

IEEE P802.3ap draft 1.0 Comments

CI 00 SC P L # 39
Healey, Adam

Comment Type E Comment Status A

PICS for Clauses 70 through 73 are no longer aligned with the text.

SuggestedRemedy

Re-align PICS with text.

Proposed Response Response Status C

ACCEPT.

Bob Noseworthy to supply PICS updates.

CI 00 SC P L # 38
Healey, Adam

Comment Type E Comment Status A

Heading capitalization does not follow a consistent style.

SuggestedRemedy

I will work with the editor to implement a consistent style throughout the clauses.

Proposed Response Response Status C

ACCEPT.

CI 00 SC P L # 37
Healey, Adam

Comment Type E Comment Status A

The subclause headings for the transmitter and receiver electrical specifications in Clauses 70, 71, and 72 all use different wording in the subclause titles.

For example, for clause 70, the titles take the form "Output amplitude at TP1 for 1000BASE-KX". In clause 71, the titles take the form "Output amplitude at TP1 (10GBASE-KX4)".

It does not seem necessary to repetively state the port type for each electrical parameter since it can be expected to know what clause they are reading, and therefore what port type is being discussed.

SuggestedRemedy

Remove references to port type from 70.6.1.x, 70.6.2.x, 71.6.1.x, 71.6.2.x, 72.6.1.x, and 72.6.2.x.

Also, in 70.6.1.5, it is not necessary to say the "at TP1" since output amplitude is not measured at any other test point in the reference model. Change the title of 70.6.1.5 to "Output amplitude".

Proposed Response Response Status C

ACCEPT.

CI 00 SC P L # 36
Healey, Adam

Comment Type E Comment Status A

For consistency with the style used in Gigabit Ethernet and 10 Gigabit Ethernet, all occurrences of "Backplane Ethernet" in the document should have a capital "B" and capital "E". There are multiple occurrences in the document where "backplane" is in lower case.

SuggestedRemedy

Apply this usage consistently throughout the document.

Proposed Response Response Status C

ACCEPT.

IEEE P802.3ap draft 1.0 Comments

CI 00 SC P L # 35

Healey, Adam

Comment Type E Comment Status A

Check fonts for editing instructions. In some cases the font is arial and in others the font is times new roman.

SuggestedRemedy

Change font for all editing instructions to times new roman.

Proposed Response Response Status C

ACCEPT.

CI 01 SC 1.4 P 13 L 28 # 49

Ganga, Ilango

Comment Type E Comment Status A

modify "and electrical backplane" to read as "an electrical backplane"

SuggestedRemedy

modify "and electrical backplane" to read as "an electrical backplane"

Proposed Response Response Status C

ACCEPT.

See comment #7

CI 01 SC 1.4 P 13 L 31 # 50

Ganga, Ilango

Comment Type E Comment Status A

modify "over and electrical backplane" with "over an electrical backplane"

SuggestedRemedy

modify "over and electrical backplane" with "over an electrical backplane"

Proposed Response Response Status C

ACCEPT.

See comment #7

CI 01 SC 1.4 P 13 L 33 # 40

Healey, Adam

Comment Type E Comment Status A

The term defined here is "Differential Manchester Encoding: " and not "DME". "DME" should be defined as an abbreviation in 1.5

SuggestedRemedy

Change "1.4.xxx DME: Differential Manchester Encoding" to "1.4.xxx Differential Manchester Encoding".

Add "DME Differential Manchester Encoded" to 1.5

Proposed Response Response Status C

ACCEPT.

CI 01 SC 1.5 P 13 L 44 # 51

Ganga, Ilango

Comment Type E Comment Status A

Abbreviation for Backplane is "BP" used in this document but not defined in 1.5. Add abbreviation for BP to clause 1.5.

The same abbreviation BP is defined by 802.3an as "base page" in 802.3an-D2.1 but it has not been used anywhere in the document.

To resolve this conflict submit a comment against 802.3an-D2.1 to remove this abbreviation.

SuggestedRemedy

Add the following abbreviation to clause 1.5

BP Backplane

Proposed Response Response Status C

ACCEPT.

Also need a editorial comment against IEEE P802.3an to remove the definition "BP = base page".

IEEE P802.3ap draft 1.0 Comments

CI 01 SC 4 P 13 L 28 # 7

Szczepanek, Andre

Comment Type E Comment Status A

"over and electrical backplane"

Typo repeated on line 31

SuggestedRemedy

"over an electrical backplane"

Proposed Response Response Status C

ACCEPT.

