all the capabilities, the min/max Tx/Rx delays (in nanoseconds and in sub-nanoseconds), whether the multiple PCS lane delay is handled per 802.3cx, whether dynamic delay changes are handled per 802.3cx, and the selected DDMP.

Subclause 90.6 should also be updated for this.

SuggestedRemedy

The draft text from the team that was assembled to resolve this issue, which was identified while trying to resolve multiple comments on this subclause in D2.1, should be used.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.13.1.7** *P* **20** *L* **44** # 466

Tse, Richard Microchip Technology

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

Start of SFD should be specified as the DDMP instead of just SFD.

SuggestedRemedy

Change
"Uses SFD as DDMP"
to
"Uses start of SFD as DDMP"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.175** *P* **23** *L* **40** # 436

Hajduczenia, Marek Charter Communications

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

D2.1 received a number of comments (#355, #361, #367, #377, #383, #389, #358, #360, #364, #366, #374, #376, #380, #382, #386, #388, #392, #394) asking to align the names of Clause 45 registers to use "in ns" and "in sub-ns" to better differentiate the register resolution. The same naming change needs to be propagated into more places in Clause 45, specifically into capability registers in the following tables and associated text
oTable 45-139 for PMA/PMD
oTable 45-230 for WIS
oTable 45-293 for PCS
oTable 45-336 for PHY XS
oTable 45-361 for DTE XS
oTable 45-375 for TC

SuggestedRemedy

Implement the following changes in Clause 45, using find&replace:
- change "TimeSync fine resolution transmit path data delay ability" to "TimeSync transmit path data delay ability, in sub-ns" (10x)
- change "TimeSync fine resolution receive path data delay ability" to "TimeSync receive path data delay ability, in sub-ns" (10x)
- change "the sub-ns-resolution fine resolution XXX [transmit|receive] path data delay registers" to "the XXX [transmit|receive] path data delay registers, in sub-ns resolution" (4x)
- change "the fine resolution XXX [transmit|receive] path data delay registers" to "the XXX [transmit|receive] path data delay registers, in sub-ns resolution" (7x)
- change "the ns-resolution XXX [transmit|receive] path data delay registers" to "the XXX [transmit|receive] path data delay registers, in ns resolution" (4x)
- change "does not support the XXX [transmit|receive] path data delay registers" to "does not support the XXX [transmit|receive] path data delay registers, in ns resolution" (12x)

where XXX covers PMA/PMD, WIS, PCS, PHY XS, DTE XS, and TS

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.175** *P* **23** *L* **48** # 437

Hajduczenia, Marek Charter Communications

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

"sub-ns-resolution" instances are still present

SuggestedRemedy

Change all instances of "sub-ns-resolution" to "sub-ns resolution"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.67** *P* **30** *L* **31** # 432

Dawe, Piers Nvidia

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

Please provide cross-references

SuggestedRemedy

As is usual for MDIO registers - provide cross-reference(s) to the appropriate places(s) in Clause 90. Similarly for the other similar MDIO registers.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.67** *P* **30** *L* **50** # 473

Tse, Richard Microchip Technology

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

Table 45-293 is a talbe of capabilities, but register 3.1800.11 Multilane is labelled as "support". It should be labelled as an "ability", as the other entries in this table are.

SuggestedRemedy

Change name of register from "Multilane Support" to "Multilane ability" in Table 45-293, 45.2.3.67.3, 90A.2, and 90A.3.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.67** *P* **31** *L* **5** # 474

Tse, Richard Microchip Technology

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

Table 45-293 is a talbe of capabilities, but register 3.1800.10 NUM_UNIT_CHANGE is labelled as "support". It should be labelled as an "ability", as the other entries in this table are.

SuggestedRemedy

Change name of register from "NUM_UNIT_CHANGE Support" to "NUM_UNIT_CHANGE ability" in Table 45-293, 45.2.3.67.4, 90A.2, and 90A.3.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.67** *P* **52** *L* **21** # 433

Dawe, Piers Nvidia

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

This says "a value ... indicating the number of bits of dynamic transmit path data delay". MAC bits? Bits at single-lane rate? Aggregate bits on the line, all lanes? ns? or 2e-16 ns?

SuggestedRemedy

Please clarify what units the number represents.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.67.1** *P* **31** *L* **36** # 439

Ran, Adee Cisco

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

"does not supports"
In addition to this subclause, this appears in 45.2.3.67.2, 45.2.5.28.1, and 45.2.5.28.2.

