

P802.3bv D1.3 Gigabit Ethernet Over Plastic Optical Fiber 4th Task Force review comments

CI 114 SC 114.5.5.1 P98 L10 # 1 [REDACTED]
 Pérez-Aranda, Rubén KDPOF

Comment Type **TR** Comment Status **D**

Specifications for positive and negative output droop are wrong because a bug in the simulation used to calculate them.

SuggestedRemedy

Replace with correct values:
 DO+: min 0 dB, max 1.1 dB
 DO-: min -0.9 dB, max 0 dB

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI 114 SC 114.2.1 P41 L1 # 2 [REDACTED]
 Gilarranz, Alejandra KDPOF

Comment Type **ER** Comment Status **D**

Data sub-blocks can make reference to payload or header data sub-blocks.
 Sentence "GMII data stream is mapped into the data sub-blocks..." should be replaced by "GMII data stream is mapped into the payload data sub-blocks..."

SuggestedRemedy

Replace sentence as suggested in comment.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI 114 SC 114.2.3.4 P45 L42 # 3 [REDACTED]
 Gilarranz, Alejandra KDPOF

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

Typing error.

SuggestedRemedy

Replace "ans" by "and".

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI 114 SC 114.5.1.3.2 P86 L40 # 4 [REDACTED]
 Gilarranz, Alejandra KDPOF

Comment Type **ER** Comment Status **D**

Cross reference in PMD_TXPWR.request section to 114.8 makes reference to "Loopback modes".

Also in page 87, line 14.

SuggestedRemedy

Modify reference to point to 114.4.4 section.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI 45 SC 45.2.3.48.6 P27 L23 # 5 [REDACTED]
 Gilarranz, Alejandra KDPOF

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

Missing full stop at the end of the sentence.
 Also in subclause 45.2.3.49, page 27, line 32.

SuggestedRemedy

Add full stop.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI 45 SC 45.2.3.50.2 P29 L23 # 6 [REDACTED]
 Gilarranz, Alejandra KDPOF

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

Missing parenthesis in "(no test mode is selected in 3.518.15:13."

SuggestedRemedy

Add parenthesis.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

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Cl 45 SC 45.2.3.51 P30 L22 # 7
 Gilarranz, Alejandra KDPOF

Comment Type E Comment Status D

In Table 45-164. Useless word "mode" in bit 3.519.6 description.
 Also in page 30, line 23.

SuggestedRemedy

Replace "Tx PCS is currently transmitting LPI mode" by "Tx PCS is currently transmitting LPI".

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 114 SC 114.2.1 P40 L53 # 8
 Gilarranz, Alejandra KDPOF

Comment Type E Comment Status D

Cross reference to 114.5 at the end of the sentence does not work properly.
 The same comment applies for cross reference 114.2.3 in pag 64, lin 6.

SuggestedRemedy

Fix cross reference to transport to section 114.5 of the document.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

P40, L53: cross reference should be 114.4
 P64, L6: just replace plain text with cross reference

Cl 114 SC 114.3.1 P65 L20 # 9
 Gilarranz, Alejandra KDPOF

Comment Type T Comment Status D

In Table 114-3, for field PHD.TX.NEXT.THP.SETID "Valid values" column, the text for value 0 "no request for changing the THP coefficients is performed" should be replaced by "no request for applying the THP coefficients received in PHD field PHD.RX.REQ.THP.COEF*" (they can change or not).

SuggestedRemedy

Replace text as suggested in comment.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 114 SC 114.3.1 P66 L6 # 10
 Gilarranz, Alejandra KDPOF

Comment Type T Comment Status D

In Table 114-3, in PHD.RX.LINKMARGIN Description column the following idea is missing:
 "When the value is negative, this field reports the needed extra SNR with respect to min SNR to provide loc_rcvr_status OK."

SuggestedRemedy

Insert text with the idea suggested in comment.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 114 SC 114.2.4.4 P61 L31 # 11
 Gilarranz, Alejandra KDPOF

Comment Type ER Comment Status D

In figure 114-31. "k0" variable is not defined.

SuggestedRemedy

Define or remove "k0" variable from figure 114-31.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Replace "k0+1=9" with just "9".

Cl 114 SC 114.5.4.2 P95 L3 # 12
 Gilarranz, Alejandra KDPOF

Comment Type ER Comment Status D

Typing error. "Link segment type I" should be replaced by "Link segment type II".
 Also in page 95, line 5.

SuggestedRemedy

Replace text as suggested in comment.

Proposed Response Response Status W

PROPOSED ACCEPT.

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Cl 114 SC 114.5.4.3 P96 L3 # 13
 Gilarranz, Alejandra KDPOF

Comment Type ER Comment Status D

Typing error. "Link segment type I" should be replaced by "Link segment type III".
 Also in page 96, line 5.

SuggestedRemedy

Replace text as suggested in comment.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 45 SC 45.2.3.49.1 P28 L15 # 14
 Gilarranz, Alejandra KDPOF

Comment Type T Comment Status D

According to control state diagram in figure114-53, RXO_VAL bit is set to zero when the last register (3.517) containing the message is read, but only after a read of the first register (3.510).

SuggestedRemedy

Replace string:
 "The bit is set to zero when the last register (3.517) containing the message is read."
 with:
 "The bit is set to zero when the last register (3.517) containing the message is read after a read access to the first register (3.510)."

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 114 SC 114.5.3.1 P91 L25 # 15
 Gilarranz, Alejandra KDPOF

Comment Type T Comment Status D

It is not mentioned in section text how to align pdb data when transitioning from Test Mode 1 to normal mode.

SuggestedRemedy

Add text to make clear how to align payload data when transitioning from Test Mode 1 to normal mode.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See comment #122

Cl 114 SC 114.5.2.4.2 P91 L9 # 16
 Gilarranz, Alejandra KDPOF

Comment Type TR Comment Status D

In figure 114-47, the transition conditions "aop_tp3<-35dBm" and "aop_tp3>-29dBm" does not match with section text. They have been interchanged.

SuggestedRemedy

Place the mentioned conditions in the correct transitions in figure 114-47.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 01 SC 1.4 P20 L41 # 17
 Tapia, Pablo KDPOF

Comment Type E Comment Status D

"bose, ray-chaudhurim hocquenghem (BCH)"

SuggestedRemedy

Remove "m", add comma, and use upper-case for personal names:
 Bose, Ray-Chaudhuri, Hocquenghem (BCH)

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 45 SC 45.2.3.48.5 P27 L18 # 18
 Tapia, Pablo KDPOF

Comment Type E Comment Status D

"together with the TXO_DATAx bits are the OAM message payload"
 Change "are" to "form".

SuggestedRemedy

"together with the TXO_DATAx bits form the OAM message payload"

Proposed Response Response Status W

PROPOSED ACCEPT.

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CI 45 SC 45.2.3.49.3 P28 L26 # 19
 Tapia, Pablo KDPOF
 Comment Type E Comment Status D
 "and together with the RXO_DATAx bits are the received OAM message payload."
 Change "are" to "form".
 SuggestedRemedy
 "and together with the RXO_DATAx bits form the received OAM message payload."
 Proposed Response Response Status W
 PROPOSED ACCEPT.

CI 45 SC 45.2.3.50.4 P29 L38 # 22
 Tapia, Pablo KDPOF
 Comment Type E Comment Status D
 "Changes of EEE enable value"
 SuggestedRemedy
 "Changes in EEE enable value"
 Proposed Response Response Status W
 PROPOSED ACCEPT.

CI 45 SC 45.2.3.50.2 P29 L23 # 20
 Tapia, Pablo KDPOF
 Comment Type E Comment Status D
 "(no test mode is selected in 3.518.15:13."
 Closing parenthesis missing.
 SuggestedRemedy
 Change to:
 "(no test mode is selected in 3.518.15:13)."
 Proposed Response Response Status W
 PROPOSED ACCEPT.

CI 114 SC 114.2 P40 L18 # 23
 Tapia, Pablo KDPOF
 Comment Type E Comment Status D
 "which finally is decoded to produce the GMII receive data stream."
 Change sentence order.
 SuggestedRemedy
 "which is finally decoded to produce the GMII receive data stream."
 Proposed Response Response Status W
 PROPOSED ACCEPT.

CI 45 SC 45.2.3.50.3 P29 L30 # 21
 Tapia, Pablo KDPOF
 Comment Type E Comment Status D
 "Changes of OAM enable value"
 SuggestedRemedy
 "Changes in OAM enable value"
 Proposed Response Response Status W
 PROPOSED ACCEPT.

CI 114 SC 114.2.3.4 P45 L41 # 24
 Tapia, Pablo KDPOF
 Comment Type E Comment Status D
 " mapped into 1792 PAM2 symbols ans scaled as follows"
 TYPO, change ans by and.
 SuggestedRemedy
 " mapped into 1792 PAM2 symbols and scaled as follows"
 Proposed Response Response Status W
 PROPOSED ACCEPT.

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Cl 114 SC 114.2.4.1.1 P48 L4 # 25
 Tapia, Pablo KDPOF

Comment Type T Comment Status D

"CTRL<1:0> (CB<6:7>): This field encodes the content of..."

SuggestedRemedy

Assuming there is no order reversing of bits, CTRL<1:0> shall be mapped to CB<7:6>.

Change to:

"CTRL<1:0> (CB<7:6>): This field encodes the content of..."

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 114 SC 114.2.4.1.1 P48 L26 # 26
 Tapia, Pablo KDPOF

Comment Type ER Comment Status D

"Finally, the first CB is always shifted to the beginning of the PDB.CTRL."

SuggestedRemedy

It might be confusing. Replace by:

"Finally, the bytes within the PDB.CTRL are reordered as follows:

- 1) The first received CB from the GMII is transmitted in first place,
- 2) followed by all the data bytes that were received before the first CB (if any),
- 3) followed by all the bytes that were received after the first CB."

Proposed Response Response Status W

PROPOSED ACCEPT.