CI 28A SC 28A P 14 L 8 # 41

Healey, Adam

Comment Type E Comment Status A

Editorial instructions are incomplete (two changes are made, only one is described). Also, check font as it is not consistent with the font used for other notes.

SuggestedRemedy

Add the following the editing instruction (prior to the existing instruction):

Change 1'b00001 selector description to "IEEE Std 802.3 Clause 28".

Proposed Response Response Status C

ACCEPT.

CI 45 SC 45.2.1.7.4 P 29 L 50 # 12

Healey, Adam

Comment Type T Comment Status A

The original text in D2.2 of IEEE P802.3REVam is:

"The description of the transmit fault function for serial PMDs is given in 52.4.8. The description of the transmit fault function for WWDM PMDs is given in 53.4.10. The description of the transmit fault function for the 10GBASE-CX4 PMD is given in 54.5.10. The transmit fault bit shall be implemented with latching high behavior."

The line "If the MDIO is implemented, and the PMD has detected a LD fault on any transmit lane, the PMD shall set the PMD_transmit_fault variable to ONE, otherwise the PMD shall set PMD_trasmit_fault to ZERO." does not appear in the original text and there is no corresponding editing instruction to add at. This sentence actually reads as a PMD requirement and actually appears in the respective PMD clauses. Therefore I'm not sure that it belongs here. Delete it.

Finally, the wording of the text to be added may be improved.

SuggestedRemedy

Modify section to read:

Change to final lines of the first paragraph of 45.2.1.7.4 as follows:

"The description of the transmit fault function for serial optical PMDs is given in 52.4.8. The description of the transmit fault function for WWDM PMDs is given in 53.4.10. The description of the transmit fault function for the 10GBASE-CX4 PMD is given in 54.5.10. The description of the transmit fault function for the 10GBASE-KX4 PMD is given in 71.5.10. The description of the transmit fault function for the 10GBASE-KR PMD is given in 72.5.8. The transmit fault bit shall be implemented with latching high behavior."

Proposed Response Response Status C

ACCEPT.

IEEE P802.3ap draft 1.0 Comments

CI 45 SC 45.2.1.7.5 P 30 L 4 # 13

Healey, Adam

Comment Type T Comment Status A

The original text in D2.2 of IEEE P802.3REVam is:

"The description of the receive fault function for serial PMDs is given in 52.4.9. The description of the receive fault function for WWDM PMDs is given in 53.4.11. The description of the receive fault function for the 10GBASE-CX4 PMD is given in 54.5.11. The receive fault bit shall be implemented with latching high behavior."

The line "If the MDIO is implemented, and the PMD has detected a LD fault on any receive lane, the PMD shall set the PMD_receive_fault variable to ONE, otherwise the PMD shall set PMD_receive_fault to ZERO." does not appear in the original text and there is no corresponding editing instruction to add at. This sentence actually reads as a PMD requirement and actually appears in the respective PMD clauses. Therefore I'm not sure that it belongs here. Delete it.

SuggestedRemedy

Modify section to read:

Change to final lines of the first paragraph of 45.2.1.7.5 as follows:

"The description of the receive fault function for serial optical PMDs is given in 52.4.8. The description of the transmit fault function for WWDM PMDs is given in 53.4.10. The description of the transmit fault function for the 10GBASE-CX4 PMD is given in 54.5.10. The description of the transmit fault function for the 10GBASE-KX4 PMD is given in 71.5.11. The description of the transmit fault function for the 10GBASE-KR PMD is given in 72.5.9. The transmit fault bit shall be implemented with latching high behavior."

Proposed Response Response Status C

ACCEPT.

CI 45 SC 45.2.1.77.2 P 32 L 31 # 14

Healey, Adam

Comment Type T Comment Status A

Clause 72 defines the behavior for c(-1), c(0), and c(1) coefficients. While room has been allocated for additional coefficients, this has been deemed as vendor specific feature and should be reported as such.

There are two alternatives:

1) Report the bits as reserved. Reserved implies that a compliant implementation will always be sent these bits as 0, which decodes to hold for c(2) through c(5), and ignore them on receipt. The standard may redefine these bits in the future to support new functions to serve different purposes.

2) Report the bits as vendor specific. The behavior of these bits would be undefined (they could be used for something other an coefficient updates) but they it would be more difficult for the standard to re-claim them for use by future projects.

SuggestedRemedy

In Table 45-55, change 1.152.13:6 to reserved.

Also, for the local device version of this register (45.2.1.79.2)

In Table 45-57, change 1.154.13:6 to reserved.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

In Table 45-55, change 1.152.13:10 to reserved and change 1.152.9:6 to "Vendor specific".