SuggestedRemedy

Change to "does not support", 4 instances

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.67.8** *P* **32** *L* **47** # 438

Hajduczenia, Marek Charter Communications

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

Bit 3.1800.0 does not indicate fine resolution support: "When read as a zero, bit 3.1800.0 indicates that the PCS does not support the fine resolution PCS receive path data delay registers (3.1805 through 3.1808)." is just wrong making reference to "fine resolution"

SuggestedRemedy

Change to "When read as a zero, bit 3.1800.0 indicates that the PCS does not support the PCS receive path data delay registers (3.1805 through 3.1808)."
The same problem exists in 45.2.5.28.6

Proposed Response *Response Status* **O**

Cl **45** SC **45.2.3.69a.1** P **35** L **32** # 470

Tse, Richard Microchip Technology

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

Fix sentence structure

SuggestedRemedy

Change

"Writes to this bit are also be ignored if they attempt to set the bit to a value that the equivalent capability bits in register (3.1800) indicate is not supported."

to

"Writes to this bit are ignored if they attempt to set the bit to a value for which the corresponding capability bits in register (3.1800) indicate is not supported."

Proposed Response *Response Status* **O**

Cl **45** SC **45.2.5.31.1** P **44** L **3** # 471

Tse, Richard Microchip Technology

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

need to indicate DDMP is the beginning of the first symbol after the SFD

SuggestedRemedy

Change

"When set to 1 the first symbol after the SFD is used as the data delay measurement point"

to

"When set to 1 the beginning of the first symbol after the SFD is used as the data delay measurement point"

Proposed Response *Response Status* **O**

Cl **45** SC **45.2.5.31.1** P **44** L **5** # 472

Tse, Richard Microchip Technology

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

Sentence refers to the wrong register and is not properly structured

SuggestedRemedy

Change

"Writes to this bit are also be ignored if they attempt to set the bit to a value that the equivalent capability bits in register (3.1800) indicate is not supported."

to

"Writes to this bit are ignored if they attempt to set the bit to a value for which the corresponding capability bits in register (5.1800) indicate is not supported."

Proposed Response *Response Status* **O**

Cl **90** SC **90.3** P **48** L **41** # 440

Ran, Adee Cisco

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

When mentioning IEEE Std 802.3 internally, it is common to call it "this standard" rather than using its full title. Compare with 90.4.1.

SuggestedRemedy

Change "outside the scope of IEEE Std 802.3" to "outside the scope of this standard".

Proposed Response *Response Status* **O**

Cl **90** SC **90.4** P **48** L **43** # 441

Ran, Adee Cisco

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

There are no changes in the body of subclause 90.4.1, only in 90.4.1.1. Unchanged text (with no editorial instructions) should not be included.

SuggestedRemedy

Delete the body of 90.4.1 and the first sentence of 90.4.1.1.

Proposed Response *Response Status* **O**

Cl **90** *SC* **90.4.1.1** *P* **50** *L* **46** # 442

Ran, Adee Cisco

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

There seems to be no change in the text of either NOTE 1 or NOTE 2.

SuggestedRemedy

Remove both notes and the editorial instruction from the amendment.

Proposed Response *Response Status* **O**

Cl **90** *SC* **90.4.1.2** *P* **51** *L* **4** # 443

Ran, Adee Cisco

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

"The TimeSync Client can use the indication of the event corresponding to the egress and ingress of packets provided by the TSSI, combined with knowledge of the time synchronization protocol frames, to capture the egress and ingress time of packets relevant to the protocol at the xMII. Which frames are of interest to any particular protocol is beyond the scope of this standard".

The words "packets" and "frames" are used apparently interchangeably in these two sentences. Other than here, clause 90 only refers to packets (15 times), and the word "frame" appears only in "start frame delimiter".

A "packet" is defined in 1.4.447 as "consists of a MAC frame (...) preceded by the Preamble and the SFD (...)".

To avoid confusion, it is suggested to use "packet" instead of "frame" throughout this amendment except in "start frame delimiter".

SuggestedRemedy

Change "frame" to "packet" twice in the quoted sentence.