Also move Figure 114-15 to be near to first reference in text.

Cl 114 SC 114.2.4.1.1 P49 L51 # 27
 Tapia, Pablo KDPOF

Comment Type E Comment Status D

"The offset to the start of the first PDB in Transmit Block j+1 DELTA(j+1) can be calculated from the offset calculated for Transmit Block j DELTA(j) by using the following equation"

SuggestedRemedy

Redundant "calculated". Replace by:

"The offset to the start of the first PDB in Transmit Block j+1 DELTA(j+1) can be calculated from the offset of Transmit Block j DELTA(j) by using the following equation"

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 114 SC 114.2.4.3.3 P56 L45 # 28
 Tapia, Pablo KDPOF

Comment Type E Comment Status D

"The processing for the I and Q components are not equal."

SuggestedRemedy

"The processing for the I and Q components is not equal."

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 114 SC 114.2.4.3.3 P56 L47 # 29
 Tapia, Pablo KDPOF

Comment Type E Comment Status D

"which sets 1 or -1 at the input to the last adder..."

SuggestedRemedy

"which sets 1 or -1 at the input of the last adder..."

Proposed Response Response Status W

PROPOSED ACCEPT.

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Cl 114 SC 114.3.2.3 P69 L41 # 30
 Tapia, Pablo KDPOF
 Comment Type E Comment Status D
 "the PHY receiver begins link establishment with recovering clock from the received signal."
 Change "with" to "by".
 SuggestedRemedy
 "the PHY receiver begins link establishment by recovering the clock from the received signal."
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 114 SC 114.4.5 P85 L14 # 31
 Tapia, Pablo KDPOF
 Comment Type E Comment Status D
 Equation 114-24 mixes variable names with constants. This might be confusing.
 SuggestedRemedy
 Follow the style chosen for equations 114-22 and 114-23, where the equation is expressed first with variable names, and then substituting them with their values.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Modify beginning of eq 114-22 eliminating "(us)":
 "Tq = ..."
 Modify eq 114-23 in the same way.
 Replace from P85 L8 as follows:
 "Additional LPI timing parameters for 1000BASE-H are specified in Table 78-4.
 Following equation provides how Tw and the other parameters are calculated.

$$T_w = T_q + T_r + WCPDFOBST/SE/F_s = 23.52 + 1.30 + 64/3.1883/325 = 24.88 \text{ us (114-24)}$$
 Tw is the time needed to transmit a payload data sub-block plus a pilot or physical header sub-block plus the needed time to transmit the worst-case offset WCPDFOBST of a PDB relative to the first bit of a payload data sub-block (see 114.2.4.1.1). SE is the spectral efficiency of the coded PAM16 scheme (see 114.2.4.3)."

Cl 114 SC 114.5.2.4 P90 L28 # 32
 Tapia, Pablo KDPOF
 Comment Type E Comment Status D
 Dot missing at the end of line:
 "State variables are defined in 114.5.2.4.1"
 SuggestedRemedy
 "State variables are defined in 114.5.2.4.1."
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 114 SC 114.5.2.4.2 P91 L9 # 33
 Tapia, Pablo KDPOF
 Comment Type ER Comment Status D
 In figure 114-47 the average optical power thresholds are interchanged.
 SuggestedRemedy
 When passing from PMDDT_FAIL to PMDDT_OK the aop_tp3 shall be higher than -29dBm, and analogously, when passing from PMDDT_OK to PMDDT_FAIL, the aop_tp3 shall be smaller than -35 dBm.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Modify figure 114-47 per comment. Left side transition arrow to be bottom up. Right side transition arrow to be top down.

Cl 114 SC 114.5.3.1 P91 L31 # 34
 Tapia, Pablo KDPOF
 Comment Type E Comment Status D
 "On reception, after MLCC decoding and binary descrambler, a zero data sequence is expected with no errors."
 SuggestedRemedy
 "In absence of errors, a zero data sequence is expected after the binary descrambler in the receiver."
 Proposed Response Response Status W
 PROPOSED ACCEPT.

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Cl 114 SC 114.5.3.4 P92 L18 # 35
 Tapia, Pablo KDPOF
 Comment Type E Comment Status D
 "For test mode 4 definition, let be q1 the sub-sequence composed by ..."
 Change sentence order.
 SuggestedRemedy
 "For test mode 4 definition, let q1 be the sub-sequence composed by ..."
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 99 SC P14 L15 # 36
 Tapia, Pablo KDPOF
 Comment Type E Comment Status D
 "...and 1000BASE-RHC37"
 Remove "37" at the end of the sentence.
 SuggestedRemedy
 "...and 1000BASE-RHC"
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 99 SC P17 L1 # 37
 Tapia, Pablo KDPOF
 Comment Type E Comment Status D
 "...and 1000BASE-RHC114"
 Remove "114" at the end of the sentence.
 SuggestedRemedy
 "...and 1000BASE-RHC"
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 114 SC 114.5.6.5 P101 L31 # 38
 Tapia, Pablo KDPOF
 Comment Type E Comment Status D
 Remove "at" in:
 "P1 is measured at 15 ns after the rise-edge crossing of transmit signal with the average optical power level."
 SuggestedRemedy
 "P1 is measured 15 ns after the rise-edge crossing of transmit signal with the average optical power level."
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 114 SC 114.5.6.6 P101 L51 # 39
 Tapia, Pablo KDPOF
 Comment Type E Comment Status D
 "Pmax and Pmin are the maximum and minimum values that take the optical power signal at TP2,"
 change sentence order.
 SuggestedRemedy
 "Pmax and Pmin are the maximum and minimum values that the optical power signal take at TP2,"
 Proposed Response Response Status W
 PROPOSED ACCEPT.

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CI 114 SC 114.5.6.7 P102 L9 # 40
 Tapia, Pablo KDPOF

Comment Type E Comment Status D

Redundant measure -> measurements.
 "To measure ERmax, P1 and P0, measurements are taken where the envelope of the signal is minimum."

SuggestedRemedy

"To estimate ERmax, P1 and P0, measurements are taken where the envelope of the signal is minimum."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

From P102 L9 to the end of paragraph replace with:
 "ERmax is calculated based on P1 and P0 measurements where the envelope of the signal is minimum. P1 is measured 15 ns after rise-edge AOP crossing and P0 15 ns after fall-edge AOP crossing, being both edges consecutive. Similarly, ERmin is calculated based on P1 and P0 measurements where the signal envelope is maximum."

CI 114 SC 114.5.6.7 P102 L10 # 41
 Tapia, Pablo KDPOF

Comment Type E Comment Status D

Remove "at" in:
 "P1 is measured at 15 ns after rise-edge AOP crossing and P0 at 15 ns after fall-edge AOP crossing"

SuggestedRemedy

"P1 is measured 15 ns after rise-edge AOP crossing and P0 15 ns after fall-edge AOP crossing"

Proposed Response Response Status W

PROPOSED ACCEPT.

See comment #40.

CI 114 SC 114.5.6.8 P102 L32 # 42
 Tapia, Pablo KDPOF

Comment Type T Comment Status D

"The apparatus must have sufficient linearity so does not introduce any appreciable distortion in the measurement."
 Vague specification for apparatus distortion.

SuggestedRemedy

Quantify distortion specification.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

The implementation has to fit the TX distortion specifications. Therefore, it is up to the implementer the correct selection of the apparatus to carry out the measurement. In case of the apparatus introduces significant distortion to the measurement, this will be captured by the processing script doing the task of implementing a transmitter that meet the distortion specifications harder.

Editor action: eliminate "The apparatus must have sufficient linearity so does not introduce any appreciable distortion in the measurement."

CI 114 SC 114.7.3 P106 L3 # 43
 Tapia, Pablo KDPOF

Comment Type E Comment Status D

Table 114-12:
 It would be easier to understand if the order of columns in the table were:
 TXO_REQ -> TXO_MSGT -> TXO_PHYT -> TXO_MERT
 following the chronological sequence of the OAM transmission protocol.

SuggestedRemedy

Change order of columns in table as suggested.

Proposed Response Response Status W

PROPOSED ACCEPT.

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Cl 114 SC 114.7.4.1 P106 L54 # 44
 Tapia, Pablo KDPOF
 Comment Type **E** Comment Status **D**
 "either local or remote PHY do not have OAM ability or it is disabled"
 SuggestedRemedy
 "either local or remote PHY does not have OAM ability or it is disabled"
 Proposed Response Response Status **W**
 PROPOSED ACCEPT.

Cl 114 SC 114.7.4.3 P109 L43 # 45
 Tapia, Pablo KDPOF
 Comment Type **E** Comment Status **D**
 "Moreover, bits PHD.OAM.MERT and PHD.OAM.PHYT is also set to zero."
 SuggestedRemedy
 "Moreover, bits PHD.OAM.MERT and PHD.OAM.PHYT are also set to zero."
 Proposed Response Response Status **W**
 PROPOSED ACCEPT.

Cl 114 SC 114.7.4.3 P109 L46 # 46
 Tapia, Pablo KDPOF
 Comment Type **E** Comment Status **D**
 "Once the transmission and reception of PHD blocks is reliable"
 SuggestedRemedy
 "Once the transmission and reception of PHD blocks are reliable"
 Proposed Response Response Status **W**
 PROPOSED ACCEPT.

Cl 114 SC 114.8 P110 L53 # 47
 Tapia, Pablo KDPOF
 Comment Type **E** Comment Status **D**
 "Loopback modes support a MAC transmit-to-self that includes a selected portion of the bidirectional 1000BASE-H link."
 SuggestedRemedy
 "Loopback modes support a MAC transmit-to-itself that includes a selected portion of the bidirectional 1000BASE-H link."
 Proposed Response Response Status **W**
 PROPOSED ACCEPT.