In Table 45-57, change 1.154.13:10 to reserved and change 1.154.9:6 to "Vendor specific".

Add subclauses defining the vendor specific bits.

Straw Poll #1

For bits 13:6

- 1 - all reserved (0)
- 2 - all vendor specific (0)
- 3 - 4 reserved / 4 vendor specific

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CI 45 SC 45.2.1.78.2 P 33 L 38 # 15

Healey, Adam

Comment Type T Comment Status A

Clause 72 defines the behavior for c(-1), c(0), and c(1) coefficients. While room has been allocated for additional coefficients, this has been deemed as vendor specific feature and should be reported as such.

Also, we tend to use terms "coefficient" and "tap" interchangeably throughout the document. The terms "coefficient" is more appropriate and should be used consistently.

SuggestedRemedy

Change "Tap (k) update" status to "Coefficient (k) status".

In Table 45-56, change 1.153.14:6 to reserved.

Also, for the local device version of this register (45.2.1.80.2) change "Tap (k) update" status to "Coefficient (k) status".

In Table 45-58, change 1.154.14:6 to reserved.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Change "Tap (k) update" status to "Coefficient (k) status".

In Table 45-56, change 1.153.14:10 to reserved and change 1.153.14:10 to "Vendor specific"

45.2.1.80.2: change "Tap (k) update" status to "Coefficient (k) status".

In Table 45-58, change 1.155.14:10 to reserved and change 1.155.14:10 to "Vendor specific"

CI 45 SC 45.2.7.100.2 P 44 L 35 # 16

Healey, Adam

Comment Type E Comment Status A

Required additions to the PICS tables for clause 45 are missing.

SuggestedRemedy

Add PICS tables reflecting the requirements added by Backplane Ethernet.

Proposed Response Response Status C

ACCEPT.

Bob Noseworthy to supply PICS.

CI 45 SC 45.2.7.2.1 P 39 L 1 # 11

Healey, Adam

Comment Type E Comment Status A

Subclause number duplicated.

SuggestedRemedy

Delete one of the copies of the subclause number.

Proposed Response Response Status C

ACCEPT.

CI 45 SC Table 45-56 P 33 L 14 # 8

Szczepanek, Andre

Comment Type E Comment Status A

The description cell for Tap Update Status still uses underflow/overflow

SuggestedRemedy

change underflow/overflow to maximum/minimum as in Table 72-5

Proposed Response Response Status C

ACCEPT.

CI 69 SC 3.3.5.1 P 54 L 44 # 9

Szczepanek, Andre

Comment Type T Comment Status A

We have a normative statement "shall be calculated" in this informative channel spec.

Don't shalls imply conformance entries.

This also occurs in 3.3.5.2, 3.3.5.3, & 3.3.5.4.

SuggestedRemedy

replace "shall be calculated" with "is calculated"

Proposed Response Response Status C

ACCEPT.

IEEE P802.3ap draft 1.0 Comments

Cl 69 SC 69.3.2 P 49 L 23 # 2

Jia, Gongxian

Comment Type T Comment Status R skew

Original text: "The total differential skew from TP1 to TP4 is recommended to be no more than 20ps."

Comment: Does this spec is achievable ? I have measured a 10-inches-long differential stripline made of N4000-13, the physical length of the positive and negative line is the exactly the same, the measured differential skew is 11ps. How can we get the spec for 1 meter-long channel ?

SuggestedRemedy

No suggestion.

Proposed Response Response Status C

REJECT.

No remedy provided.

There are two dimensions to this problem: (1) how difficult is this specification to achieve and (2) how much differential skew can 10GBASE-KR withstand. The unit interval for 10GBASE-KR is 97 ps, and it is assumed that the differential skew must be limited to some reasonable fraction of this value.

The commenter is free to re-submit this comment with supporting arguments or data, in the context of (1) and (2), that justifies a new value of this informative specification.

Cl 69 SC 69.3.3.1 P 49 L 35 # 17

Healey, Adam

Comment Type E Comment Status A

"maximum deviation of insertion from" should be "maximum deviation of insertion loss from"

SuggestedRemedy

Per comment.

Proposed Response Response Status C

ACCEPT.

Cl 69 SC 69.3.3.1 P 50 L 5 # 18

Healey, Adam

Comment Type E Comment Status A

Table contains color for no obvious purpose.

SuggestedRemedy

Rework table to eliminate use of color.

Proposed Response Response Status C

ACCEPT.