Proposed Response *Response Status* **O**

Cl **90** *SC* **90.4.1.2** *P* **51** *L* **12** # 444

Ran, Adee Cisco

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

The words "ingress" and "egress" are used in this clause with specific meanings that are different from their dictionary meaning.

Ingress and Egress times are associated with specific events, but using the bare terms "ingress time" and "egress time" in the text does not make it clear.

To clarify the intent for readers who did not participate in the discussions of this amendment, some rephrasing would be beneficial.

SuggestedRemedy

Use the term "event" for ingress and egress and have the times associated with events.

As an example, change the first sentence from
"When the TimeSync Client captures a relevant egress time, it can use that egress time at the xMII, along with the TimeSync PHY transmit path data delay, if available, and the PCS dynamic transmit path data delay, if supplied, to calculate the egress time at the MDI"
to
"When the TimeSync Client captures a relevant packet egress event, it can use the time of that event at the xMII, along with the TimeSync PHY transmit path data delay, if available, and the PCS dynamic transmit path data delay, if supplied, to calculate the egress time of that packet at the MDI".

Make corresponding changes in the sentences about ingress, starting on line 16.

Proposed Response *Response Status* **O**

Cl **90** *SC* **90.4.1.2** *P* **51** *L* **16** # 445

Ran, Adee Cisco

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

The sentence starting with "When the TimeSync Client captures a relevant ingress time" is a change of topic - previous sentences were about packet egress. The two topics should be on separate paragraphs for clarity.

SuggestedRemedy

Add a paragraph break before the quoted sentence.

Proposed Response *Response Status* **O**

Cl **90** *SC* **90.4.3.1** *P* **51** *L* **42** # 446

Ran, Adee Cisco

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

The term "data delay measurement point (DDMP)" appears here before it is defined.

From its usage here it seems that a DDMP is an event that can be detected, and this meaning is consistent with its usage at least in most places. But in 90.4.3.1.1 it is defined as a parameter which has one of two possible values - not as an event that has a time associated with it.

It is suggested to have a definition of this term in the TSSI subclause, 90.4.2. The suggested remedy is a possible definition which hopefully captures the intent of using this term.

Alternatively, replace instances of "a valid data delay measurement point (DDMP) was detected" by "a valid time synchronization protocol frame was detected" and ensure that other usages of the term DDMP have a consistent meaning.

SuggestedRemedy

Insert the following paragraph after the first paragraph of 90.4.2:

"The service interface primitives are defined with respect to a data delay measurement point (DDMP) event, which is the appearance of either the SFD or the first symbol of a time synchronization protocol frame. The choice of whether a DDMP is the SFD or the first symbol is implementation specific."

Rephrase other text as necessary.

Proposed Response *Response Status* **O**

Cl **90** *SC* **90.4.3.1.1** *P* **51** *L* **49** # 447

Ran, Adee Cisco

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

The semantic of this primitive is being changed to TS_TX.indication(MM, DDMP, PDDPD) but the order of the parameters in the subsequent paragraphs is DDMP, MM, and then PDDPD.

The order in the text makes more sense because conventionally (in most programming languages) mandatory arguments appear first. Also, the existing interface has "SFD" as a mandatory first parameter.

Also applies to the TS_RX.indication primitive in 90.4.3.2.1.

SuggestedRemedy

Change the semantics line to TS_TX.indication(DDMP, MM, PDDPD).

Change TS_RX.indication accordingly.

Proposed Response *Response Status* **O**

Cl **90** *SC* **90.4.3.1.1** *P* **52** *L* **19** # 448

Ran, Adee Cisco

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

"a value ranging from -32768 to +32767 in two's complement format"

The primitives are defined in an abstract manner and there is no need to specify a format (unlike register bit assignments or the TX_NUM_UNIT_CHANGE interface). Compare to parameters with enumerated values for which the "formats" are never specified.

Also in 90.4.3.2.1.

SuggestedRemedy

Delete "in two's complement format" in both places.

Proposed Response *Response Status* **O**

Cl **90** *SC* **90.4.3.1.1** *P* **52** *L* **20** # 449

Ran, Adee Cisco

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

"indicating the number of bits of dynamic transmit path data delay the beginning of the SFD, or the beginning of the first symbol after the SFD (see 45.2.3.69a), of the packet that generated the primitive, experiences in the PCS within the PHY"

This is a very long and complex sentence.