Cl 114 SC 114.11 P113 L12 # 48
 Tapia, Pablo KDPOF
 Comment Type **T** Comment Status **D**
 The Delay constraint is specified as the sum of Tx and Rx delays. This makes hard to determine if a given Tx (or Rx) implementation is compliant with the specification, because although it honors the delay constraint with a complementary Rx (or Tx) implementation it might violate the constraint with different Rx (or Tx) implementations.
 SuggestedRemedy
 Specify a delay constraint for Tx and a delay constraint for Rx.
 Proposed Response Response Status **W**
 PROPOSED ACCEPT IN PRINCIPLE.
 Specify transmit delay and sum of delays. Numbers to be obtained/verified by RTL simulations.
 In P 113, from line 19 to 23, the change to:
 "The delay for the transmit path of a 1000BASE-H PHY shall be less than TBD bit-times. The sum of the transmit and receive data delays shall not exceed 6000 bit-times. Transmit data delay is measured from the input of a given unit of data at the GMII to the presentation of the same unit of data by the PHY to the MDI. Receive data delay is measured 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 GMII."
 Eliminate NOTE 1.

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Cl 45 SC 45.2.3.48 P26 L17 # 49
 Carlos, Sánchez de La Lama KDPOF

Comment Type T Comment Status D

In Table 45-161, bit 3.500.15 is R/W, but meaning is given only for write in the "1" value case.

SuggestedRemedy

Change description to:
 0 = OAM transmit registers available for a new message
 1 = Transmission of OAM message pending; write as "1" to request transmission

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 45 SC 45.2.3.54 P33 L18 # 50
 Carlos, Sánchez de La Lama KDPOF

Comment Type E Comment Status D

No need to include legend for R/W as there are no R/W bits Table 45-167.

SuggestedRemedy

Remove R/W legend.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 114 SC 114.2.4.3.3 P55 L44 # 51
 Carlos, Sánchez de La Lama KDPOF

Comment Type E Comment Status D

Confusing redaction: "The reset state of the counter is zero at the beginning of each codeword encoding. Since the counter is reset for each set of kQAM bits, it always starts at zero for each new codeword entering the mapper."

If the reset state is zero at the beginning of each codeword encoding, no need to clarify further.

SuggestedRemedy

Change those sentences to: "The reset state of the counter is zero. Since the counter is reset for each set of kQAM bits, it always starts at zero for each new codeword entering the mapper."

In any case, style should be consistent with page 56, line 39, so if changed here should be changed there as well.

Proposed Response Response Status W

PROPOSED ACCEPT.

Replace on both with proposed text, P55 L44 and P56 L39.

Cl 114 SC 114.3.4.2 P78 L16 # 52
 Mendo, Carmen KDPOF

Comment Type T Comment Status D

Should mention what happens in LPI mode.
 From 114.4.2 it seems that during LPI the link margin info can be still updated using only the refresh periods: is this correct? Does the spec need to justify that this is sufficient for a good estimate?

SuggestedRemedy

Specify PHY quality assessment in LPI operation.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

It is correct that the PHY quality can be still updated in LPI by using the signal received during the refresh periods. The draft does not justify. The work presented in the task force is the justification behind the specification.

Add after equation 114-21:

"In LPI mode of operation, the PHY may use the reception of S2 pilot sub-blocks contained in the refresh periods to estimate the noise variance at the PAM16 decoder decision points and keep updated link margin and the state variable loc_rcvr_status."

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Cl 114 SC 114.7.4.2 P109 L17 # 53
Mendo, Carmen KDPOF

Comment Type T Comment Status D

In Figure 114-52, conditions for transitions from state OAMTX_PHYT_WAIT are not exact.

SuggestedRemedy

No misinterpretation seems possible, but it would be more clear if:
- transition from OAMTX_PHYT_WAIT to OAMTX_NEWMSG_WAIT was labeled "new_rxphd_event=TRUE * hdr_crc16_status=OK * rxphd_phyt = txphd_msgt"
- transition from OAMTX_PHYT_WAIT to itself was labeled "new_rxphd_event=TRUE * hdr_crc16_status=OK * rxphd_phyt != txphd_msgt"

Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 114 SC 114.8 P111 L10 # 54
Mendo, Carmen KDPOF

Comment Type T Comment Status D

Clarify what happens on the TX paths in "PCS GMII level loopback" and "PCS PMD interface level loopback"?

SuggestedRemedy

Is this up to the implementer? It is specified for the line loopback...

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.

P111, L5, add after full stop:
"Operations of PCS, PMA and PMD sublayers are not specified in this loopback mode."

P111, L9, replace with:
"... completely exercising the PCS and PMA as in normal operation, although the PCS receiver ignores signals from the PMD receive function. PMD operation is not specified in this loopback mode."

Cl 114 SC 114.3.1 P64 L32 # 55
Mendo, Carmen KDPOF

Comment Type E Comment Status D

Typo: ".. for transmit and received OAM ..".

SuggestedRemedy

For consistency, should read: ".. for transmit and receive OAM ..".
Also on line 37 should read: ".. transmit and receive PHD ..".

Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 114 SC 114.3.2.1 P67 L9 # 56
Mendo, Carmen KDPOF

Comment Type E Comment Status D

Expression: ".. not correct determined by CRC16 ..".

SuggestedRemedy

Suggest: ".. not correct according to CRC16 ..".

Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 114 SC 114.3.2.3 P70 L36 # 57
Mendo, Carmen KDPOF

Comment Type E Comment Status D

Text format: avoid odd hyphenation of variables.

SuggestedRemedy

Should keep variable names in one line.
Also on p.71, l.42.

Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 114 SC 114.5.1.5.1 P87 L38 # 58
Mendo, Carmen KDPOF

Comment Type E Comment Status D

Typo: ".. then the PHY indicate link_status=FAIL."

SuggestedRemedy

Should read: "indicates" or "shall indicate".

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.

Replace with "... then the PHY indicates link_status = FAIL."

"shall" is reserved for PICS items.

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Cl 45 SC 45.2.3.50.2 P29 L23 # 59
Mendo, Carmen KDPOF
Comment Type E Comment Status D
Typo: Missing close-parentheses at the end of the line.
SuggestedRemedy
Close paranthesis.
Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 45 SC 45.2.3.51.3 P30 L54 # 60
Mendo, Carmen KDPOF
Comment Type T Comment Status D
No mention to the bit being LL.
SuggestedRemedy
Detail the LL behavior, eg: This bit has latching-low behavior. After it is read, it is updated to the current value of the link_status variable.
Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Replace with:
"This bit reflects the value of the state variable link_status as determined by the link status monitor state diagrams (see 114.3.2.1). This bit has latching-low behavior. After it is read, it is updated to the current value of the link_status variable."

Cl 114 SC 114.2.4.3.1 P53 L42 # 61
Mendo, Carmen KDPOF
Comment Type E Comment Status D
Typo: ".. to a MLCC codeword ..".
SuggestedRemedy
Should read: ".. to an MLCC codeword .." (consistent with other occurrences and more usual).
Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 114 SC 114.2.4.4 P62 L1 # 62
Mendo, Carmen KDPOF
Comment Type T Comment Status D
The interpretation of the formulas to get to the final expression and range for y (output to THP) is confusing.
SuggestedRemedy
Should clarify the interpretation / handling of intermediate step u, either in Figure 114-32 or in the text.
Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.

Replace P61 P48 with:
"The second part, illustrated in Figure 114–32, uses the signals v and s to scramble the PAM16 symbols, x, according to the following set of equations. The scrambled sequence is denoted with y. The scrambling process operates at symbol rate, so that a new sample of v, s and y is generated per input sample x.

$$u = v + s*x$$

$$y = \text{mod}(u + 16, 32) - 16$$

Also modify Figure 114-32 to
+ Eliminate equation
+ Add variable x at the input

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CI 114 SC 5.4 P L # 63
 Stassar, Peter Huawei Technologies

Comment Type **E** Comment Status **D**
 Link segment is a "classical" term. Need to correlate it to the recently (in optical clauses) introduced term "channel". Perhaps it should be done as in Clauses 87 and 88, where it is stated "The fiber optic cabling model (channel) defined here is the same as a simplex fiber optic link segment. The term channel is used here for consistency with generic cabling standards."

SuggestedRemedy

Proposed Response Response Status **W**
 PROPOSED ACCEPT IN PRINCIPLE.

Change heading 114.5.4 "Link segment characteristics" to "Characteristics of the fiber optic cabling (channel)"

P93, L25 to 26, change:
 "The PMD subject to this clause is for a plastic optical fiber cable with a multimode optical fiber IEC 60793-2-40 sub-category A4a.2. The cable is duplex."
 to:
 "The fiber optic cable requirements are satisfied by cables containing IEC 60793-2-40 sub-category A4a.2 multimode plastic optical fibers. A connection is established by two fibers, one for each direction (see 114.1.5). The fiber optic cabling model (channel) defined here is the same as a simplex fiber optic link segment. The term channel is used here for consistency with generic cabling standards."

Replace all "link segment" occurrences with "fiber optic channel" in C/114.

CI 114 SC 5.4.3 P L # 64
 Stassar, Peter Huawei Technologies

Comment Type **E** Comment Status **D**
 Same as comment to Clause 114.5.4.1

SuggestedRemedy

Proposed Response Response Status **W**
 PROPOSED ACCEPT.

See comment #69

CI 114 SC 5.4 P L # 65
 Stassar, Peter Huawei Technologies

Comment Type **ER** Comment Status **D**
 The sentences "The PMD subject to this clause is for a plastic optical fiber cable with a multimode optical fiber IEC 60793-2-40 sub-category A4a.2. The cable is duplex." should be phrased differently.
 Need to be changed to (or similar):
 "The fiber optic cable requirements are satisfied by cables containing IEC 60793-2-40 sub-category A4a.2 (multimode plastic optical fiber). A connection is established by two fibers, one for each direction.". Please check 88.11.1 as a reference.

SuggestedRemedy

Proposed Response Response Status **W**
 PROPOSED ACCEPT.