Cl 69 SC 69.3.3.1 P 50 L 9 # 20

Healey, Adam

Comment Type T Comment Status A

b1 should be 2.25E-5

SuggestedRemedy

Change b1 to 2.25E-5

Proposed Response Response Status C

ACCEPT.

IEEE P802.3ap draft 1.0 Comments

CI 69 SC 69.3.3.4 P 53 L 19 # 19

Healey, Adam

Comment Type T Comment Status A

ILD(f) is simply IL(f)-A(f).

A(f) is defined via the LMS fit equations that follow, $A(f) = m \cdot f + b$

It seems that definition of the LMS fit line is misplaced and the subclause ordering could be modified to create a more sensible progression that is easier to follow.

SuggestedRemedy

Change the subclause ordering to the following:

- 69.3.3.2 Attenuation
- 69.3.3.3 Insertion loss
- 69.3.3.4 Insertion loss deviation

The text in the respective clauses remains unchanged with the following exceptions:

Move the LMS curve fit equations to 69.3.3.2 (Attenuation).

Add the following definitions to the LMS curve fit equations: f1index, f2index, favg, and ILavg.

In 69.3.3.2, define A(f) as $m \cdot f + b$.

In 69.3.3.4, define ILD(f) = IL(f)-A(f)

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

See healey_01_0705.pdf

CI 69A SC P 65 L 27 # 4

Mellitz, Richard

Comment Type TR Comment Status R

EIT baseline is a confusing term.

SuggestedRemedy

Use something like V_max_interference

also used in 70-8, p75; 71-8 p73; 72-10,p121

Proposed Response Response Status C

REJECT.

This term is clearly defined in Annex 69A.

CI 69A SC 69a.1 P 61 L 31 # 5

Mellitz, Richard

Comment Type T Comment Status A BIST

I believe that BIST should not be optional. If not optional, the cost of a BERT test system can exceed \$500K. This means folks building line cards will have to make a substantial instrument investment.

SuggestedRemedy

Require BIST in chips.

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

The commenter is reminded that discussions of price are inappropriate topics for IEEE standards meetings.

Referring to IEEE P802.3REVam/Draft 2.1, 49.2.8:

"When the transmit channel is operating in test-pattern mode, it sends 16 bits of test pattern at a time via PMA_UNITDATA.request primitives. When the PCS allows direct connection to the PMA, the test-pattern generator shall be implemented. The test-pattern generator does not apply to a PCS, which only supports connection to the WIS. A PCS which supports both WIS and direct PMA attachment may reject or allow an attempt to activate a transmit test-pattern mode when a WIS is attached."

Since Backplane Ethernet does not discuss support for the WIS, we can then presume that the test pattern generator and checker is mandatory in a compliant Backplane Ethernet implementation.

No change to Annex 69A appears to be required because, despite the fact the test pattern generator/checker is required to be present, the tester is not required to use in testing.

IEEE P802.3ap draft 1.0 Comments

CI 69A SC 69A.2 P 62 L 32 # 21

Healey, Adam

Comment Type T Comment Status A

The frequency dependent attenuation should be allowed to have attenuation equal to the worst-case limit line.

SuggestedRemedy

Change sentence preceding Equation 69A-1 to:

"The attenuation should be greater than or equal to the worst case attenuation limit described by the inequality:"

Change equation 69A-1 to:

$A(f) \geq 20 \cdot \log_{10}(e) \dots$

Proposed Response Response Status C

ACCEPT.

CI 69A SC 69A.5 P 64 L 46 # 22

Healey, Adam

Comment Type T Comment Status A

Clarify the frequency range for EIT baseline.

SuggestedRemedy

Change "for $f > 0.6 \cdot \text{fbaud}$ " to "for $0.6 \cdot \text{fbaud} < f \leq \text{fbaud}$ "

Proposed Response Response Status C

ACCEPT.

CI 69A SC figure 69.4a P 65 L 46 # 3

Mellitz, Richard

Comment Type TR Comment Status A

Axis not sufficiently labeled.

figures

SuggestedRemedy

unit like Volt and Hertz need to be added

Proposed Response Response Status C

ACCEPT.

Figure will be re-drawn with appropriately labeled axes.

CI 70 SC 70.5.3 P 69 L 11 # 55

Noseworthy, Bob

Comment Type E Comment Status A

Last sentence of 70.5.3 should be INPUT voltage, not output.

SuggestedRemedy

change last sentence of 70.5.3

from:

A positive output voltage ...

to:

A positive input voltage ...

Proposed Response Response Status C

ACCEPT.

