*Cl* **45** *SC* *P* **27** *L* **11** # 1
Marris, Arthur Cadence

*Comment Type* **E** *Comment Status* **A**

Spelling of therefore

*SuggestedRemedy*

Change 'therefor' to 'therefore'

*Response* *Response Status* **C**

ACCEPT.

*Cl* **72** *SC* **72.7.1.9** *P* **156** *L* **1** # 2
Marris, Arthur Cadence

*Comment Type* **E** *Comment Status* **A** *done*

Spelling of 'pseudo'

*SuggestedRemedy*

Change 'psuedo' to 'pseudo' on pages 156, 174 (4 times), 178 and 194.

*Response* *Response Status* **C**

ACCEPT.

*Cl* **45** *SC* **45.2.7** *P* **50** *L* **4** # 3
Marris, Arthur Cadence

*Comment Type* **T** *Comment Status* **A**

Table 45-117 AN MMD registers does not match what is in 802.3an.

*SuggestedRemedy*

Alter Table 45-117 so it just lists changes to Table 45-117 in 802.3an.
That is add the entry 7.48 for BP Ethernet status.

*Response* *Response Status* **C**

ACCEPT.

also see comment 163.

*Cl* **45** *SC* **45.2.7.2** *P* **56** *L* **10** # 4
Marris, Arthur Cadence

*Comment Type* **T** *Comment Status* **R**

The descriptions for bits 7.1.11 and 7.1.10 in Table 45-119 do not seem right. For a generic AN MMD these bits will not necessarily be set to 1.

*SuggestedRemedy*

Reword descriptions in the table to be more generic:
1 = Local device is next page able
0 = Local device is not next page able

Add subclauses to define these bits and state the bit is set to 1 for the 802.3ap PHY's as next pages are mandatory for these PHY's.

*Response* *Response Status* **C**

REJECT.

These bits will be deleted as per comment 166.

*Cl* **45** *SC* **45.2.7.3** *P* **58** *L* **4** # 5
Marris, Arthur Cadence

*Comment Type* **T** *Comment Status* **A**

Table 45-120 needs to be redone as a modification of the table in 802.3an.

*SuggestedRemedy*

Say this is as Table 45-120 in 802.3an with additions for echoed nonce and technology ability field bits 10 to 26.

Do something similar for Table 45-121.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Also need to add references to Clause 73 in addition to Clause 28 and change the descriptive text so that it reads as a modification to 802.3an.

See also comments 167 and 168.

*Cl* **45** *SC* **45.2.7.5** *P* **59** *L* **48** # 6

Marris, Arthur Cadence

*Comment Type* **T** *Comment Status* **A**

I think 45.2.7.5 and 45.2.7.6 are the same as what is 802.3an and so can be removed from 802.3ap.

*SuggestedRemedy*

Consider deleting these two subclauses 45.2.7.5 and 45.2.7.6 from 802.3ap.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

The descriptions of the LP and LD NP registers need to reference 802.3an.

Tables 45-122 and 45-123 will be done as modifications to 802.3an.

---

*Cl* **45** *SC* **45.5** *P* **63** *L* **1** # 7

Marris, Arthur Cadence

*Comment Type* **T** *Comment Status* **A**

Remove PICS entries that are already done in 802.3an.

*SuggestedRemedy*

Remove PICS entries that are already done in 802.3an.

*Response* *Response Status* **C**

ACCEPT.

---

*Cl* **72** *SC* **72.6.11.2** *P* **135** *L* **42** # 8

Marris, Arthur Cadence

*Comment Type* **T** *Comment Status* **A** *done*

Note this comment refers to the comparison version of the document. In the clean document the Clause number is 72.6.10.2.

Add some text to say DME is different from token ring.

*SuggestedRemedy*

Add the following sentence to the end of the paragraph. ""The DME defined for backplane Ethernet is different from that defined for token ring in IEEE Std 802.5.""

Also add this text to 73.1, page 171 line 21, where DME is introduced for auto-negotiation.

*Response* *Response Status* **C**

ACCEPT.

---

*Cl* **73** *SC* **73.3** *P* **172** *L* **45** # 9

Marris, Arthur Cadence

*Comment Type* **T** *Comment Status* **A**

The sentence ""The Auto-Negotiation function may provide an optional Management function that provides a control and status mechanism."" seems redundant as it repeats what is said on line 33.

*SuggestedRemedy*

Delete the sentence ""The Auto-Negotiation function may provide an optional Management function that provides a control and status mechanism."".

On line 33 change ""Management may provide additional control of auto-Negotiation through the Management function, but the presence of a management agent is not required.""

to ""Management may provide additional control of Auto-Negotiation through an optional Management function, but the presence of a management agent is not required.""

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

The sentences are somewhat redundant with each other, but they also are incorrect since 73.8 says management is mandatory:
The clause 45 Management Data Input/Output (MDIO) interface shall be used for logical interface to access
the device registers for Auto-Negotiation and other management purposes.

Delete the sentence on line 45 and change the sentence on line 33 to:
""A management interface provides control and status of auto-Negotiation, but the presence of a management agent is not required.""

Also delete the PICS item MGT from 73.11.3. There is no management function defined formally and the management interface is covered under other PICS items.

*Cl* **73** *SC* **73.5.3** *P* **175** *L* **41** *#* 10

Marris, Arthur Cadence

*Comment Type* **TR** *Comment Status* **R**

It is not clear why T1 has a 0.01% percent tolerance and the rest of the timing specs have a 0.2ns tolerance.

Also this timing spec needs to work with the SerDes that are going to be used to implement AN. This suggests that the receive spec should assume a 100ppm signaling speed and not allow clock edge to data edge separation that can vary by as much as 400ps cycle to cycle.

*SuggestedRemedy*

Delete the sentence ""Transitions shall occur within +/- 0.2ns of their ideal positions.""

Change the tolerance on T2, T3, T5 and T6 to +/- 0.01%.

*Response* *Response Status* **W**

REJECT.

The proposed remedy is not acceptable. The clock tolerance is 0.01 % but these are specifications for pulse widths and when clock edges fall. If we set them to 0.01% tolerance as the commenter suggests, there would be no margine for jitter sources including rise/fall time variation.

The AN signalling does not rely on establishing sync with the SERDES. When AN was proposed, a number of SERDES designers told us that the edge density for the AN signalling was too low for their SERDES implementations to maintain lock and the task force agreed that SERDES lock during AN was not an objective.