See comment #63

CI 114 SC 5.5.3 P L # 66
 Stassar, Peter Huawei Technologies

Comment Type **ER** Comment Status **D**
 "Under these conditions, a 1000BASE-RHx PHY shall be able to provide a BER less than 10⁻¹²", remove the words "be able to".

SuggestedRemedy

Proposed Response Response Status **W**
 PROPOSED ACCEPT.

CI 114 SC 5.6.7 P L # 67
 Stassar, Peter Huawei Technologies

Comment Type **ER** Comment Status **D**
 Modify "Based on the above definitions, the positive and negative output droops" to "Based on the above definitions, the positive output droop DO+ and the negative output droop DO-"

SuggestedRemedy

Proposed Response Response Status **W**
 PROPOSED ACCEPT.

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Cl 114 SC 5.2.2 P L # 68
 Stassar, Peter Huawei Technologies

Comment Type **TR** Comment Status **D**
 "Assuming that implementation of Equation (114-25) ideally linear"
 This part of the sentence should be removed.
 The definition of ER is independent of whether the transmitter is assumed linear or not and the AOP is a measured value, not a calculated value. If the transmitter is not sufficiently linear then the calculated AOP is different from the measured AOP. Therefore ER and AOP are determined by measurement and not by formulas 114-26 and 114-27

SuggestedRemedy

Proposed Response Response Status **W**
 PROPOSED ACCEPT IN PRINCIPLE.

Fully agree. Equations 114-26 and 114-27 were provided for the case of linear transfer function. Finally, this paragraph is producing confusion.

Edition actions:
 Delete P89, lines 21 to 33.

P101, L25 to 27, change:
 "ER shall be calculated from the measurements of the maximum optical power (P1) and the minimum optical power (P0) as defined in 114.5.2.2, where P1 and P0 are measured in mW."
 to:
 "ER shall be calculated from the measurements of the maximum optical power (P1) and the minimum optical power (P0) per equation 114-xx, where P1 and P0 are measured in mW.

ER = 10*log10(P1/P0) (114-xx)"

Cl 114 SC 5.4.1 P L # 69
 Stassar, Peter Huawei Technologies

Comment Type **TR** Comment Status **D**
 This intent of this clause is not clear. The figure clearly isn't "insertion loss", but probably intended to be "link segment transfer characteristics". What is the source of this information? How is it established that individual links meet this requirement? By specification or measurement? Is this frequency response not launch dependent? Measurement would be required to be much better than 1/100 of a dB at 8 MHz.

SuggestedRemedy

Proposed Response Response Status **W**
 PROPOSED ACCEPT IN PRINCIPLE.

Information is obtained by experimental measurements using several samples of a transmitter that meets the MPD specs, several samples of each link segment type, high speed low noise opto-electrical converter and VNA with averaging enabled. The throw calibration is carried out with just 30 centimeters of POF to eliminate the response of optoelectronics. The IL upper bound limits in the draft corresponds to an envelope of the worst case obtained responses.
 Further measurements are being carried out by different individuals participating in the TF for MPD per EAF and channel responses.

Actions:
 - To define the measurement resolution
 - Modify tables 114-5, 114-6 and 114-7 accordingly.
 - Change term "insertion loss upper bound limit" to "frequency response lower bound limit" in text, figures and table

Cl 114 SC 5.4.2 P L # 70
 Stassar, Peter Huawei Technologies

Comment Type **TR** Comment Status **D**
 Same as to Clause 114.5.4.1

SuggestedRemedy

Proposed Response Response Status **W**
 PROPOSED ACCEPT.

See comment #69.

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Cl 114 SC 5.5.1 P L # 71
 Stassar, Peter Huawei Technologies

Comment Type TR Comment Status D

"A 1000BASE-RHx transmitter shall meet the specifications at TP2 defined in Table 114-8 and the mode power distribution (MPD) shall be higher than the lower bound limit defined in Table 114-9 per measurement techniques defined in 114.5.6. Specification for transmit MPD is illustrated in Figure 114-51." Are the specified launching conditions indeed 1m after the transmitter?

It is not possible to judge the completeness of this specification before the information indicated in the editor's note in Clause 114.5.6.8 has become available.

SuggestedRemedy

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Yes, MPD is specified in TP2, 1m after transmitter.

See perezaranda_3bv_3_1115.m for the code that compute HD2, HD3 and RPD, intended to be included in 802.3bv D1.4.

Editor actions:

- Include in the 114.5.6.8 the code of perezaranda_3bv_3_1115.m and delete editor's note.
- In Table 114-8, replace the TBDs as:
 Max HD2 = -21 dB
 Max HD3 = -27 dB
 Max RPD = -40 dB

Cl 114 SC 5.5.3 P L # 72
 Stassar, Peter Huawei Technologies

Comment Type TR Comment Status D

It is not clear/evident why the average optical power for reliable link establishment for receiver RHC is -17dBm for segment type II and -18.5dBm for segment type III. Is this a result of link segments with different bandwidth? One would expect that a more narrow type III would give a value higher than for type II and not lower

SuggestedRemedy

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Yes, it is because link segments with different bandwidths.

The confusion is produced by an editorial error already reported in comment #79. The frequency responses for type I and type III are swapped (tables and figures).

Cl 114 SC 114.5.5 P97 L6 # 73
 Takahashi, Satoshi POF promotion

Comment Type E Comment Status D

"Receptical" is not generally used for this meaning.

SuggestedRemedy

Change "receptical" to "receptacle"

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 114 SC 114.5.5 P97 L11 # 74
 Takahashi, Satoshi POF promotion

Comment Type E Comment Status D

"Receptical" is not generally used for this meaning.

SuggestedRemedy

Change "receptical" to "receptacle"

Proposed Response Response Status W

PROPOSED ACCEPT.

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CI 114 SC 114.12.1 P114 L13 # 75
Takahashi, Satoshi POF promotion

Comment Type E Comment Status D

"Clause 21" is written in green.

SuggestedRemedy

Write it in black. Same for line 44.

Proposed Response Response Status W

PROPOSED REJECT.

Green is for external reference

CI 114 SC 114.5.5 P97 L3 # 76
Takahashi, Satoshi POF promotion

Comment Type E Comment Status D

"Receptical" is not generally used for this meaning.

SuggestedRemedy

Change "receptical" to "receptacle"

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 114 SC 114.5.5.1 P97 L22 # 77
Takahashi, Satoshi POF promotion

Comment Type T Comment Status D

Temperature shall be specified because center wavelength depends on the ambient temperature.

SuggestedRemedy

"... the specifications at TP2 defined in Table 114-8 for all the temperature range defined in Table 114-14 and ..."

Proposed Response Response Status W

PROPOSED REJECT.

It is up to the implementer to declare that an specific 1000BASE-RH implementation is compliant with one of the three temperature classes. For example, an implementer can produce a 1000BASE-RHC implementation fulfilling the TP2 specs and being compliant with temperature class "Extended I". Other implementation can be Extended A class compliant.

CI 114 SC 114.5.5.1 P99 L # 78
Takahashi, Satoshi POF promotion

Comment Type T Comment Status D

Angle interval in Table 114-9 seems to be too narrow.

SuggestedRemedy

Set coarse angle interval, e.g. 5 degree.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

If 5 degrees is used and lower bound is to be defined as a piecewise function, the specification becomes more restrictive in the range of 0 to 10 degrees, and less restrictive between 25 and 35 degrees. Due to the morphology of EAF, uniform steps in the angle axis seem not to be the more suitable option.

The TF needs to work on the measurement resolution of EAF; 3 decimal digits seem to be no realistic. As a function of EAF resolution, the angle points should be defined.

CI 114 SC 114.5.4.1 P94 L # 79
Takahashi, Satoshi POF promotion

Comment Type TR Comment Status D

Figure 114-48 and table 114-5 must be for segment type III (15m), Figure 114-50 and table 114-7 are for segment type I (50m).

SuggestedRemedy

Swap Figure 114-48 with 114-50.

Swap table 114-5 with 114-7.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 00 SC 0 P L # 80
Grow, Robert RMG Consulting

Comment Type E Comment Status D

P802.3 has been approved.

SuggestedRemedy

If IEEE Std 802.3-2015 is published before the next draft, update instances of 802.3-201x and 802.3-20xx with 802.3-2015. (Probably just headers and frontmatter.)

Proposed Response Response Status W

PROPOSED ACCEPT.

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Cl 01 SC 1.4 P20 L40 # 81
 Grow, Robert RMG Consulting

Comment Type E Comment Status D

Looks like we failed to include definitions of our port types.

SuggestedRemedy

Add:
 1.4.x 1000BASE-H: An IEEE 802.3 physical coding sublayer for 1000 Mb/s serial operation.
 (See IEEE Std 802.3, Clause 114.)

1.4.x 1000BASE-RHA: IEEE 802.3 PMD specifications for 1000 Mb/s serial transmission using red wavelength with optical budget tailored for home and other consumer application requirements. (See IEEE Std 802.3, Clause 114.)

1.4.x 1000BASE-RHB: IEEE 802.3 PMD specifications for 1000 Mb/s serial transmission using red wavelength with optical budget tailored for industrial application requirements. (See IEEE Std 802.3, Clause 114.)

1.4.x 1000BASE-RHC: IEEE 802.3 PMD specifications for 1000 Mb/s serial transmission using red wavelength with optical budget tailored for automotive application requirements. (See IEEE Std 802.3, Clause 114.)

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

"serial" term does not seem to have meaning in this Physical Layer.
 1000BASE-H also includes PMA sublayer.

Add:
 1.4.x 1000BASE-H: IEEE 802.3 PCS and PMA sublayers for 1000 Mb/s Ethernet using duplex plastic optical fiber cabling. (See IEEE Std 802.3, Clause 114.)

1.4.x 1000BASE-RHA: IEEE 802.3 PMD specifications for 1000 Mb/s Ethernet using duplex plastic optical fiber cabling and red wavelength with optical budget tailored for home and other consumer application requirements. (See IEEE Std 802.3, Clause 114.)