CI 70 SC 70.6.1 P 71 L 12 # 23

Healey, Adam

Comment Type T Comment Status A

It seems odd to have the common-mode range of 10GBASE-KX4 and 10GBASE-KR be -0.4 to 1.9 while for 1000BASE-KX, the upper range is constrained to 1.2 V.

SuggestedRemedy

Change "DC common-mode voltage limits" to "-0.4 to 1.9".

Also, in section 70.6.1.5 (page 73, line 34), change 1.2 V to 1.9 V.

Proposed Response Response Status C

ACCEPT.

CI 70 SC 70.6.1.2 P 72 L 37 # 58

Noseworthy, Bob

Comment Type E Comment Status A

"return loss lower than" should be "return loss greater than"

SuggestedRemedy

Correct as indicated above

Proposed Response Response Status C

ACCEPT.

IEEE P802.3ap draft 1.0 Comments

CI 70 SC 70.6.1.6 P 73 L 48 # 24
 Healey, Adam
 Comment Type E Comment Status A
 Change title to "Differential output return loss".
 SuggestedRemedy
 Per comment.
 Proposed Response Response Status C
 ACCEPT.

CI 70 SC 70.6.1.9 P 74 L 53 # 25
 Healey, Adam
 Comment Type E Comment Status A
 Remove quotation marks surrounding "jitter test frame".
 SuggestedRemedy
 Per comment.
 Proposed Response Response Status C
 ACCEPT.

CI 70 SC 70.6.2 P 75 L 22 # 26
 Healey, Adam
 Comment Type E Comment Status A
 Change parameter names:
 "Differential output return loss minimum" should be "Differential input return loss (minimum)"
 "Common mode return loss" should be "Common mode input return loss (minimum)"
 Change subclause titles:
 For 70.6.2.6, "Differential input return loss"
 For 70.6.2.7, "Common mode input return loss"
 SuggestedRemedy
 Per comment
 Proposed Response Response Status C
 ACCEPT.

CI 70 SC 70.6.2.3 P 76 L 1 # 28
 Healey, Adam
 Comment Type T Comment Status A
 Given that we have a receiver interference tolerance requirement, this receiver sensitivity requirement seems redundant.
 SuggestedRemedy
 Remove subclause 70.6.2.3 and the corresponding entry in Table 70-7.
 Proposed Response Response Status C
 ACCEPT.

CI 70 SC 70.6.2.5 P 76 L 22 # 27
 Healey, Adam
 Comment Type E Comment Status A
 "with a 100 Ohms test load" should be "with a 100 Ohm test load"
 SuggestedRemedy
 Per comment.
 Proposed Response Response Status C
 ACCEPT.

CI 71 SC 71.6.1 P 87 L 18 # 29
 Healey, Adam
 Comment Type E Comment Status A
 Change parameter name:
 "Differential output return loss minimum" should be "Differential output return loss (minimum)"
 Change the title of subclause 71.6.1.5 to "Differential output return loss".
 SuggestedRemedy
 Per comment.
 Proposed Response Response Status C
 ACCEPT.

IEEE P802.3ap draft 1.0 Comments

CI 71 SC 71.6.1.6 P 90 L 23 # 57

Noseworthy, Bob

Comment Type E Comment Status A

Incorrect figure number references.

71.6.1.6:

1st sentence: Should be figure 71-5 and 71-6 not 71-3 and 71-4.

2nd sentence: Should be figure 71-5 not 71-4.

4th sentence: Should be figure 71-5 not 71-4.

SuggestedRemedy

Correct figure references as indicated above

Proposed Response Response Status C

ACCEPT.

1st sentence: Should be figure 71-2 and 71-3.

2nd sentence: Should be figure 71-5.

4th sentence: Should be figure 71-5.

CI 71 SC 71.6.2.5 P 93 L 39 # 30

Healey, Adam

Comment Type E Comment Status A

Change subclause titles:

Change title of 71.6.2.5 to "Differential input return loss"

Change title of 71.6.2.6 to "Common mode input return loss"

SuggestedRemedy

Per comment.

Proposed Response Response Status C

ACCEPT.

CI 72 SC 72.5.10.2 P 105 L 14 # 43

Joe , Abler

Comment Type T Comment Status A

...transmission facilitates reception over under-equalized channels. This implies that the Tx FFE begins the process with no equalization. In order to minimize initialization time, a design may decide to begin the process with the FFE set to a moderate or mid-level amount of equalization. Depending on the channel, this starting point could be over-equalized

SuggestedRemedy

Change totransmission facilitates reception over non-optimally equalized channels.

Proposed Response Response Status C

ACCEPT.