Furthermore, these tolerances were reviewed by the Task Force as a result of the 2.0 ballot and were not changed. The edited sentence was added to clarify why the T1 tolerance was different than the edge tolerances but it doesn't represent a technical change.

Motion #1 - Move to reject comment with text above.
Moved by Pat Thaler
Seconded by Ilango Ganga

Technical (>=75%)
Yes - 12
No - 0
Abstain - 7

Motion Passes

*Cl* **45** *SC* **45.2.1** *P* **31** *L* **44** *#* 11

McClellan, Brett Solarflare

*Comment Type* **E** *Comment Status* **A**

page 31 Table 45-5 should be 45-4
page 32 Table 45-1 should be 45-5

*SuggestedRemedy*

Make changes as described.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

This is a fault with the change-bar document. The base document is correct.

In the non-change-bar document the PMA/PMD control 1 register is correctly titled 45-4 and status register 1 is not present as 802.3ap makes no changes to Table 45-5 (PMA/PMD status register 1).

This response also covers comments 155 and 157

*Cl* **69A** *SC* **2.1** *P* **172** *L* **28** *#* 12

Moore, Charles Avago Technologies

*Comment Type* **T** *Comment Status* **A**

This spec does not account for the possibility that Bct for the interference tolerance test channel may be < 0.

*SuggestedRemedy*

Replace: ""The amplitude delivered by the pattern generator to the test channel shall be no greater than the specified minimum transmitter output amplitude for the port type being tested as modified by the the parametr Btc defined in 69A.2.2""

with : ""The amplitude delivered by the pattern generator to the test channel shall be no greater thatn the specified minimum transmitter output amplitude for the port type being tested time 10^(Bct/20)

in subclause 69A.2.2 delete ""If Bct > 2, then the amplitude of the pattern generator may be increased by up to Bct-2dB above the maximum amplitude otherwise defined.""

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Proposed text will be used with appropriate spelling and style corrections.

*Cl* **69B** *SC* **4.2** *P* **178** *L* **50** *#* 13

Moore, Charles Avago Technologies

*Comment Type* **T** *Comment Status* **R**

To help make the interference tolerance test and the interconnect characteristics more compatable, use similar methods to specify the interconnect channel and the interference tolerance test channel. Verbiage available in a supporting presentation

*SuggestedRemedy*

use recommended text

*Response* *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

---

*Cl* **70** *SC* **6.1** *P* **52** *L* **46** *#* 14

Moore, Charles Avago Technologies

*Comment Type* **E** *Comment Status* **A** *e*

Missing ""."" at end of sentence

*SuggestedRemedy*

change ""carefully designed"" to ""carefully designed.""

*Response* *Response Status* **C**

ACCEPT.

---

*Cl* **70** *SC* **7.1** *P* **54** *L* **46** *#* 15

Moore, Charles Avago Technologies

*Comment Type* **T** *Comment Status* **A** *e*

p-p randon jitter does not make sense without a BER

*SuggestedRemedy*

make note 3 apply to RJ.

*Response* *Response Status* **C**

ACCEPT.

Related #19

---

*Cl* **70** *SC* **7.2.1** *P* **58** *L* **28** *#* 16

Moore, Charles Avago Technologies

*Comment Type* **E** *Comment Status* **A** *e*

In sub clause title, interference tolerance is mis-spelled

*SuggestedRemedy*

change ""Receiver inference tolerance"" to ""Receiver interference tolerance""

*Response* *Response Status* **C**

ACCEPT.

---

*Cl* **70** *SC* **6.1** *P* **53** *L* **1** *#* 17

Moore, Charles Avago Technologies

*Comment Type* **T** *Comment Status* **A** *e*

The Sentence:
""TP1 and TP4 are after a separatable connector (ie the Tx includes the effect of thsi sepatable connector, whereas the receiver does not)..""

is wrong: there is no separatable connector between TP4 and the Tx IC.

*SuggestedRemedy*

delete:
""TP1 and TP4 are after a separatable connector (ie the Tx includes the effect of thsi sepatable connector, whereas the receiver does not)..""

*Response* *Response Status* **C**

ACCEPT.

Related #110, #111

---

*Cl* **70** *SC* **7.2.1** *P* **58** *L* **33** *#* 18

Moore, Charles Avago Technologies

*Comment Type* **E** *Comment Status* **A** *e*

Test pattern is a interference tolerance parameter, should be in table

*SuggestedRemedy*

delete:

The test pattern for this measurement shall be the jitter test frame defined in 59.7.1

add a line to table 70-7

Test pattern | jiteer test frame defined in 59.7.1 |

*Response* *Response Status* **C**

ACCEPT.

*Cl* **71** *SC* **7.1** *P* **71** *L* **35** *#* 19
Moore, Charles Avago Technologies

*Comment Type* **T** *Comment Status* **A** *e*

p-p randon jitter does not make sense without a BER

*SuggestedRemedy*

make note 2 apply to RJ

*Response* *Response Status* **C**

ACCEPT.

Related #15

*Cl* **71** *SC* **6.1** *P* **69** *L* **1** *#* 20
Moore, Charles Avago Technologies

*Comment Type* **T** *Comment Status* **A** *e*

The Sentence:
""TP1 and TP4 are after a separatable connector (ie the Tx includes the effect of thsi sepatable connector, whereas the receiver does not)..""

is wrong: there is no separatable connector between TP4 and the Tx IC.

*SuggestedRemedy*

delete:
""TP1 and TP4 are after a separatable connector (ie the Tx includes the effect of thsi sepatable connector, whereas the receiver does not)..""

*Response* *Response Status* **C**

ACCEPT.

Text will be removed
Related 17, 110, 111

*Cl* **71** *SC* **7.2.1** *P* **76** *L* **23** *#* 21
Moore, Charles Avago Technologies

*Comment Type* **E** *Comment Status* **A** *e*

In sub clause title, interference tolerance is mis-spelled

*SuggestedRemedy*

change ""Receiver inference tolerance"" to ""Receiver interference tolerance""

*Response* *Response Status* **C**

ACCEPT.

*Cl* **71** *SC* **7.2.1** *P* **76** *L* **28** *#* 22
Moore, Charles Avago Technologies

*Comment Type* **E** *Comment Status* **A** *e*

Test pattern is a interference tolerance parameter, should be in table

*SuggestedRemedy*

delete:

The test pattern for this measurement shall be the jitter tolerance test pattern of 48A.5

add a line to table 70-7

Test pattern | jitter tolerance test pattern of 48A.5 |

*Response* *Response Status* **C**

ACCEPT.