1.4.x 1000BASE-RHB: IEEE 802.3 PMD specifications for 1000 Mb/s Ethernet using duplex plastic optical fiber cabling and red wavelength with optical budget tailored for industrial application requirements. (See IEEE Std 802.3, Clause 114.)

1.4.x 1000BASE-RHC: IEEE 802.3 PMD specifications for 1000 Mb/s Ethernet using duplex plastic optical fiber cabling and red wavelength with optical budget tailored for automotive application requirements. (See IEEE Std 802.3, Clause 114.)

Cl 01 SC 1.3 P19 L18 # 82
 Grow, Robert RMG Consulting

Comment Type E Comment Status D

P802.3bw has been approved by the SASB.

SuggestedRemedy

Update editing instruction and delete from list references included in IEEE Std 802.3bw-201x. The following differences should be retained and changes coordinated with P802.3bp:
 IEC CISPR 25:2009 (bw has an older reference)
 IEC 62215-3 (not included in bw)

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 01 SC 1.4 P21 L23 # 83
 Grow, Robert RMG Consulting

Comment Type T Comment Status D

I note that IEEE Std 802.3bw includes a number of changes to add they PHY type to appropriate definitions, but we haven't

SuggestedRemedy

Add test for to describe 1000BASE-RH PHY types to:
 1.4.193 End-of-Stream Delimiter (ESD):
 1.4.326 Physical Coding Sublayer (PCS):
 1.4.327 Physical Layer entity (PHY):
 1.4.328 Physical Medium Attachment (PMA) sublayer:
 1.4.353 receiver training:
 1.4.390 Start-of-Stream Delimiter (SSD):
 1.4.393 symbol:
 1.4.394 symbol period:
 1.4.395 symbol rate (SR):

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Some terms do not apply to 1000BASE-RH: ESD, SSD.

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Cl 30 SC 30.5.1.1.2 P23 L29 # 84
 Grow, Robert RMG Consulting

Comment Type **TR** Comment Status **D**

With the addition of multiple PHY types, we need to update some of the clause 30 attributes and clause 45 specifications.

SuggestedRemedy

Page 23, line 29, replace with
 1000BASE-RHA Plastic optical fiber PHY as specified in Clause 114.
 1000BASE-RHB Plastic optical fiber PHY as specified in Clause 114.
 1000BASE-RHC Plastic optical fiber PHY as specified in Clause 114.

Page 23, line 39, should be "for a 1000BASE-RHx PHY,".

Page 25, line 19, need three listings.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

Cl 114 SC 114.1.3 P37 L51 # 85
 Dawe, Piers Mellanox

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

As this PHY doesn't do CSMA/CD, only full duplex, but does have an EEE option,

SuggestedRemedy

Should this refer to Annex 4A rather than Clause 4?

Proposed Response Response Status **W**

PROPOSED ACCEPT.

As stated in Annex 4A: "This annex stands alone and does not rely on information within Clause 4 to be implemented."

Editor action: replace text of 114.1.3 with:

"The relationship between a 1000BASE-H PHY, the ISO Open Systems Interconnection (OSI) Reference Model, and the IEEE 802.3 Ethernet Model is shown in Figure 114-1. The physical layer connects one Annex 4A Media Access Control (MAC) to the medium. This clause specifies the Physical Coding Sublayer (PCS), Physical Medium Attachment (PMA) and Physical Medium Dependent (PMD) components of the physical layer device (PHY)."

In Figure 114-1, replace "CSMA/CD" with "Ethernet". Change title of figure 114-1 to: "Relationship of 1000BASE-RHx PHY to the ISO/IEC OSI reference model and the IEEE 802.3 Ethernet Model"

Cl 114 SC 114.1.3 P38 L3 # 86
 Dawe, Piers Mellanox

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

Obsolete label.

SuggestedRemedy

Change LAN CSMA/CD LAYERS to ETHERNET LAYERS
 Scrub the draft for any other obsolete features.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

See comment #85

Cl 114 SC 114.5.6.8 P102 L42 # 87
 Dawe, Piers Mellanox

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

When you have the captured waveform you can find AOP, rise and fall time, ER and transmitter overshoot from it and avoid several separate measurements with very untypical patterns.

SuggestedRemedy

Explain how to use this measurement to find AOP, rise and fall time, ER and transmitter overshoot. Make test mode 3 optional.

Proposed Response Response Status **W**

PROPOSED REJECT.

It is true that test mode 6 would allow the measurement of many properties of the transmit signal like the ones commented.

However, test mode 3 allows a more direct measurement of ER, rise and fall times, and overshoot using a simpler laboratory setup and the specification is clearer. The implementation of test mode 3 is very simple, therefore the impact on the silicon complexity is zero.

It is up to the implementer using the test mode 6 and develop a more complex Matlab script to extract in a shot all the measurements.

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Cl 01 SC 1.4 P21 L1 # 88
 Dawe, Piers Mellanox

Comment Type TR Comment Status D

This "definition" of optical modulation amplitude is incorrect (read any of the clauses that use OMA), there is already a definition for OMA at 1.4.303, and this draft does not use the term anyway.

SuggestedRemedy

Delete it.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 114 SC 114.5.6.1 P100 L42 # 89
 Dawe, Piers Mellanox

Comment Type TR Comment Status D

This isn't a test spec - understanding that, we don't write "X shall be measured" any more (last done in Clause 72) because there is no requirement to measure - just to comply with the spec for X (802.3 used to have a test spec but it was withdrawn - customers and suppliers can negotiate test strategies outside of 802.3 if they wish).

See e.g.

58.7.2 Wavelength and spectral width measurements

The wavelength and spectral width (RMS) shall meet specifications according to TIA-455-127-A, under modulated conditions using a valid 100BASE-X signal.

or

95.8.2 Center wavelength and spectral width

The center wavelength and RMS spectral width of each optical lane shall be within the range given in Table 95-6 if measured per TIA/EIA-455-127-A or IEC 61280-1-3. The lane under test is modulated using one of the test patterns specified in Table 95-10.

SuggestedRemedy

Revise all five "shall be measured" so that the requirement applies to the thing to be measured, not to the action of measuring or testing.

Similarly for "shall be tested" in 114.10.4.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Modify text as indicated. PICS accordingly.

P100, L42:

"The center wavelength shall meet the specifications according to IEC 61280-1-3, under normal (non-test) mode conditions using a valid 1000BASE-H transmit signal as specified in 114.2.5.1. [...]"

P100, L49:

"The spectral width (RMS) shall meet the specifications according to IEC 61280-1-3, using same test conditions as for center wavelength measurement (see 114.5.6.1)."

P101, L3:

"The AOP shall meet the specifications at TP2 and TP3 measured with a large area photo-detector able to couple all the output optical power from the optical fiber."

P101, L12:

"The transmit rise and fall time shall meet the specifications according to the following measurements procedure. [...]"

P101, L25:

"The Extinction Ratio (ER) shall meet the specifications according to the following measurements procedure. ER is obtained by measurement in the time domain. ER is calculated from the measurements of the maximum optical power (P1) and the minimum

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optical power (P0) as defined in 114.5.2.2, where P1 and P0 are measured in mW. [...]"

P101, L38:
"The transmit overshoot shall meet the specifications according to the following measurements procedure. [...]"

P102, L3:
"The transmitter output droop shall meet the specifications according to the following measurements procedure. The transmitter output droop is specified in terms of extinction ratio. Output droop is calculated relative to ER, therefore measurement defined in 114.5.6.5 has to be previously carried out to serve as reference. Let denote this reference extinction ratio as ER0."

P102, L28:
"These three parameters shall meet the specifications according to the following procedure. [...]"

P112, L39:
"A 1000BASE-RHx PHY shall meet the EMC requirements according to IEC CISPR 25 test methods defined to measure the PHY's EMC performance in terms of RF immunity and RF emissions."

Cl 114 SC 114.5.5.3 P99 L21 # 90
Dawe, Piers Mellanox

Comment Type TR Comment Status D

This still needs a more specific receiver performance spec - just saying it should work with compliant transmitter and link segment is too open to interpretation. Especially as the link segment seems to exclude losses from inline connections, and the effect of reflections is not clear.

SuggestedRemedy

Add stressed sensitivity specs and define an example way for testing performance at full stress. E.g. use POF of the length needed to create the minimum bandwidth from minimally compliant (slow) Tx and link segment, adjust test Tx power to receive power after minimum product Tx power and maximum link segment and connection losses. Use e.g. sinusoidal interferer at test Tx to emulate effect of reflections if necessary. Use jitter source at test Tx if necessary.

Proposed Response Response Status W

PROPOSED REJECT.

Text from P99, L52 to P100, L7 includes the specification of stressed sensitivity; that is the case of min value of AOP in TP3.

Worst case channel frequency response of POF is provided in 114.5.4 for the different link segment types. As stated in 114.5.4, the inline connections do not modify the frequency response of link segment. Regarding to the transmitter, 114.5.5.1 specifies worst-case. Based on those specifications (114.5.4 and 114.5.5.1), a worst case TX and channel are defined and it is up to the implementer the development of a receiver able to meet the specifications of 114.5.5.3.

Cl 114 SC 114.5.4 P93 L40 # 91
Dawe, Piers Mellanox

Comment Type TR Comment Status D

I don't think defining link segment attenuation without the insertion loss produced by inline connections is workable.

SuggestedRemedy

Either define link segment attenuation in the usual way, including inline connections, or forbid inline connections. If you allow them, you probably want some maximum loss for all the inline connections in a link segment, because if the connection loss is very high, the mode profile is probably not what you want.

Proposed Response Response Status W

PROPOSED REJECT.

As stated in P93, L45, "Any link segment including inline connections meets the frequency response requirement defined for each type.". This implies either the mode power distribution is preserved or high modes are relatively more attenuated in the inline connection.