CI 72 SC 72.5.10.2 P 105 L 9 # 46

Joe , Abler

Comment Type TR Comment Status R training_pattern

Training format overhead is too inefficient
Presentation provided with more detail (abler_01_0705)

SuggestedRemedy

Change line 9 to state the frame is 548 octets in length.

Change line 30 to show a training pattern length of 512 octets

Proposed Response Response Status C

REJECT.

This comment was WITHDRAWN by the commenter.

IEEE P802.3ap draft 1.0 Comments

CI 72 SC 72.5.10.2.3 P 106 L7 # 31

Healey, Adam

Comment Type T Comment Status A

Clause 72 only defines the behavior for coefficients c(-1), c(0), and c(1). The behavior of other coefficients was deemed vendor specific and beyond the scope of the standard. The fields for c(2) through c(5) should not be included unless the Task Force is prepared to describe what happens when increment or decrement updates are requested from those taps.

SuggestedRemedy

Change "...and coefficient updates for up to 7..." to "...and coefficient updates for 3...".

In Table 72-4, change cells 13:6 (bits 127:48) to Reserved (sent as 0, ignored on receipt).

Finally, in 72.5.10.2.3.2, change "The valid range for k is -1 to +5, ..." to "The valid range for k is -1 to +1, ..."

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Change "...and coefficient updates for up to 7..." to "...and coefficient updates for 3...".

In Table 72-4, change cells 13:10 to Reserved (sent as 0, ignored on receipt) and change cells 9:6 to "Vendor specific".

Add subclause defining the vendor specific bits.

Finally, in 72.5.10.2.3.2, change "The valid range for k is -1 to +5, ..." to "The valid range for k is -1 to +1, ..."

CI 72 SC 72.5.10.2.4.2 P 107 L 47 # 32

Healey, Adam

Comment Type T Comment Status A

Clause 72 only defines the behavior for coefficients c(-1), c(0), and c(1). The behavior of other coefficients was deemed vendor specific and beyond the scope of the standard. The fields for c(2) through c(5) should not be included unless the Task Force is prepared to describe what happens when increment or decrement updates are requested from those taps.

Also, we tend to use terms ""coefficient"" and ""tap"" interchangeably throughout the document. The terms ""coefficient"" is more appropriate and should be used consistently.

SuggestedRemedy

Change the title of 72.5.10.2.4.2 to "Coefficient (k) status".

On page 108/line 1, change "The valid range for k is -1 to +5, ..." to "The valid range for k is -1 to +1, ..."

In Table 72-5, change cells 14:6 to Reserved. Change names from "Tap (k) Update Status" to "Coefficient (k) status".

One page 100, line 20, change "in the Tap Update Status field" to "in the Coefficient Status field".

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

Change the title of 72.5.10.2.4.2 to "Coefficient (k) status".

On page 108/line 1, change "The valid range for k is -1 to +5, ..." to "The valid range for k is -1 to +1, ..."

In Table 72-5, change cells 14:10 to Reserved and change cells 9:6 to "Vendor specific". Change names from "Tap (k) Update Status" to "Coefficient (k) status".

Add subclause defining vendor specific bits.

One page 100, line 20, change "in the Tap Update Status field" to "in the Coefficient Status field".

IEEE P802.3ap draft 1.0 Comments

CI 72 SC 72.5.10.2.6 P 108 L 28 # 44
Joe , Abler

Comment Type **TR** Comment Status **R** training_pattern
Training pattern has insufficient random content
Presentation provided with more detail (abler_01_0705)

SuggestedRemedy
Change training pattern to be a PRBS7 stream (the entire pattern field).

Proposed Response Response Status **C**
REJECT.

This comment was WITHDRAWN by the commenter.

CI 72 SC 72.5.10.2.6 P 108 L 28 # 45
Joe , Abler

Comment Type **TR** Comment Status **R** training_pattern
Training pattern has insufficient random content
Presentation provided with more detail (abler_01_0705)

SuggestedRemedy
Do not reseed PRBS generator after first training pattern is sent

Proposed Response Response Status **C**
REJECT.

This comment was WITHDRAWN by the commenter.

CI 72 SC 72.5.10.3.5 P 110 L 43 # 33
Healey, Adam

Comment Type **E** Comment Status **A**
"(coefficient - gain)" appears as "(coefficient ? gain)" in the PDF.

SuggestedRemedy
Correct so that symbol appears properly in the PDF.

Proposed Response Response Status **C**
ACCEPT.

CI 72 SC 72.5.10.4 P 111 L 7 # 54
Noseworthy, Bob

Comment Type **T** Comment Status **A**
72.5.10.4 - State diagrams have no associated shalls.