*Cl* **71** *SC* **6.8** *P* **70** *L* **34** *#* 23
Moore, Charles Avago Technologies

*Comment Type* **E** *Comment Status* **A** *e*

The statement ""The transmitters shall not be disabled when loopback mode is enabled."" is at best mis-leading and probably completely incorrect. Clause 70 gives ""Transmitter operation shall be independent of loopback mode.""

*SuggestedRemedy*

use wording from clause 70.

*Response* *Response Status* **C**

ACCEPT.

*Cl* **71** *SC* **7.1.1** *P* **72** *L* **7** *#* 24
Moore, Charles Avago Technologies

*Comment Type* **E** *Comment Status* **A** *e*

My pdf shows part of figure 71-2 displaced into Figure 71-3.

*SuggestedRemedy*

Clean up figures

*Response* *Response Status* **C**

ACCEPT.

*Cl* **72** *SC* **7.2.1** *P* **108** *L* **28** # 25
Moore, Charles Avago Technologies

*Comment Type* **E** *Comment Status* **A** *done*

Test pattern is a interference tolerance parameter, should be in table

*SuggestedRemedy*

delete:

The test pattern for this measurement shall be PRBS23

add a line to table 70-7

Test pattern | PRBS23 |

*Response* *Response Status* **C**

ACCEPT.

*Cl* **72** *SC* **6.1** *P* **88** *L* **48** # 26
Moore, Charles Avago Technologies

*Comment Type* **T** *Comment Status* **A** *done*

The Sentence:
""TP1 and TP4 are after a separatable connector (ie the Tx includes the effect of thsi sepatable connector, whereas the receiver does not)..""

is wrong: there is no separatable connector between TP4 and the Tx IC.

*SuggestedRemedy*

delete:
""TP1 and TP4 are after a separatable connector (ie the Tx includes the effect of thsi sepatable connector, whereas the receiver does not)""

*Response* *Response Status* **C**

ACCEPT.

See comment #112

*Cl* **72** *SC* **6.10.2.6** *P* **94** *L* **46** # 27
Moore, Charles Avago Technologies

*Comment Type* **E** *Comment Status* **A** *done*

Typo in Figure 72-3 shows PRBS31 where PRBS11 is intended

*SuggestedRemedy*

correct Figure 72-3

*Response* *Response Status* **C**

ACCEPT.

Replace 'PRBS31' with 'PRBS11' in Figure 72-3.

*Cl* **72** *SC* **6.10.2.7** *P* **95** *L* **1** # 28
Moore, Charles Avago Technologies

*Comment Type* **E** *Comment Status* **A** *done*

this sub-clause is empty, but it should include .8, .9, .10, and .11

*SuggestedRemedy*

re-number 72.6.10.2.8 as 72.6.10.2.7.1
re-number 72.6.10.2.9 as 72.6.10.2.7.2 etc

*Response* *Response Status* **C**

ACCEPT.

*Cl* **72** *SC* **6.10.2.8** *P* **95** *L* **3** # 29
Moore, Charles Avago Technologies

*Comment Type* **E** *Comment Status* **R**

MAX_LIMIT is not constance since it depends on other coefficent values.

*SuggestedRemedy*

Move MAX_LIMIT to Variables section

*Response* *Response Status* **C**

REJECT.
I understand the concept but I think it would be more confusing to call it a variable

*Cl* **72** *SC* **6.10.2.8** *P* **95** *L* **5** *#* 30

Moore, Charles Avago Technologies

*Comment Type* **E** *Comment Status* **R**

Many of these constants and variables are actually arrays. Show this

*SuggestedRemedy*

add [1:-1] to:

MIN_LIMIT, MAX_LIMIT, coefficient, dec, inc, hold, new_coeff, update_status

*Response* *Response Status* **C**

REJECT.

---

*Cl* **72** *SC* **7.2.1** *P* **108** *L* **36** *#* 31

Moore, Charles Avago Technologies

*Comment Type* **TR** *Comment Status* **R**

As indicated by moore_02_0605 and amplified by moore_c1_1105, and EITbase value of 15mV will not guarantee a receiver which will work under worst case channel loss and ACR.

*SuggestedRemedy*

change EITbase value to 27mV p-p

*Response* *Response Status* **U**

REJECT.

Suggested remedy has not been demonstrated to be technically complete. Additional investigation is required to refine relationships between Interference tolerance testing and channel parameters.

See moore_03_0106.

Motion #6
Technical (>=75%)
Accept proposed response.
Moved by Charles Moore.
Second by Tom Palkert.

All
Yes - 21
No - 0
Abstain - 0

Motion Passes

---

*Cl* **74** *SC* **74.6.1** *P* **217** *L* **45** *#* 32

Healey, Adam Agere Systems

*Comment Type* **E** *Comment Status* **A**

Definition of variable t is not necessary.

*SuggestedRemedy*

Change to:

...correct an error burst up to 11 bits per block.

*Response* *Response Status* **C**

ACCEPT.

---

*Cl* **74** *SC* **74.6.3** *P* **218** *L* **35** *#* 33

Healey, Adam Agere Systems

*Comment Type* **E** *Comment Status* **A**

module -> sublayer

*SuggestedRemedy*

Per comment.

*Response* *Response Status* **C**

ACCEPT.

---

*Cl* **74** *SC* **74.6.1** *P* **217** *L* **40** *#* 34

Healey, Adam Agere Systems

*Comment Type* **T** *Comment Status* **A**

Is it clear what order the parity bits are inserted into the frame? It is not clear to me from this section or section 74.6.4.4

*SuggestedRemedy*

Add clarifying statements describing which bit of the 32-bit parity check word generated by the algorithm defined in 74.6.4.4 is transmitted first.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Implement text per proposed remedy.

Also refer to comment #179

*Cl* **74** *SC* **74.6.4.4.1** *P* **221** *L* **47** # 35
Healey, Adam Agere Systems

*Comment Type* **E** *Comment Status* **A**

Inconsistent use of PN-2112 and PN2112.

*SuggestedRemedy*

Choose one and use throughout the clause (check text and figures).

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Use PN-2112 throughout the clause.

Change PN2112 to PN-2112 in Figure 74-4 (2 occurrences)

*Cl* **74** *SC* **74.6.4.4.1** *P* **221** *L* **53** # 36
Healey, Adam Agere Systems

*Comment Type* **E** *Comment Status* **A**

What is the value of this footnote? If the equation and polynomial are inconsistent, correct or delete the incorrect version. If they are consistent, then the footnote is irrelevant.