Maximum attenuation permitted to a link segment including inline connections is AOPmin(TP2) - AOPmin(TP3), which is already provided.

Maximum attenuation of link segment without inline connection is specified in the draft because, together with the DC normalized IL, is the specification of the fiber optic channel.

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Cl 114 SC 114.10.4 P112 L38 # 92
 Dawe, Piers Mellanox

Comment Type TR Comment Status D

"shall ..., or as agreed to between the customer and the supplier" is unacceptable, because this is a standard, not a procurement spec. There is no concept of customer or supplier, and no-one has the authority to vary the spec.
 Many other clauses say e.g.
 95.9.5 Electromagnetic emission
 A system integrating a 100GBASE-SR4 PMD shall comply with applicable local and national codes for the limitation of electromagnetic interference.
 Another automotive-oriented clause says:
 96.9.2.2 Electromagnetic Compatibility
 A system integrating the 100BASE-T1 PHY shall comply with all applicable local and national codes. In addition, the system may need to comply with more stringent requirements as agreed upon between customer and supplier, for the limitation of electromagnetic interference.
 But this seems confused: the first sentence is wider than the subject of the subclause.

SuggestedRemedy

Change to:
 A system integrating the 1000BASE-RHx PHY shall comply with all applicable local and national codes for the limitation of electromagnetic interference. In addition, the system may need to comply with more stringent requirements as agreed upon between customer and supplier.

Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 114 SC 114.5.6.9 P103 L10 # 93
 Dawe, Piers Mellanox

Comment Type TR Comment Status D

Need to define the jitter corner frequency: what jitter frequency is low enough that the receiver is expected to track it? See any recent optical clause, e.g. 95.8.8.3 J2 and J4 Jitter, "J4 Jitter is defined using a clock recovery unit as in 95.8.7" which refers indirectly to 86.8.3.2:
 A clock recovery unit (CRU) is used to trigger the oscilloscope for mask measurements, as shown in Figure 52-9. It has a high-frequency corner bandwidth of 4 MHz and a slope of -20 dB/decade. The CRU tracks acceptable levels of low-frequency jitter and wander.

SuggestedRemedy

Add a similar clock recovery unit, or if a description with a common reference clock is preferred, state what low frequencies should be filtered out of the measurement.

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

P103, L9 to 15, replace with:
 "The transmitter timing jitter shall meet the specifications according to the following measurement procedure.

The PHY is configured in test mode 2. Tests are done using an optical to electrical converter connected to TP2 and a general-purpose oscilloscope with capture capability.

The RMS (Root Mean Square) jitter of the crossing events of the PMD transmit signal with the average optical power is measured relative to the corresponding edges of an unjittered clock reference with a frequency of 162.5 MHz (one half the symbol rate) .

Jitter is measured over an interval of 2 ms ± 10%. The measurement device has to provide a high-frequency low-pass corner of at least 32.5 MHz with slope of -20 dB/decade and a low-frequency high-pass corner of maximum 1 kHz with slope of 20dB/decade. Un-jittered reference is a constant clock frequency extracted from each record of captured output on TP2. The un-jittered reference is based on linear regression of frequency and phase that produces minimum Time Interval Error."

Replace in Table 114-8 max value for Timing jitter with 10 ps. That is a typo from early versions of draft.

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Cl 114 SC 114.5.5.4 P100 L11 # 94
 Dawe, Piers Mellanox

Comment Type TR Comment Status D

This heading says "Worst-case 1000BASE-RHx link power budget and penalties" but unlike nearly all other power budgets in optical clauses - it's just an optical loss budget, does not include any penalties such as ISI from link segment bandwidth, RIN, reflections. See 89.6.4 Comparison of power budget methodology - that clause includes some penalties in its power budget.

A power budget can be written for an equalising system too.

SuggestedRemedy

Either declare what the penalties are (you know the worst bandwidth, precoding method, FEC code and so on), or change the name to e.g. "optical loss budget".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change heading to "Worst-case 1000BASE-RHx link power budget (informative)"

Cl 114 SC 114.10.1 P111 L52 # 95
 Dawe, Piers Mellanox

Comment Type TR Comment Status D

Temperature isn't an interoperability issue and is usually not specified by 802.3 but by other specs: e.g.

95.9.6 Temperature, humidity, and handling

The optical link is expected to operate over a reasonable range of environmental conditions related to temperature, humidity, and physical handling (such as shock and vibration).

Specific requirements and values for these parameters are considered to be beyond the scope of this standard.

SuggestedRemedy

Change:

1000BASE-RHx implementations shall be declared as compliant over one of three complete ranges as specified in Table 114–14.

to:

The optical link is expected to operate over a reasonable range of environmental conditions related to temperature, humidity, and physical handling appropriate to the intended environment (e.g., automotive, industrial or home networking). A 1000BASE-RHx implementation may be declared as compliant over one of the three complete ranges specified in Table 114–14.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

It is true that temperaure is not an interoperability issue. The intention of this sub-clause was the indication (labelling) of the temperature range where an implementation is compliant with the 1000BASE-RHx specifications.

Change:

"1000BASE-RHx implementations shall be declared as compliant over one of three complete ranges as specified in Table 114–14."

to:

"The optical link is expected to operate over a reasonable range of environmental conditions related to temperature, humidity, and physical handling appropriate to the intended environment (e.g., automotive, industrial or home networking). A compliant 1000BASE-RHx PHY implementation shall clearly indicate the operating temperature range of Table 114-14 over which their compliance is ensured."

P802.3bv D1.3 Gigabit Ethernet Over Plastic Optical Fiber 4th Task Force review comments

Cl 01 SC 1.4 P20 L40 # 96
 Dawe, Piers Mellanox

Comment Type E Comment Status D
 These are people's names. One seems to have an extra letter. Inconsistent punctuation.

SuggestedRemedy
 Change bose, ray-chaudhurim hocquenghem to:
 Bose, Ray-Chaudhuri, Hocquenghem

Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 114 SC 114.10.3 P112 L19 # 97
 Dawe, Piers Mellanox

Comment Type E Comment Status D
 "Environmental safety" - what's that?

SuggestedRemedy
 Change to "Environment".

Proposed Response Response Status W
 PROPOSED REJECT.

It seems that "Environmental safety" is the correct term, because both 100BASE-T1 and 100BASE-T1 use it and 100BASE-T1 was approved in sponsor ballot one week ago.

Cl 114 SC 114.1.2 P37 L46 # 98
 Dawe, Piers Mellanox

Comment Type ER Comment Status D
 I do not want to pay CHF158 for ISO 80000-2 just so the clause can use gimmicky, unnecessary notation that I don't want to read. It doesn't work - when the reader reads the gimmick he sees a typo, doesn't know that ISO 80000-2 explains it.

SuggestedRemedy
 Delete reference to ISO 80000-2 here and in 1.3. Don't use arcane notation. Instead of [a, b), just write $a \leq x < b$. Define roundup and rounddown rather than using graphics that aren't even characters that I could select and search for.

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Delete reference to ISO 80000-2 in P37,L46 and in 1.3.

In all the text, replace rounding down operator by "floor(-)" and replace rounding up operator by "ceil(-)". Also in equations and figures.

Change P50, L22, to:
 "and floor(a) denotes the greatest integer less than or equal to the real number a."

Change P56, L1, to:
 "where ceil(a) denotes the least integer greater than or equal to the real number a. Both binary substreams ..."

P62, L31, change:
 "The THP processed symbols, which are uniformly distributed in the region [-16, 16), are power scaled prior to transmission."
 to:
 "The THP processed symbols, which can take any value in the interval $-16 \leq y(m) < 16$, are power scaled prior to transmission."

Eliminate from Figure 114-33 "[-16, 16)" and "[-1, 1)". Add " $-16 \leq y(m) < 16$ ".

P74, L28 and L33, and P75, L2 and L11, change:
 "real numbers that take values in the interval [-2, 2)"
 to:
 "real numbers that take values in the right half-open interval from -2 included to 2 excluded"

P802.3bv D1.3 Gigabit Ethernet Over Plastic Optical Fiber 4th Task Force review comments

Cl 114 SC 114.1.6 P39 L19 # 99
 Dawe, Piers Mellanox

Comment Type ER Comment Status D

Gratuitous capitals. Text in figures, like anywhere else except layer diagrams, should be in normal mixed upper and lower case. This is a block diagram not a layer diagram.

SuggestedRemedy

Change PCS TRANSMIT, PMD TRANSMIT, PMD RECEIVE, PHY CONTROL, LINK MONITOR, PHD MONITOR, ADAPTIVE EQ ESTIMATOR, ADAPTIVE THP PROTOCOL, CLOCK RECOVERY, PHY QUALITY MONITOR, PCS RECEIVE, EQUALIZER to PCS transmit, PMD transmit, PMD receive, PHY control, Link monitor, PHD monitor, Adaptive equalization estimator, Adaptive THP protocol, Clock recovery, PHY quality monitor, PCS receive, Equalizer.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 114 SC 114.1.3 P37 L50 # 100
 Dawe, Piers Mellanox

Comment Type T Comment Status D

Obsolete terminology: the phrase "IEEE 802.3 CSMA/CD LAN Model" hasn't been used since Clause 40.

SuggestedRemedy

Update text and title of Figure 114-1 to match recent clauses.

Proposed Response Response Status W

PROPOSED ACCEPT.

See comment #85

Cl 114 SC 114.5.3 P90 L53 # 101
 Dawe, Piers Mellanox

Comment Type T Comment Status D

Some of the test mode patterns are quite complicated and would not be generated by a PMD. Also, the test modes may be controlled by the 1000BASE-H *PCS* control register. Other recent PHYs have the pattern generators in the PMA, but this PMA doesn't seem to do that sort of thing.

SuggestedRemedy

Move the test modes subclauses to the PCS section.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

The test modes were included in PMD subclause because specially test modes 2 to 6 are defined to validate a PMD implementatin according to the specifications.