SuggestedRemedy

Change the quoted sentence to
"indicating the number of bits of dynamic transmit path data delay that are experienced by the beginning of the packet that generated the primitive (either the SFD or the first symbol after the SFD, see 45.2.3.69a), in the PCS within the PHY".

Proposed Response *Response Status* **O**

Cl **90** *SC* **90.4.3.1.1** *P* **52** *L* **21** # 450

Ran, Adee Cisco

Comment Type **TR** *Comment Status* **X**

"number of bits of <…> delay"
Delay has units of time, so this should be "bit times" (bit time or BT has a definition 1.4.160).

Also in the descriptions of TX_NUM_UNIT_CHANGE (90.5.3) and RX_NUM_UNIT_CHANGE (90.5.4).

SuggestedRemedy

Change "the number of bits of dynamic transmit path data delay" to "the dynamic transmit data path delay in bit times (BT)".

Apply a similar change in 90.5.3 and 90.5.4.

Proposed Response *Response Status* **O**

Cl **90** *SC* **90.4.3.1.1** *P* **52** *L* **26** # 431

Dawe, Piers Nvidia

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

"NUM_UNIT_CHANGE" is a puzzling name that gives no clue as to what this does and doesn't match the other xMII signal names such as TXD<63:0>, TXC<7:0>, RXD<63:0>, RXC<7:0>, RX_CLK and TX_CLK. The draft says that TX_NUM_UNIT_CHANGE<15:0> conveys the value of PDDPD over the xMII to the RS, which sends it upward as TS_TX.indication. In the context of MDIO registers: nearly all the registers in Table 45-293, TimeSync PCS capability, mention "data delay", usually in the bit name - except this one.

SuggestedRemedy

Change the names to ones that fit with the other xMII signals, for example:
Change TX_NUM_UNIT_CHANGE to TX_DDEL;
Change RX_NUM_UNIT_CHANGE to RX_DDEL;
Change NUM_UNIT_CHANGE to DDEL.

Proposed Response *Response Status* **O**

Cl **90** *SC* **90.5** *P* **54** *L* **6** # 467

Tse, Richard Microchip Technology

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

correction in grammar

"provides" should be "provide"

SuggestedRemedy

Change

"These signals provides the dynamic data path delay information to be forwarded to the TimeSync Client for enabling the calculation of highly accurate data path delay values."

to

"These signals provide the dynamic data path delay information to be forwarded to the TimeSync Client for enabling the calculation of highly accurate data path delay values."

Proposed Response *Response Status* **O**

Cl **90** *SC* **90.5.3** *P* **56** *L* **1** # 451

Ran, Adee Cisco

Comment Type **ER** *Comment Status* **X**

The editorial instruction "insert" does not require underlining the inserted text (unlike "change").

SuggestedRemedy

Clear the underline formatting from subclauses 90.5.3 (including the title) and 90.5.4.

Proposed Response *Response Status* **O**

Cl **90** *SC* **90.5.3** *P* **56** *L* **11** # 452

Ran, Adee Cisco

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

"The value reports the number of bits of dynamic transmit path data delay the transmit data being transferred from the gRS to the PHY experiences, relative to the mean PCS transmit path data delay (see 45.2.3.68), due to actions such as alignment marker insertion, codeword marker insertion, and/or Idle rate adaptation insertion/removal"

This is a very long and complex sentence.

Similar sentence appears in 90.5.3 for TX_NUM_UNIT_CHANGE.

SuggestedRemedy

Change the quoted sentence to
"The value reports number of bits of dynamic transmit path data delay that are experienced by the data transferred from the gRS to the PHY, relative to the mean PCS transmit path data delay (see 45.2.3.68), due to actions such as insertion or removal of idles or insertion of alignment markers or codeword markers".

Change 90.5.3 TX_NUM_UNIT_CHANGE accordingly.

Proposed Response *Response Status* **O**

Cl **90** *SC* **90.7** *P* **58** *L* **14** # 434

Dawe, Piers Nvidia

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

Points are usually in space, instants are in time. So "data delay measurement point" sounds like the place where the data delay is measured (e.g. the MDI or xMII). The thing that is timed as it passes the MDI should have a different name. data delay measurement event? data delay measurement marker? data delay measurement instant (but that could be taken as the time when the thing passes the point)?
Also, I wondered if the phrase is being used with two meanings, the event and its time.