*SuggestedRemedy*

The equation and figure look consistent. Delete the footnote.

*Response* *Response Status* **C**

ACCEPT.

*Cl* **74** *SC* **Figure 74-3** *P* **221** *L* **14** # 37
Healey, Adam Agere Systems

*Comment Type* **E** *Comment Status* **A**

Gratuitous use of capital letters. Capitalize text in the figure in a manner consistent with the IEEE Style guide. See also Figure 74-5.

*SuggestedRemedy*

Per comment.

*Response* *Response Status* **C**

ACCEPT.

*Cl* **74** *SC* **Figure 74-7** *P* **223** *L* **44** # 38
Healey, Adam Agere Systems

*Comment Type* **ER** *Comment Status* **A**

Flow diagrams do not use state diagram conventions in 1.2 (as extended in 21.5). See also Figure 74-8.

*SuggestedRemedy*

Either remove flow diagrams and describe the requirements in text, or re-draw the figures to follow the appropriate state diagram conventions (must also include subclauses defining state diagram constants, variables, functions, etc.).

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

Provide state diagrams as per conventions in 1.2 (as extended in 21.5)

Also refer to comment #181

*Cl* **74** *SC* **74.7** *P* **225** *L* **1** # 39
Healey, Adam Agere Systems

*Comment Type* **T** *Comment Status* **A**

Why define a test pattern generator and checker that is identical to the one defined in clause 49? This clause assumes that a clause 49 PCS is present! I see this as an unnecessary duplication.

*SuggestedRemedy*

Remove test pattern generator/checker requirements (subclauses 74.7 and 74.8).

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Refer response to comments #62, 134

*Cl* **74** *SC* **74.6.4.4** *P* **220** *L* **34** # 40
Healey, Adam Agere Systems

*Comment Type* **E** *Comment Status* **A**

Per the style guide, variables need to be in italics. This would include g(x), p(x), r(x), m(x), etc. wherever they occur in the text.

*SuggestedRemedy*

Per comment.

*Response* *Response Status* **C**

ACCEPT.

*Cl* **00** *SC* **00** *P* *L* *#* 41

Healey, Adam Agere Systems

*Comment Type* **ER** *Comment Status* **A**

PICS are no longer aligned with associated text.

*SuggestedRemedy*

Check PICS against requirements of the associated clauses and ensure proper alignment.

*Response* *Response Status* **W**

ACCEPT.

*Cl* **34** *SC* **34.1** *P* **25** *L* **32** *#* 42

Healey, Adam Agere Systems

*Comment Type* **E** *Comment Status* **A** *e*

Delete extra period at end of sentence. See also 44.1.1 (line 45)

*SuggestedRemedy*

Per comment.

*Response* *Response Status* **C**

ACCEPT.

*Cl* **45** *SC* **Table 45-3** *P* **30** *L* **40** *#* 43

Healey, Adam Agere Systems

*Comment Type* **T** *Comment Status* **A**

Is this the best place to locate FEC corrected/uncorrected blocks counters? The placement not only implies that the FEC sublayer is associated with the PMA/PMD sublayer but also that it is associated with the 10GBASE-KR PMA/PMD sublayer. Association with the PMA/PMD is acceptable to me (although one could consider allocating a new MMD for this sublayer). However, my understanding was that the FEC sublayer was given its own subclause to create generic facility for PHYs using the 10GBASE-R PCS, and its was not exclusive to 10GBASE-KR.

*SuggestedRemedy*

1. Move the FEC corrected and uncorrected block counters to a separate section of MMD 1 and remove the 10GBASE-KR label.
2. Create FEC specific control and status registers and place in the same section with the counters.
3. Re-locate the FEC control bits currently located in 1.150 to the newly created FEC control register.
4. Add appropriate status bits to the newly created FEC status register (e.g. FEC block synchronization)

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Modify text per ganga_01_0106 with necessary editorial license.

*Cl* **45** *SC* **45.2.1.76.5** *P* **38** *L* **23** *#* 44

Healey, Adam Agere Systems

*Comment Type* **E** *Comment Status* **A**

How are decoding errors indicated to the PCS sublayer?

*SuggestedRemedy*

Add reference to FEC decoding section (74.6.4.5.1).

*Response* *Response Status* **C**

ACCEPT.

*Cl* **45** *SC* **45.2.1.85** *P* **49** *L* **1** # 45

Healey, Adam Agere Systems

*Comment Type* **E** *Comment Status* **A**

Typo: T1000BASE-KX -> 1000BASE-KX

*SuggestedRemedy*

Per comment.

*Response* *Response Status* **C**

ACCEPT.

*Cl* **69B** *SC* **Table 69B-1** *P* **242** *L* **30** # 46

Healey, Adam Agere Systems

*Comment Type* **T** *Comment Status* **A**

Someone needs to remind me why we have included both green and grey confidence limits in this annex.

1. This is an informative annex. Design to these recommendations is an option, and if one chooses to deviate from these recommendations, it is implied that you do so at your own risk. Are we saying that deviation from the gray region guarantees that the interface will not work? I believe that this is a bold statement to make, given the limited amount of data that has been studied. Therefore, I see a blurred distinction between being within the grey zone and being outside the gray zone.
2. The gray-green methdodology is only applied to insertion and insertion loss deviation, but not to fitted attenuation or ICR. Why the double standard? Clearly there are secondary limits for fitted attenuation or ICR that would give us higher confidence, but no statement of those higher confidence limits are included.
3. The two sets of specifications add a great deal of clutter in Annex 69B and present the possibility of generating confusion for the reader that had not walked through the process with the Task Force.

Given the cluster, maintenance overhead, and potential confusion surrounding these specification, for very limited benefit, I suggest removing the low confidence set from the Annex.

*SuggestedRemedy*

Remove low-confidence curves for insertion loss and insertion loss deviation from Annex 69B (ILmin1 and ILDmin1). These are informative specifications and unless the grey zone delimits an area that absolutely will not work, I no longer see the value in making the distinction.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Implement changes per healey_01_0106

Motion
Technical (75%)
Accept proposed response.

Moved by Gourgen Oganessyan
Second by John D'Ambrosia

All
Yes - 22
No - 0
Abstain - 0

Motion Passes

*Cl* **70** *SC* **70.7.2.1** *P* **98** *L* **37** # 47

Healey, Adam Agere Systems

*Comment Type* **E** *Comment Status* **A** *e*

inference -> interference

*SuggestedRemedy*

Per comment

*Response* *Response Status* **C**

ACCEPT.