However test mode 1 involves PCS and PMA, since it requires to establish the bidirectional link to run. Because of that, it seems more convenient to move test modes sub-clause just after EEE to become a new 114.5 instead of including them within PCS.

Cl 114 SC 114.5.4 P93 L23 # 102
 Dawe, Piers Mellanox

Comment Type T Comment Status D

There are normative PMD requirements before and after this subclause, which is confusing for the user when considering compliance.

SuggestedRemedy

Move the "Link segment characteristics" subclause to later, e.g. just before the MDI section as in other optical clauses.

Proposed Response Response Status W

PROPOSED ACCEPT.

P802.3bv D1.3 Gigabit Ethernet Over Plastic Optical Fiber 4th Task Force review comments

Cl 114 SC 114.3 P64 L1 # 103
 Dawe, Piers Mellanox

Comment Type T Comment Status D

Figure 114-3 shows a block called "PMA" but the PMD service interface connects directly to the PCS, and the "PMA" block is connected to the PCS, OAM and EEE blocks and nothing else. So it's not really a PMA.

SuggestedRemedy

Rearrange the subclause headings so that the PCS control and monitor functions are in the PCS. Suggest the THP function and its control could be in the PMA. Also, clock recovery is typically in the PMA.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Because THP only affects to the payload data path, but not to PHS and pilots, for sake of simplicity in the description it was more natural for the editors to include the THP function within PCS. However, because THP function depends on the medium response it seems more convenient to be in PMA.

However, PHY control, monitoring, etc. are typically included in the PMA.

Edition actions:

- + Move THP function to the beginning of PMA, declared as part of the PMA transmit function. THP function will be transparent to symbols belonging to PHS and pilots and only operative for payload in normal operation. THP will be transparent always in LPI.
- + After that, add an small sub-clause for PMA receive, including clock recovery, equalization.
- + Change in THP protocol the references to PCS receiver doing equalization functions to PMA receiver.
- + Change in PMD service primitives the references to PCS by PMA.
- + Move 114.2.5 Interface to the PMD from PCS to PMA.
- + Modify Figure 114-3 to be the PMA between PCS and PMD, including THP in PMA TX and Clock recovery and Eq in PMA RX.

Rearrange PICS accordingly.

Cl 114 SC 114.3.3 P74 L6 # 104
 Dawe, Piers Mellanox

Comment Type T Comment Status D

"This estimation ... is to be performed continuously in order to track the channel response variations." Needs more specification: how fast does it have to track, how deep could the variations be that it must track, how could this be tested?

SuggestedRemedy

Specify how fast it has to track, how deep the variations could be that it must track, and how this could be tested.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Any PHY (copper, optics, etc) has to deal with channel variations, specially caused by temperature variations. However it is something that is implementation dependent (e.g. LMS's mu for a DFE adaptation in a 1000BASE-T). 1000BASE-RH transmits linear modulations with THP over a POF channel using a light emitter. The launching power from light emitter (typically an LED) depends a lot with temperature (already studied in the TF, almost 6 dB between -40 and 105°C). The optical receiver may implement a linear TIA circuit, which includes AGC to deal with the dynamic range before and after the link is established. This AGC may be implemented by transimpedance control, which modifies the channel response (implementation dependent). The transmit block structure (pilot S2 and period of that) allow for an adaptation faster than that needed due to temperature variation.

Edition action. Replace from P74, L5 to L6 with:

"This estimation may use the received pilot S2. The state diagrams defined to control THP coefficients exchange protocol allow for dynamic adaptation of the coefficients before and after the link is established. The PHY receiver may dynamically determines variations in the channel response and requests to the partner new set of THP coefficients. The methods to determine the channel response variation and estimate THP coefficients according to that are implementation dependent."

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Cl 114 SC 114.5.2.2 P89 L7 # 105

Dawe, Piers Mellanox

Comment Type T Comment Status D

It seems "affine" just means linear, here, but there is no need for such obfuscation.

SuggestedRemedy

Delete "affine".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Affine != linear.

Afine = linear transformation followed by a translation.

For being $f(x)$ a linear function the following equality must be true:

$f(a*x + b*y) = a*f(x) + b*f(y)$.

In our case $f(x) = c*x + d$. The equality above is not true.

Anyway, deleting "affine" does not affect to the content of text, so it should be deleted to avoid confusion.

Cl 114 SC 114.5.1.2.3 P86 L17 # 106

Dawe, Piers Mellanox

Comment Type T Comment Status D

"The effect of receipt of this primitive is unspecified" - is, or should be - false. Standards where the client is out of the standard say this, but here there is no excuse. This PMD has only one possible client, which seems to be the PCS.

SuggestedRemedy

Change to "The effect of receipt of this primitive by the client (the PCS) is specified in 114.x.y."

Similarly for 114.5.1.5.3.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

It was inherited from D1.2 where PMD was in a separate clause.

See comment #103: proposed to change the PMD client to PMA, including in PMA TX the THP function, and in PMA RX the clock recovery and equalization.

Editor actions:

P 86, L 19, change to:

Upon receipt of this primitive the PMA performs clock recovery for correct time sampling of received symbols and adaptive channel equalization. (add cross reference to new PMA receive subclause)

P 87, L 46, change to:

Upon PMD_RXDETECT.indication(OK) is generated the PMD receive function is able to respond to PMD_RXPWR.request primitive that requests to PMD receive function to respond or not to the MDI signals. PMD_RXDETECT.indication(OK) also indicates to PMA receive function that optical signal is received from MDI and link may be established with a link partner. PMD_RXDETECT.indication(OK) may be used to wake up from deep sleep a system that integrates a 1000BASE-RHx PHY.

Upon PMD_RXDETECT.indication(FAIL) is generated the PMD receive function does not respond to the received MDI signals. PMD_RXDETECT.indication(FAIL) also indicates to PMA receive function that optical signal is not received so link establishment cannot be initiated. PMD_RXDETECT.indication(FAIL) may be used to transient to deep sleep a system that integrates a 1000BASE-RHx PHY.

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CI 114 SC 114.2.3.4 P45 L51 # 107
 Dawe, Piers Mellanox

Comment Type T Comment Status D
 What does "free counter" mean? The term doesn't appear anywhere in 802.3-2015. It looks like this function divides the clock by two.

SuggestedRemedy
 Use whatever the usual term in 802.3 is. Also in Figure 114-12.

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

P 45, L51, change:
 "A 1-bit free counter that is clocked at the ..."
 to:
 "A counter that counts from 0 to 1 with rollover and that is clocked at the ..."

P46, L2, change:
 "The 1-bit free counter is initialized to 0 ..."
 to:
 "The counter is initialized to 0 ..."

Figure 114-12, change "Free counter" to "Counter"

P 55, L42 and P 56, L 38, change:
 "... the demultiplexer is controlled by the LSB of a free counter that counts from 0 to kQAM-1 and is clocked at the same rate of the input signal, ..."
 to:
 "... the demultiplexer is controlled by the LSB of a counter that counts from 0 to kQAM-1 with rollover and that is clocked at the same rate of the input signal, ..."

P 60, L44, change:
 "A 1-bit free counter clocked at the 1D symbol rate ..."
 to:
 "A counter that counts from 0 to 1 with rollover and that is clocked at the 1D symbol rate ..."

P 60, L51, change:
 "The 1-bit free counter used to control the multiplexer is reset with value 0 ..."
 to:
 "The counter used to control the multiplexer is initialized with value 0 ..."

CI 114 SC 114.2.4.3 P52 L19 # 108
 Dawe, Piers Mellanox

Comment Type T Comment Status D
 Z2 and RZ2 lattices?

SuggestedRemedy
 If this is relevant, use more accessible terminology, and/or explain it. If it isn't relevant, remove the jargon.

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

P52, L19, change:
 "... a Multilevel Coset Coding (MLCC) of two levels based on Z2 and RZ2 lattices is used to adjust accurately the spectral efficiency with low complexity binary component codes."
 to:
 "... a Multilevel Coset Coding (MLCC) of two levels based on two-dimensional constellations is used to transmit the information with high spectral efficiency."

P52, L29, change:
 "Bits in the second level are mapped onto symbols of a QAM8 constellation over an RZ2 lattice."
 to:
 "Bits in the second level are mapped onto symbols of a rotated QAM8 constellation."

P52, L31 to 36, change:
 "After the above described mapping, each of the two levels produces the same number of symbols per two dimensions per codeword. The lattice transformations are defined to implement the coset partitioning. After the addition following the first-stage lattice transformations, the symbols are contained in Z2. Furthermore, a second-stage lattice transformation results in a final zero-mean two-dimensional (2D) square constellation over RZ2 lattice. Finally, in-phase and quadrature components of 2D symbols are multiplexed in time to generate PAM16 symbols."

to:
 "After the above described mapping, each of the two levels produces the same number of symbols per two dimensions per codeword. Symbols from each level are processed by a first lattice transformation and then added to carry out the coset partitioning. The output of adder is further processed by a second lattice transformation that produces symbols onto a rotated QAM128 constellation. Finally, in-phase and quadrature components of 2D symbols are multiplexed in time to generate PAM16 symbols."

Figure 114-19, replace "QAM8 RZ2 lattice Mapper" with "QAM8 Mapper", and "RZ2 to PAM multiplexer" to "QAM to PAM multiplexer"

P55,L15, change:
 "... 1482 bits are directly mapped into a QAM8 RZ2 lattice ..."
 to
 "... 1482 bits are directly mapped into a rotated QAM8 ..."

P802.3bv D1.3 Gigabit Ethernet Over Plastic Optical Fiber 4th Task Force review comments

P56, L12, change:
 "Figure 114–23 illustrates the details of the QAM8 over RZ2 lattice mapper."
 to
 "Figure 114–23 illustrates the details of the rotated QAM8 mapper."

P59, L23, eliminate "over Z2".