SuggestedRemedy

If feasible, change "data delay measurement point" to "data delay measurement marker" and "data delay measurement instant" as appropriate.

Proposed Response *Response Status* **O**

Cl **90** *SC* **90.7** *P* **59** *L* **7** # 453

Ran, Adee Cisco

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

"The data delay measurement point shall be either the beginning of the start of frame delimiter (SFD) or the first symbol after the SFD (see 45.2.3.69a)"

It is not stated whether this choice is constant or can change dynamically. I would assume it is constant once the PCS is configured and enabled, but without stating it, implementations will need to handle dynamic changes, which may never occur.

If the task force thinks that the choice can be made static without loss of functionality, it would be good to specify it this way, here and in 45.2.3.69a.1.

SuggestedRemedy

Add "The choice of the data delay measurement point is implementation dependent, and does not change when the PCS is not at reset or power down", or other language to that effect.

Additionally or alternatively, make a similar change in 45.2.3.69a.1.

Proposed Response *Response Status* **O**

Cl **90** *SC* **90.7** *P* **59** *L* **9** # 454

Ran, Adee Cisco

Comment Type **ER** *Comment Status* **X**

According to the style manual (18.1) "Within each subclause, notes should be numbered sequentially". The first newly inserted NOTE is not numbered.

SuggestedRemedy

Change "NOTE" to "NOTE 1" and renumber all subsequent notes in 90.7 accordingly.

Proposed Response *Response Status* **O**

Cl **90** *SC* **90.7** *P* **59** *L* **31** # 455

Ran, Adee Cisco

Comment Type **ER** *Comment Status* **X**

Using "Tx" as a shorthand for "transmit" is common in names of variables, signals, functions, etc. but not in the text. "Transmit" is used everywhere in this draft except for annex 90A (subject of another comment).

Similarly, "Rx" in the next paragraph, line 40 should be "receive".

SuggestedRemedy

Change "Tx" to "transmit" and "Rx" to "receive".

Proposed Response *Response Status* **O**

Cl **90** *SC* **90.7** *P* **59** *L* **48** # 468

Tse, Richard Microchip Technology

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

Per some comments from D2.1, we should avoid potential controversy by avoiding use of the term "mutli-" when refering to PHY lanes.

There is another instance of "multi-lane" on line 52 of page 59.

SuggestedRemedy

Change
"The receiver of a multi-lane PHY is expected to include a buffer to compensate for skew between the lanes."
to
"The receiver of PHY with multiple lanes is expected to include a buffer to compensate for skew between the lanes."

Change
"The receive path data delay for a multi-lane PHY is reported as if the data delay measurement point arrived at the MDI input on the lane with the smallest buffer delay."
to
"The receive path data delay for a PHY with multiple lanes is reported as if the data delay measurement point arrived at the MDI input on the lane with the smallest buffer delay."

Proposed Response *Response Status* **O**

Cl **90** *SC* **90.7** *P* **60** *L* **1** # 469

Tse, Richard Microchip Technology

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

Per some comments from D2.1, we should avoid potential controversy by avoiding use of the term "mutli-" when refering to PHY lanes.

There is another instance of "multi-lane" on line 6 of page 60.

SuggestedRemedy

Change
"Lane skew can be present on a multilane transmitter when PMA/PMD lanes have different static latencies such that their alignment markers appear…"
to
"Lane skew can be present on a transmitter with multiple lanes when the PMA/PMD lanes have different static latencies such that their alignment markers appear..."

Change
"If the transmit skew is not zero, then it is recommended that the transmit path delay for a multi-lane PHY be reported as if the data delay measurement point departed..."
to
"If the transmit skew is not zero, then it is recommended that the transmit path delay for a PHY with multiple lanes be reported as if the data delay measurement point departed..."

Proposed Response *Response Status* **O**

Cl **90** *SC* **90.7** *P* **60** *L* **53** # 456

Ran, Adee Cisco

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

"it is recommended to, when possible, avoid Idle insertion/removal, alignment marker insertion/removal, and/or codeword marker insertion/removal in the sublayers below the xMII/AUI"

This sentence is difficult to parse. The usage of slashes in text should be avoided when possible.

SuggestedRemedy

Change to "it is recommended to avoid insertion and removal of Idles, alignment markers, and codeword markers in the sublayers below the xMII/AUI, when possible".