*Cl* **70** *SC* **Table 70-11** *P* **99** *L* **16** # 48

Healey, Adam Agere Systems

*Comment Type* **T** *Comment Status* **A** *e*

It not clear to me how the RMS jitter number was derived. My impression was that is was supposed to be computed from the transmit DJ and RJ limits from the port type under test. Assuming the DJ is sinusoidal jitter with peak-peak amplitude DJpp, and that RJ is Gaussian jitter with peak-peak amplitude RJpp at 1E-12, then:

SJrms = sqrt( (DJpp^2)/8+(RJpp/14.06)^2 )

For DJpp = 0.10 UI and RJpp = 0.15 UI (derived from Table 71-4), I get 37 mUI. Note that this formula properly predicts the 61 mUI called out for 10GBASE-KX4 and the 54 mUI called out for 10GBASE-KR. How was 31 mUI derived?

*SuggestedRemedy*

State how 31 mUI was derived, or correct the value based on the calculation above.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Correct value to 37 mUI.

*Cl* **70** *SC* **70.6.4** *P* **90** *L* **46** # 49

Healey, Adam Agere Systems

*Comment Type* **E** *Comment Status* **A** *e*

Quotation marks are not necessary. Remove quotation marks from SIGNAL_DETECT and OK. See also 71.6.2 (page 113, line 4)

*SuggestedRemedy*

Per comment.

*Response* *Response Status* **C**

ACCEPT.

*Cl* **71** *SC* **71.6.5** *P* **113** *L* **6** # 50

Healey, Adam Agere Systems

*Comment Type* **T** *Comment Status* **A** *e*

Global PMD signal detect was removed but the lane-by-lane signal detect persists. It is necessary to harmonize 71.6.4 and 71.6.5 so that they are consistent (in fact, it is not necessary to break them out into separate subclauses). For the purposes of management, there is a lane-by-lane signal detect shall be reported as 'OK'. Global signal detect, by definition, is the AND of the lane-by-lane signal detect indications and will therefore be reported as OK.

*SuggestedRemedy*

Remove 71.6.5. Rework 71.6.4 to address lane-by-lane signal detect (reported as OK for the purposes of management) and global signal detect (reported as OK for purposes management and signaling the primitive).

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Editorial license granted to implement suggested remedy.

Related #104

*Cl* **72** *SC* **Figure 72-5** *P* **141** *L* **37** # 51

Healey, Adam Agere Systems

*Comment Type* **E** *Comment Status* **A** *done*

PRBS31 -> PRBS11

*SuggestedRemedy*

Per comment.

*Response* *Response Status* **C**

ACCEPT.

*Cl* **72** *SC* **Table 72-11** *P* **158** *L* **5** *#* 52

Healey, Adam Agere Systems

*Comment Type* **TR** *Comment Status* **A** *done*

The requirements in Table 72-11 are not realizable. Assuming that c(1), c(0), and c(-1) are controlled independently, an adjustment of any of the coefficients will yield changes in all of the measured voltages Vpre, Vpst, and Vss.

Given that:

Vpre = -c(1)-c(0)+c(-1)
Vpst = -c(1)+c(0)+c(-1)
Vss = c(1)+c(0)+c(-1)

1. An increment of c(1) decreases Vpre and Vpst, and increases Vss by the step size
2. An increment of c(0) decreases Vpre, and increases Vpst and Vss by the step size
3. An increment of c(-1) increases Vpre, Vpst, and Vss by the step size

and vice versa for decrement requests

*SuggestedRemedy*

Correct Table 72-11 to be consistent with the behavior described in the comment.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Update 72-7 per palkert_01_0106.

*Cl* **73** *SC* **73.2** *P* **173** *L* **15** *#* 53

Healey, Adam Agere Systems

*Comment Type* **T** *Comment Status* **R**

Auto-negotiation primitives are being shown with the PMA as the client, yet the PMA requirement to implement these primitives is being cited in the respective PMD subclauses. I am not comfortable placing PMA requirements (and PICS) in PMD subclauses. Also, the definition of the primitives does not appear to rely on any specific PMA function. Rather than crack open the PMA clauses to insert the AN primitive requirements, I suggest making the PMD the auto-negotiation client, and updating the Fibure 73-1, 73.9, and PMD subclauses appropriately.

*SuggestedRemedy*

Change the Auto-Negotiation client from the PMA to the PMD.

*Response* *Response Status* **C**

REJECT.

The definition of the primitives does rely on a PMA specific function. The PMD doesn't have any basis on which to generate link_status. It doesn't have a squelch and even if it did have a squelch that wouldn't provide a way to differentiate between 1000BASE-KX, 10GBASE-KX4 and 10GBASE-KR signalling. Therefore, the PMD can't provide for parallel detect.

That is why the link_status primitive needs to come from the PMA.

*Cl* **74** *SC* **74** *P* **214** *L* **1** # 54

Healey, Adam Agere Systems

*Comment Type* **T** *Comment Status* **A**

Do we want to make this specific to 10GBASE-KR? It appears to me that this FEC sublayer could be used by any PHY incorporating a 10GBASE-R PCS.

*SuggestedRemedy*

Change title to:

Forward Error Correction (FEC) for 10GBASE-R Physical Layer Signaling Systems

...or something similar. If accepted, the text of this clause needs to be updated appropriately (for example 74.2 Objectives).

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

At present the FEC control, status bits are in 10GBASE-KR control register, if this comment is accepted move this register bits to separate FEC control and status registers in order for it to be used by other 10GBASE-R PHYs.

Add statement to Clause 74 to indicate that Clause 74 FEC sublayer is used by 10GBASE-KR PHY.

Editorial license granted to change all references to 10GBASE-KR to 10GBASE-R.

*Cl* **45** *SC* **45.2.1.1** *P* **31** *L* **07** # 55

Barrass, Hugh Cisco Systems

*Comment Type* **TR** *Comment Status* **A**

Comments submitted to .3an sponsor ballot to support 10G/1G (/100/10) autonegotiation will have a significant effect on much of Clause 45 for .3ap.

This comment is intended to ensure that .3ap is changed appropriately after the resolution of .3an comments.

*SuggestedRemedy*

Make changes following resolution of .3an sponsor ballot comments.

Keep this clause open for changes until .3an is complete.

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

IEEE P802.3ap will be based on IEEE Std 802.3-2005 as amended by IEEE P802.3an and P802.3aq. If IEEE P802.3an is published before P802.3ap, updates to the base text (e.g. the text being modified by P802.3ap) will be editorial changes to P802.3ap draft.