P59, L49, change:
 "The 2D symbols from the lattice adder shall be further transformed in order to obtain a final zero-mean two-dimensional square constellation over RZ2 as follows."
 to:
 "The 2D symbols from the lattice adder shall be further transformed in order to obtain a final rotated QAM128 constellation as follows."

P60, L42 heading, P60, L44 and title of Figure 114-30, change:
 "RZ2 to PAM multiplexer"
 to:
 "QAM to PAM multiplexer"

Cl 01 SC 1.4 P21 L21 # 109

Ortiz Rojo, David KDPOF

Comment Type E Comment Status D

It seems that OMA is not used in the current version of the document.

SuggestedRemedy

Remove definition from the document.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 45 SC 45.2.3.50.4 P29 L36 # 110

Ortiz Rojo, David KDPOF

Comment Type E Comment Status D

Reference to section 114.8 is incorrect. Wrong reference also appears in 45.2.3.51 sections 9 through 11 on the same page.

SuggestedRemedy

Change it to 114.4

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

- P29, L36: replace 114.8 with 114.4
- P31, L26: eliminate reference to 114.8 (no sense)
- P31, L33: eliminate reference to 114.8 (no sense)
- P31, L40: eliminate reference to 114.8 (no sense)
- P31, L47: eliminate reference to 114.8 (no sense)
- P32, L16: replace 114.8 with 114.4
- P66, L17, column description: replace 114.8 with 114.4
- P86, L40: replace 114.8 with 114.4.
- P87, L14: replace 114.8 with 114.4.
- P88, L14: replace 114.8 with 114.4.
- P101, L29: replace 114.8 with 114.5.3 (Test modes)

Cl 45 SC 45.2.3.51.8 P31 L26 # 111

Ortiz Rojo, David KDPOF

Comment Type E Comment Status D

Reference to section 114.8 is incorrect. Wrong reference also appears in 45.2.3.51 sections 9 through 11 on the same page. It also appears on page 32, section 45.2.3.51.15, line 16.

SuggestedRemedy

Change it to 114.4

Proposed Response Response Status W

PROPOSED ACCEPT.

See comment #110

P802.3bv D1.3 Gigabit Ethernet Over Plastic Optical Fiber 4th Task Force review comments

Cl 45 SC 45.2.3.51.9 P31 L28 # 112
 Ortiz Rojo, David KDPOF

Comment Type E Comment Status D

Meaning of the bit is not fully clear, and the functionality is sometimes 'repeated or generated' or 'received or generated'.

SuggestedRemedy

Section 114.4 already gives the details of when LPI is generated on the GMII. For simplicity and symmetry with 45.2.3.51.8 it would be best to replace "received or generated"/"repeated or generated" by generated.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

P31, L30: replace "repeated or generated" with "generated"
 P31, L32: replace "repeated or generated" with "generated"

Cl 114 SC 114.1.5 P38 L51 # 113
 Ortiz Rojo, David KDPOF

Comment Type E Comment Status D

"GMII data streams" should be singular, like in title of 114.2.4.1

SuggestedRemedy

Replace by "GMII data stream".

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 114 SC 114.2.1 P40 L53 # 114
 Ortiz Rojo, David KDPOF

Comment Type E Comment Status D

Link to section 114.5. is broken.

SuggestedRemedy

Fix link and change to section 114.4

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 114 SC 114.3.1 P64 L29 # 115
 Ortiz Rojo, David KDPOF

Comment Type E Comment Status D

"to advertise Energy-Efficient Ethernet (EEE) is supported by the implementation and enabled ..." could be rephrased by "to advertise that Energy-Efficient Ethernet (EEE) is supported by the implementation and that it is enabled..."

SuggestedRemedy

Per comment

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 114 SC 114.7.1 P104 L36 # 116
 Ortiz Rojo, David KDPOF

Comment Type E Comment Status D

verb "perform" should be plural.

SuggestedRemedy

Replace "perform" by "performs".

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 114 SC 114.3.2.3 P70 L40 # 117
 Ortiz Rojo, David KDPOF

Comment Type T Comment Status D

The sentence is describing functionality that is implemented in another state diagram. Detailed description should be given only in the relevant state diagram and only the state variable should be referred.

SuggestedRemedy

Change "When both link partners signal reliable payload data reception by asserting OK in the PHD.RX.LINKSTATUS field, the bidirectional link is established (link_status = OK) ..." by "Once bidirectional link is established (link_status = OK) ..."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Replace with:

"Once bidirectional link is established (link_status = OK) the 64B/65B PCS decoder begins to map the received PDBs ..."

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Cl 114 SC 114.7.2 P105 L8 # 118
 Ortiz Rojo, David KDPOF

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

It is not clear which bits this paragraph is referring to.

SuggestedRemedy

To solve the issue, the following sentence could be added to the beginning of the paragraph: "The status of the three possible outstanding OAM messages can be decoded from the values of the control bits of register 3.500. The table ..."

Proposed Response Response Status **W**

PROPOSED ACCEPT.

Cl 114 SC 114.2.2.1 P42 L41 # 119
 Ortiz Rojo, David KDPOF

Comment Type **TR** Comment Status **D**

The matlab initialization of the MLS generator does not match with the description in the text above.

SuggestedRemedy

In the matlab description change the line: "r=[r zeros(1,25-length(r))];" with "r=[zeros(1,25-length(r)) r];"

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

Also replace line 40 to only use standard Matlab (no additional toolbox)

P42, L40 to 41:
 r = double(dec2bin(hex2dec(seed))) - 48;
 r = [zeros(1, 25-length(r)) r];

Cl 114 SC 114.3.1 P64 L45 # 120
 Ortiz Rojo, David KDPOF

Comment Type **TR** Comment Status **D**

For proper operation of the receiver, it is necessary that the REMPHD fields are available before the end of the transmit block that carries the PHD (in general the transmitter announces in a given PHD information relative to the next transmit block, for example, which THP coefficient set is going to be applied). This requirement is missing in this paragraph.

SuggestedRemedy

Add a sentence indicating the requirement. For example the following sentence could be added: "The value of the REMPHD fields must be available before the end of the transmit block that carries them, so decoding and validation of the complete PHS must be completed between the end of the reception of PHS13 and the end of the transmit block."

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add:

"The value of the REMPHD fields must be available to the state diagrams before the end of the received transmit block that carries them, so decoding and validation of the complete PHS must be completed between the end of the reception of PHS13 and the end of the received transmit block."

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Cl 114 SC 114.3.2.4 P71 L1 # 121
 Ortiz Rojo, David KDPOF

Comment Type TR Comment Status D

Current description of the PMA phy quality monitor SD and and link monitor SD do not guarantee that both link partners transition their link_status variables to link_status=OK simultaneously.
 For example, when the local PHY loc_rcv_status variable went OK many transmit blocks before, the remote PHY will have already assigned its rem_rcv_status variable to OK many transmit blocks before. In this scenario, when the remote PHY receives a new_varn_est_event with a noise variance that is below the threshold, it will transition its internal loc_rcv_status variable to OK immediately, and will transition to the link_status=OK immediately. However the local phy have to wait to receive a frame with the REMPHD.RX.LINKSTATUS=OK, something, which implies that it will transition to the link_status=OK with a minimum delay of about one transmit block.
 However the link_status should transition to the OK value simultaneously in both link partners to ensure that both of them enable the GMII interface simultaneously, and also to guarantee a correct operation of EEE functionality.

SuggestedRemedy

To solve this issue the following changes must be introduced:
 Modify the link monitor state diagram of figure 114-36 to ensure that the transition from LINK_DOWN to LINK_UP when rem_rcv_status goes to OK is delayed until a new_rxblock_event is received.
 Modify the phy quality monitor diagram of figure 114-42 to ensure that there is a delay of two 'new_txblock_event' between the assignment of LOCPHD.RX.LINKSTATUS<=OK and the assignmet of loc_rcv_status<=OK. This delay is only necessary when the previous values of the variables is NOT_OK.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Also modify descriptive text for both the Link monitor and the PHY quality monitor.

See "perezaranda_3bv_1_1115.pdf" for new link monitor state diagram according to the suggested remedy.

See "perezaranda_3bv_2_1115.pdf" for new PHY quality monitor state diagram according to the suggested remedy.

Cl 114 SC 114.5.3.1 P91 L41 # 122
 Ortiz Rojo, David KDPOF

Comment Type TR Comment Status D

The description of test mode 1 in this paragraph suggests that test mode 1 may be entered dynamically. However a dynamic implementation of test mode 1, in which the mode can be entered and exited dynamically adds an unneeded extra complexity and cost to the implementation. Moreover this dynamic functionality is not needed, as this is a test mode intended to be used in a controlled environment (as is also the case of the other test modes). Apart from this the requirement to clear the counter on any change of the link_status variable inhibits the capability of monitoring the errors that might happen around the link transitions in a debug environment, but does not add any value for a normal BER test, as the error counter can be cleared right after link establishment by simply reading the clause 45 register that holds the counter value.

SuggestedRemedy

Change lines from 41 to 50 to indicate that the operation in test mode 1 is static, that is, the transmitter only changes the operating mode from test mode 1 to normal mode after a resynchronization. Also remove requirement for counter clearing on changes of link_status variable.

To do this the lines 41 to 50 might be replaced by the following:

"The PCS shall announce to the link partner this test mode in the transmitted PHD using the field PHD.TX.NEXT.MODE (see 114.3.1). The operating mode of the transmitter encoded in the field PHD.TX.NEXT.MODE is selected at PMA reset, and does not change value unless a PMA reset takes place. The receiver must reconfigure to support the indicated operating mode, for normal operation (64B/65B decoder connected to the binary descrambler), or for BER test (counter connected to the binary descrambler)."

Line 52 to P92, line 2, eliminate from first stop.

In Pg. 33, change from line 23 to 25 "These bits are reset to all zeros ..."
 to

"These bits are reset to all zeros when the counter is read. The counter is held at all ones in the case of overflow."

Proposed Response Response Status W

PROPOSED ACCEPT.