Proposed Response *Response Status* **O**

Cl **90** *SC* **90.8** *P* **62** *L* **1** # 457

Ran, Adee Cisco

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

The PICS subclause appears without any editorial instruction.

As this is an amendment that modifies the existing Clause 90, there is no need to include the full PICS. Instead, only the changes to the PICS relative to the base document should be included, with editorial instructions, as done in other amendments that modify existing clauses.

SuggestedRemedy

Remove the unchanged subclauses 90.8.1, 90.8.2, and 90.8.4.

Add an editorial instruction in 90.8.3 to modify items TS_TX and TS_RX.

Proposed Response *Response Status* **O**

Cl **90A** *SC* **90A.2** *P* **65** *L* **21** # 458

Ran, Adee Cisco

Comment Type **TR** *Comment Status* **X**

"high accuracy" is a relative term. The "old" clause 90 could be considered accurate for some applications, and the "new" could be considered not accurate enough for other applications.

This amendment now uses the term "'sub-nanosecond" in its description. It would be more accurate to use this term here instead of "high accuracy".

SuggestedRemedy

Change "high accuracy" to "sub-nanosecond" across annex 90A, with editorial license.

Proposed Response *Response Status* **O**

Cl **90A** *SC* **90A.2** *P* **65** *L* **28** # 459

Ran, Adee Cisco

Comment Type **TR** *Comment Status* **X**

"physical layer device (PHY)" - "Physical Layer" is always capitalized.

SuggestedRemedy

Change to "Physical Layer device (PHY)".

Proposed Response *Response Status* **O**

Cl **90A** SC **90A.3** P **66** L **1** # 460

Ran, Adee Cisco

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

Here "bytes" but on line 46 "octet". "Octet" is used more often in 802.3.

SuggestedRemedy

Change "bytes" to "octets".

Proposed Response *Response Status* **O**

Cl **90A** SC **90A.3** P **66** L **39** # 461

Ran, Adee Cisco

Comment Type **TR** *Comment Status* **X**

Footnote e discusses FEC for Ethernet rates 5G and 2.5G. FEC exists in 2.5GBASE-T/T1 and 5GBASE-T/T1, but the T1 PHYs have no PCS lane distribution, and there are also PHYs for these rates that do not include FEC at all (2.5GBASE-KX, 5GBASE-KR). The footnote seems to be relevant only for 2.5GBASE-T and 5GBASE-T.

SuggestedRemedy

Change "For these rates" to "For 2.5GBASE-T or 5GBASE-T".

Consider adding "for other PHYs at these speeds there is no PCS lane distribution/merging".

Proposed Response *Response Status* **O**

Cl **90A** SC **90A.4** P **67** L **5** # 462

Ran, Adee Cisco

Comment Type **ER** *Comment Status* **X**

Using "Tx" and "Rx" as shorthand for "transmit" "and "receive" is common in names of variables, signals, functions, etc. but not in the text. The full words are used in most of this draft and in the base document.

Even though the shorthand is spelled out in the beginning of 90A.4, it is preferrable to avoid it and use the full words in this annex as well.

SuggestedRemedy

Change the terms "Tx" and "Rx" in the text to "transmit" and "receive", respectively, across annex 90A. Retain these terms where they are used as part of variable or signal names.

Delete the parentheses on lines 5-6.

Proposed Response *Response Status* **O**

Cl **90A** SC **90A.5.1** P **68** L **4** # 463

Ran, Adee Cisco

Comment Type **TR** *Comment Status* **X**

What does "*(nanoseconds/unit)" mean?

It seems that PDDPD has units of nanoseconds. But this format is uncommon in such expressions.

Also in item vi and twice in 90A.5.2.

SuggestedRemedy

Change "T1 + PDDPD*(nanoseconds/unit)" to "T1 + PDDPD ns".

Alternatively, define t_PDDPD as a value in ns corresponding to PDDPD and use it in the expressions instead.

Implement here and in item vi and the two instances in 90A.5.2.

Proposed Response *Response Status* **O**

Cl **90A** SC **90A.5.3** P **69** L # 464

Ran, Adee Cisco

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

The usage of slashes in text should be avoided when possible.

SuggestedRemedy

Change "If a PHY does not perform alignment marker, codeword marker, or Idle insertion/removal" to "If a PHY does not perform insertion or removal of alignment markers, codeword markers, or Idles".

Proposed Response *Response Status* **O**