Synchronization will be assured prior to Sponsor Ballot. However, changes made to P802.3an/Draft 3.0 will not be reflected in P802.3ap/Draft 2.2 as the target recirculation ballot opening date is prior to the time where P802.3an/Draft 3.1 will be available.

*Cl* **72** *SC* **72.6.2** *P* **133** *L* **38** # 56

Barrass, Hugh Cisco Systems

*Comment Type* **TR** *Comment Status* **R**

This is a "pile on" to comment #613 (20613) from draft 2.0.

*SuggestedRemedy*

Change the BER target to 10E-15 as proposed and add an elevated noise test to verify the system behavior...

*Response* *Response Status* **W**

REJECT.

The Task Force objective is to support a BER of 1E-12 or better, and therefore the performance targets are within the objectives.

However, the Task Force recognizes that some systems may require backplane links that perform better than the stated 1E-12 target. It is suggested that the Forward Error Correction sublayer defined in Clause 74 be utilized to supply this additional performance. It has been shown in:

http://ieee802.org/3/ap/public/nov05/ganga_02_1105.pdf
http://ieee802.org/3/ap/public/nov05/valliappan_01_1105.pdf

that links exhibiting 1E-9 peformance improve to better than 1E-12. Therefore, links operating at 1E-12 can be expected to improve to 1E-15 or better via use of the Clause 74 FEC.

With regards to testability, the interference tolerance test procedure verifies receiver performance, without FEC, to a BER target of 1E-12 or better. Mathematic techniques may then be applied to derive the receiver performance with the benefit of FEC.

Motion #8
Move to the accept the proposed response.
Technical (>= 75%)
M - Schelto Van Doorn
S - John D'Ambrosia

All
Y - 14
N - 0
A - 1

Motion Passes

*Cl* **69** *SC* **69** *P* **71** *L* **01** # 57

Zimmerman, George Solarflare Communica

*Comment Type* **TR** *Comment Status* **R**

Pile on to Comment #318 (20318). My prior negative TR comment #294 was related, but smaller in scope. I disagree that specifying a channel is only required for "out of the box" applications - I submit that for Ethernet on backplanes to have any value, the backplane connector itself must be considered "out of the box" and an open environment. This is different from the chip-to-chip (XAUI) case cited in the comment response to #318 (20318), in that the circuit card IS a closed environment. A big part of the backplane Ethernet value lies in making the backplane an open environment, and hence, for a PHY vendor to build a PHY to use that environment, the channel must be specified.

*SuggestedRemedy*

see comment #318 (20318)

*Response* *Response Status* **W**

REJECT.

It should be noted that the Task Force voted in favor of specifying normative transmitter/receiver and informative channel Y: 28, N: 1, A: 7 at the May 2005 interim meeting. In addition that Task Force voted Y: 20, N: 1, A: 1 to reject comment #318 (20318)

To the commenter's points:

1. The transmitter and receiver are explicitly defined in Clauses 70, 71, and 72. The required performance of the latter is indicated by the requirements of interference tolerance test procedure, as described in Annex 69A. Thus, there is no ambiguity for the designer regarding the performance targets for compliant devices.

2. The informative recommendations for channel performance in Annex 69B supply guidance for users of the standard regarding what backplane channels are interoperable with compliant devices. This implies a linkage between these recommendations and the performance targets enforced via the interference tolerance test.

3. The danger of specifying the connector as "out of the box" is the implication that the mechanical design and electrical performance of the connector must also be specified (as well as the pin-out of the connector, which will impact crosstalk performance). This will limit the broad market potential of the standard since it would constrain the solution to a single implementation. Abstracting the channel to include the connectors avoids this issue and gives Backplane Ethernet a larger addressable market

4. The specification for open-backplane systems will originate from other organizations such as PICMG. Just as enterprises build generic cable plants to ISO or TIA specifications (not necessarily IEEE specifications), organizations that define open backplane specifications will define the connectors, pin-outs, and performance requirements for systems bearing those respective labels. It is expected that such organizations will base such requirements on the IEEE P802.3ap informative recommendations to ensure

compatibility with compliant Backplane Ethernet devices.

5. The editor would humbly submit that the stated premise that XAUI interconnects are limited to the closed circuit card environment ignores that fact that XAUI channel is defined to include two connectors. Clearly board-board connections were envisioned. In addition, the fact that XAUI does not specify the connector itself has made it adaptable to multiple environments (a variety of pluggable optical module form factors and modular platform backplanes).

Motion #2
Technical (>=75%)
Move to reject comment #57 with response above.
Moved by John D'Ambrosia
Seconded Charles Moore

All
Yes - 22
No - 0
Abstain - 0

Motion Passes

---

*Cl* **72** *SC* **72** *P* **131** *L* **01** # 58

Gyurek, Russ Cisco Systems

*Comment Type* **TR** *Comment Status* **R**

Reject. In the current form, this cannot support a BER of 10e-12 on a 10G link, which would be unacceptable

*SuggestedRemedy*

*Response* *Response Status* **W**

REJECT.

The balloter has submitted his comment in a non-responsive form, and does not recommend any changes to the document to resolve his concern.

The Task Force has been shown simulation data from multiple parties indicating that 10 Gigabit serial operation over an electrical backplane is feasible. An optional Forward Error Correction sublayer defined in Clause 74 and has been shown to expand the set of links that may operate a 1E-12, and it is expected that application of this FEC to links that operate at 1E-12 or better will exhibit BER better than 1E-15.

Motion #:7
Move to the accept the proposed response.
Technical (>= 75%)
M - Fulvio Spagna
S - Schelto Van Doorn

All
Yes - 17
No - 0
Abstain - 0

Motion Passes

*Cl* **74** *SC* **3** *P* **215** *L* **47** # 59

Andre, Szczepanek Texas Instruments

*Comment Type* **E** *Comment Status* **A**

The FEC service interface connects to the PMA service interface of the PCS. Ie FEC_SIGNAL.indicate must be connected to the PMA_SIGNAL.indicate input to the PCS. Do we need to explicitly state the mapping between these two interfaces.

*SuggestedRemedy*

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Refer to Comment #178 for remedy

*Cl* **74** *SC* **Table 74-1** *P* **218** *L* **7** # 60

Andre, Szczepanek Texas Instruments

*Comment Type* **E** *Comment Status* **A**

First row of the table is empty

*SuggestedRemedy*

Delete row

*Response* *Response Status* **C**

ACCEPT.