SuggestedRemedy
Replace text of 72.5.10.4 with the 3 subclauses below.

72.10.4.1 Frame Lock
The 10GBASE-KR PMD shall implement the Frame Lock state machine as depicted in Figure 72-3 including compliance with the associated state variables as specified in 72.5.10.3. The frame lock state machine determines when the PMD control function has detected the frame boundaries in the received data stream.

72.10.4.2 Training
The 10GBASE-KR PMD shall implement the Training state machine as depicted in Figure 72-4 including compliance with the associated state variables as specified in 72.5.10.3. The training state machine defines the operation of the 10GBASE-KR start-up protocol.

72.10.4.3 Coefficient Update
The 10GBASE-KR PMD shall implement the Coefficient Update state machine as depicted in Figure 72-5 including compliance with the associated state variables as specified in 72.5.10.3. The coefficient update state machine defines the process for updating transmit equalizer coefficients in response to requests from the link partner, and also defines the coefficient update status to be reported in outgoing training frames.

Proposed Response Response Status **C**
ACCEPT.

CI 72 SC 72.5.3 P 103 L 27 # 56
Noseworthy, Bob

Comment Type **E** Comment Status **A**
Last sentence of 72.5.3 should be INPUT voltage, not output.

SuggestedRemedy
change last sentence of 72.5.3
from:
A positive output voltage ...

to:
A positive input voltage ...

Proposed Response Response Status **C**
ACCEPT.

IEEE P802.3ap draft 1.0 Comments

CI 72 SC 72.5.6 P 104 L 6 # 42

Joe , Abler

Comment Type T Comment Status R loopback

Loopback mode shall be provided. This is a carryover from traditional ethernet interfaces, which are network interfaces that are of a duplex nature, both logically and physically. Backplane interfaces require switch chips. Many switch architectures are multi-stage/multi-chip devices that may not even have the logical duplex connection in the same physical chip. Even single-chip architectures often prefer to have Tx devices on side of a die, Rx devices on the other. Loopback is not possible in some of these implementations, and systems rely on other mechanisms for test.

SuggestedRemedy

change to loopback mode may be provided.

Proposed Response Response Status C

REJECT.

A Backplane Ethernet link is a full-duplex and connects two Ethernet MACs over a backplane interconnect. The loopback structure proposed is feasible in this architecture.

Non-Ethernet implementations utilizing the serdes described by this document are beyond the scope of this standard.

Straw Poll #2 - Chicago rules

- #1 Keep Loopback mode mandatory
- #2 Make Loopback for 10GBASE-KR optional
- #3 Make loopback mode for all port types optional

- 1 - 20
- 2 - 7
- 3 - 11

CI 72 SC 72.6.1 P 114 L 43 # 34

Healey, Adam

Comment Type E Comment Status A

Change parameter name:

"Differential output return loss minimum" to "Differential output return loss (minimum)"

SuggestedRemedy

Per comment.

Proposed Response Response Status C

ACCEPT.

CI 72 SC 72.6.1.2 P 115 L 36 # 59

Noseworthy, Bob

Comment Type E Comment Status A

In reference to the two equations designating the return loss of the test fixture - add an equation number.

SuggestedRemedy

Add equation number (71-1 and 71-2) and update existing equation numbers appropriately. Modify last sentence from:

"shall be 100 Ohms with a return loss"

to:

"shall be 100 Ohms. The differential return loss, in dB with f in MHz, of the test fixture shall meet Equations 71-1 and Equation 71-2."

Proposed Response Response Status C

ACCEPT.

IEEE P802.3ap draft 1.0 Comments

CI 72 SC 72.6.2.3 P 122 L 5 # 1

Jia, Gongxian

Comment Type T Comment Status R ac_coupling

Original text:

Line 5 to line 6: "It should be noted that there may be various methods for AC-coupling in actual implementations."

Comment:

Various methods will impact the channel (from TX to RX pad side) performance. If external AC compacitor is used, different pcb stackup and via tuning technology will have different effects on the compacitor's via performance. Can the receiver block side consider the worst case of PCB layout influence on AC coupling performance ?

The case is very important for 10Gbase-KR, but not important for 1000BASE-KX or 10GBASE-KX4. That to say, whether the external compacitors are used or not, it does not matter for 1000BASE-KX or 10GBASE-KX4, but for 10GBASE-KR, the answer is on the contrary.

SuggestedRemedy

"It should be noted that there may be various methods for AC-coupling in actual implementations, however, the receiver block should consider the worst case if external AC compacitors are used."

or

"The AC compacitors should be inside of the receiver ".