*Cl* **74** *SC* **6.3** *P* **218** *L* **33** # 61

Andre, Szczepanek Texas Instruments

*Comment Type* **E** *Comment Status* **A**

The title of this section does not describe its contents.

*SuggestedRemedy*

Change to ""Composition of the FEC frame"".

*Response* *Response Status* **C**

ACCEPT.

*Cl* **74** *SC* **6.4** *P* **219** *L* **14** # 62

Andre, Szczepanek Texas Instruments

*Comment Type* **E** *Comment Status* **A**

Is there any value in supporting the test-pattern mode given that he pattern will be rescrambled by the PN-2112 pseudo-noise sequence ?

Also applies to 74.7, 74.5 & 74.11.7

*SuggestedRemedy*

Remove test pattern references

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Refer to comments #134, 39

*Cl* **74** *SC* **5.2** *P* **217** *L* **186** # 63

Andre, Szczepanek Texas Instruments

*Comment Type* **ER** *Comment Status* **A**

Section 74.6.4.6 indicates that FEC_SIGNAL.indicate is only asserted once synchronization is achieved.

*SuggestedRemedy*

add ""and FEC block synchronization is achieved""

*Response* *Response Status* **C**

ACCEPT.

Change 74.5.2 as follows:
The FEC generates the FEC_SIGNAL.indication primitive to the 10GBASE-R PCS whenever there is a change in the value of the SIGNAL_OK parameter and FEC block synchronization is achieved.

*Cl* **72** *SC* **Table 72-11** *P* **158** *L* **5** # 64

Andre, Szczepanek Texas Instruments

*Comment Type* **TR** *Comment Status* **A** *done*

The off-axis requirements in this table do not match the governing equations of the transmit equalizer. All 3 measurement points are dependant on all 3 coefficients.

If Vpk is kept constant, a step on any coefficient will affect at least two of the 3 measurement points.

If Vpk is not kept constant, a step on any coefficient will affect all 3 measurement points.

*SuggestedRemedy*

Recalculate the off-axis entries based on the governing equations of the transmit equalizer

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Update table per palkert_01_0106.

*Cl* **72** *SC* **7.1.11** *P* **160** *L* **33** # 65

Andre, Szczepanek Texas Instruments

*Comment Type* **TR** *Comment Status* **R**

Draft 2.0 required that C0 shall be adjusted to maintain Vpk/A over all transmitter states (k). This requirement has been removed in Draft 2.1, and the transmitter output waveform requirements have been changed to render constant Vpk implementations non-compliant.

Implementing Tx equalization on SERDES using assignable CML output fingers is an area-efficient alternative to DAC style structures. Forty fingers of 2.5% meet the performance requirements adopted in May Motion #10, whilst automatically providing constant Vpk. However the coefficient step trading (to/from C0) required to maintain constant Vpk mean that the measured step changes in Table 72-11 are doubled.

We are concerned that the changes in Draft 2.1, preclude the use of natively constant-Vpk transmit structures for no demonstrable benefit. Of course it is possible to make a fingered approach work with non-constant Vpk, by doubling native resolution, or by turning fingers off, but this increases transmitter complexity and area for the dubious benefit of reduced output swing.

*SuggestedRemedy*

Re-instate the constant Vpk requirement, and reflect this requirement in Table 72-11 values. Or allow constant Vpk by providing an additional or modified Table 72-11.

*Response* *Response Status* **C**

REJECT.

Straw Poll #1
a. Enforce constant Vpk control
b. independent control
C. abstain

A - 5
B - 7
C - 11

Motion #3
Technical (>=75%)
Moved to reject the comment.

Moved by Charles Moore
Second by Tom Palkert.

All
Yes - 6
No - 4
Abstain - 12

Motion Fails

Motion #4
Procedural (>=50%)
Move to reconsider Motion #3
Moved by - Andre Szczepanek
Second by - Joe Abler

All
Yes - 20
No - 0
Abstain - 3

Motion passes.

Motion #5
Technical (>=75%)
Motion #3 reconsidered -
"Moved to reject the comment."

Moved by Charles Moore
Second by Tom Palkert.

All
Yes - 23
No - 3
Abstain - 0

802.3 only
Yes - 14
No - 2
Abstain - 1

Motion Passes

---

*Cl* **72** *SC* **72.7.1.10** *P* **156** *L* **20** *#* 66

Mellitz, Richard Intel

*Comment Type* **TR** *Comment Status* **R**

The following line makes the 3 tap FIR structure optional. ""This equalization may be accomplished with a three-tap finite impulse response (FIR) structure as shown in Figure 72-18."" I believe the Rx needs be able to assume the Tx actually will responce in a somewhat perdictable manor.

*SuggestedRemedy*

This equalization shall be accomplished with a three-tap finite impulse response (FIR) structure as shown in Figure 72-18.

*Response* *Response Status* **C**

REJECT.

We do not need to specify the implementation of the specification.

---

*Cl* **70** *SC* **70.7.2.1** *P* **99** *L* **17** *#* 67

Mellitz, Richard Intel

*Comment Type* **TR** *Comment Status* **A** *e*

In Table 70-11 The introduction of RMS jitter in new in the standard and is not consistant with the transmitter specification.

*SuggestedRemedy*

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add footnote indicating the following relationship.

SJrms = sqrt( (DJpp^2)/8+(RJpp/14.06)^2 )

*Cl* **71** *SC* **71.7.2.1** *P* **120** *L* **27** *#* 68

Mellitz, Richard Intel

*Comment Type* **TR** *Comment Status* **A** *e*

In Table 71-9 The introduction of RMS jitter in new in the standard and is not consistant with the transmitter specification.

*SuggestedRemedy*

If jitter is to be used as a receiver tolerance parameter, the jitter terms need to be consistant with the transmitter jitter parameters.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add footnote indicating the following relationship.

SJrms = sqrt( (DJpp^2)/8+(RJpp/14.06)^2 )

*Cl* **72** *SC* **72.7.2.1** *P* **162** *L* **17** *#* 69

Mellitz, Richard Intel

*Comment Type* **TR** *Comment Status* **A** *done*

In Table 72-15 The introduction of RMS jitter in new in the standard and is not consistant with the transmitter specification.

*SuggestedRemedy*

If jitter is to be used as a receiver tolerance parameter, the jitter terms need to be consistant with the transmitter jitter parameters.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add footnote indicating the following relationship.