Proposed Response Response Status C

REJECT.

Requiring that AC-coupling capacitors be integrated into the receiver circuit unnecessarily constrains implementation.

Defining that the receiver use "worst-case" AC-coupling capacitors is likely to have little effect on how receivers are actually tested since there is no commonly accepted definition of what a "worst-case" AC-coupling network is.

CI 72A SC P 129 L # 10

Szczepanek, Andre

Comment Type E Comment Status A

Why are the next page message code field definitions an annex to 10GbaseKR clause 72, rather than BP auto-negotiation clause 73 ?

SuggestedRemedy

change to 73A

Proposed Response Response Status C

ACCEPT.

CI 73 SC 73.5.1.1 P 133 L 18 # 47

Joe , Abler

Comment Type T Comment Status A an_electrical

The transmitter shall comply with the electrical specifications that apply to the supported PHY with the lowest Baud rate. This conflicts with Table 73-1.

SuggestedRemedy

Delete the transmit spec of Table 73-1.

Change line 23 to state that Receiver must operate across electrical specifications in Table 73-1 at TP4

Proposed Response Response Status C

ACCEPT IN PRINCIPLE.

The sentence: "When transmitting DME pages, the transmitter shall comply with the electrical specifications that apply to the supported PHY with the lowest Baud rate." is not valid. For example is the 1000BASE-KX or 10GBASE-KX4 transmitter output voltage is not compatible with the specified input voltage range.

Change to:

"Transmitter characteristics shall meet the specifications in Table 73-1 at TP1 while transmitting DME pages. Receiver characteristics shall meet the specifications in Table 73-1 at TP4 while receiving DME pages."

And, add the following text after Table 73-1 :

"When the PHY has 10GBASE-KX4 capability, DME pages shall be transmitted only on lane 0. The lane 1 to lane 3 transmitters should be disabled as specified in 71.5.7."

Straw Poll #3

In Table 73-1

#1 - Tx voltage max = Rx voltage max = 1600mVpp

#2 - Tx voltage max = Rx voltage max = 1200 mVpp

Only applies to transmission and reception of DME pages, and is measured at TP1 and TP4, respectively.

#1 - 4

#2 - 8

IEEE P802.3ap draft 1.0 Comments

CI 73 SC 73.5.1.1 P 133 L 32 # 48

Joe , Abler

Comment Type T Comment Status R

Max value of 1200mV conflicts with launch voltage range of KX and KX4 specs.

SuggestedRemedy

Change range to 200-1600

Proposed Response Response Status C

REJECT.

Maximum launch is constrained by the 10GBASE-KR receiver input limits.

See also comment #47

CI 73 SC 73.9.2 P 152 L 12 # 53

Ganga, Ilango

Comment Type T Comment Status A

Accepted Comment #161 in Jun interim (regarding data detect timer values) has not been implemented in Table 73-7. This has been partly implemented in the text on page 151 (timer definitions). Please incorporate this change to table 73-7 as per the accepted resolution "final_D0.91.pdf". Also fix the corresponding text for data_detect_min_timer on page 151.

SuggestedRemedy

In table 73-7 line 12, change data_detect_min_timer max value to be 3.0ns
In table 73-7 line 13, change data_detect_max_timer min value to be 3.4ns

Page 151, line 21: change text "shall expire 1.6-2.4 ns" to read as "shall expire 1.6-3.0 ns"

Proposed Response Response Status C

ACCEPT.

CI 73 SC 73.9.2 P 152 L 20 # 52

Ganga, Ilango

Comment Type T Comment Status A

Add clock_detect_min_timer and clock_detect_max_timer to Table 73-7 - Timer min/max summary. These values have been accepted by the task force in Jun interim and the state machine changes and timer definition and values has been already added to the draft 1.0. However the table update has been missed out.

SuggestedRemedy

Insert the following lines to the Table 73-7 below line #14:

clock_detect_min_timer Min 4.8, Max 6.2
clock_detect_max_timer Min 6.6, Max 8.0

Proposed Response Response Status C

ACCEPT.

CI 73 SC 73.9.5 P 157 L 1 # 60

Healey, Adam

Comment Type T Comment Status A

Nonce field should not be transmitted in next pages.

SuggestedRemedy

Implement state machine changes described in marris_01_0705.pdf.

Proposed Response Response Status C

ACCEPT.

CI 99 SC P L # 6

Szczepanek, Andre

Comment Type E Comment Status A

Front matter has copyright 2002

SuggestedRemedy

change to 2005

Proposed Response Response Status C

ACCEPT.