SJrms = sqrt( (DJpp^2)/8+(RJpp/14.06)^2 )

*Cl* **70** *SC* **70.6.1** *P* **89** *L* **34** *#* 70

Mellitz, Richard Intel

*Comment Type* **TR** *Comment Status* **A** *e*

The following line suggests the transmitter includes the effects of a separable connector. As a silicon provider I would object to having my performance depedant on product not under my control.""TP1 and TP4 are after a separateable connector (ie the Tx includes the effect of this separable connector,whereas the receiver does not).""

*SuggestedRemedy*

Remove this line.

*Response* *Response Status* **C**

ACCEPT.

The text will be removed.

*Cl* **69A** *SC* **69A.2.1** *P* **293** *L* **17** *#* 71

Mellitz, Richard Intel

*Comment Type* **T** *Comment Status* **A**

How the jitter is created is of little consequence. Modulating a the BERT clock source may or may not create the disired effect. The control of jitter is instrument dependant.

*SuggestedRemedy*

Only specify the end result jitter in terms of the transmitter jitter specification.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Modify Figure 69A-1 accordingly (remove frequency synthesizer and clock source blocks).

Change text to implement the requirements below.

"The data rate of the pattern generator shall be offset 200ppm above the reference frequency provided to the DUT.

The pattern generator shall have jitter on its output. For purposes of this test, the jitter consists of 2 parts, sinusoidal jitter at a single frequency no less than 0.004 times the signaling speed and random jitter, measured with a single pole high pass filter with a cut off frequency of 0.004 times the signaling speed. At least 50% of the jitter power shall come from the single frequency sinusoidal jitter. The root-sum-of-squares combination of the two shall have RMS amplitude no less than the RMS jitter specified for the port type being tested."

*Cl* **69A** *SC* **69a.2.2** *P* **234** *L* **51** *#* 72

Mellitz, Richard Intel

*Comment Type* **TR** *Comment Status* **R**

The equation takes a lot of work to interpret and thus is subject to misinterpretation.

*SuggestedRemedy*

Add figures to clarify the equations.

*Response* *Response Status* **C**

REJECT.

The equations are rigorous and sufficiently clear. A figure showing the fit line to the orginal channel for some anecdotal data would not clearly illustrate the acceptance/rejection criteria. The acceptance criteria for the channel is mTC > 1 which by itself would yield a trivial figure.

*Cl* **69A** *SC* **69a.3** *P* **235** *L* **40** *#* 73

Mellitz, Richard Intel

*Comment Type* **T** *Comment Status* **A**

This method if focused on finding the actual EIT votage. For compliance we only need to know if will work or not.

*SuggestedRemedy*

Why can't we just inject the eit voltage and if we get less than 1 error every 2 minutes for KR or 1 error every 20 minutes for KX we are compliant?

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Refer to moore_02_0106.

Replace:

"At each frequency the amplitude is adjusted to give a BERm equal to BERs. At each frequency the extrapolated interference tolerance, EIT, is computed by subtracting EO from the amplitude which yielded BERm equals BERs as measured at the input to the DUT."

with:

"At each frequency, set the amplitude to the frequency dependent EITbaseline + EO, and find BERm. The average of all BERm shall be less than BERs, and no more than 2 adjacent BERm valuse shall exceed BERs."

In Paragraphs 70.7.2.1, 71.7.2.1, and 72.7.2.1
replace:

"The receiver interference tolerance shall be measured as described in Annex 69A with parameters specified in Table 7X-Y. The extrapolated interference tolerance (EIT) shall be greater than EIT baseline as defined in Annex 69A"

with:

"The receiver shall pass the test specified in 69A using the parameters specified in Table 7X-Y"

Editor is given editorial license with integration of text into clause.

*Cl* **69A** *SC* **69A.2.1** *P* **233** *L* **19** *#* 74

Joe , Abler IBM

*Comment Type* **E** *Comment Status* **A**

clarify the statement on random jitter freq. I originally read this as a spec for amount of UI jitter content...

*SuggestedRemedy*

State ""If the pattern generator has random jitter at a frequency above 35% of the signaling speed...""

Also note that it should be 35%, not 0.35%. Same is true for the spec of sinusoidal frequency of 40%

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Overtaken by events. Refer to comment #71

*Cl* **69A** *SC* **69A.2.1** *P* **233** *L* **26** *#* 75

Joe , Abler IBM

*Comment Type* **T** *Comment Status* **A**

The spec no longer requires that training of the pattern generator be completed. It doesn't even require that a 3tap FFE be used. Therefore there's no test of a receiver's adaptive equalization algorithm. It is quite possible that a receiver could easily pass the IT test with the pattern generator set to optimum coefficients, but that receiver would in fact fail in a system because it's adaptive algorithm sets the transmitter to inappropriate values.

*SuggestedRemedy*

Require the test to use the transmitter control to have the receiver's algorithm set the pattern generator FFE taps.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Modify text per abler_02_0106.pdf with the word "normally" removed.

*Cl* **70** *SC* **70.7.1** *P* **92** *L* **20** *#* 76

Joe , Abler IBM

*Comment Type* **E** *Comment Status* **A** *e*

Per the subclause text, transition times are recommended values not compliance values. This isn't clear when referring to the table.

*SuggestedRemedy*

Add a footnote to Table 70.6 to indicate that transition time parameters are recommended values, not compliance values.

*Response* *Response Status* **C**

ACCEPT.

*Cl* **70** *SC* **70.7.1** *P* **92** *L* **21** *#* 77

Joe , Abler IBM

*Comment Type* **E** *Comment Status* **A** *e*

Should indicate that jitter values are max values

*SuggestedRemedy*

add ""max"" after peak-peak in paren field

*Response* *Response Status* **C**

ACCEPT.

*Cl* **71** *SC* **71.7.1** *P* **114** *L* **46** *#* 78

Joe , Abler IBM

*Comment Type* **E** *Comment Status* **A** *e*

Per the subclause text, transition times are recommended values not compliance values. This isn't clear when referring to the table.

*SuggestedRemedy*

Add a footnote to Table 71.4 to indicate that transition time parameters are recommended values, not compliance values.

*Response* *Response Status* **C**

ACCEPT.

*Cl* **71** *SC* **71.7.1** *P* **114** *L* **47** # 79

Joe , Abler IBM

*Comment Type* **E** *Comment Status* **A** *e*

Should indicate that jitter specs are max value

*SuggestedRemedy*

Add ""max"" after peak-to-peak in the paren field

*Response* *Response Status* **C**

ACCEPT.

*Cl* **72** *SC* **72.6.1** *P* **133** *L* **17** # 80

Joe , Abler IBM

*Comment Type* **T** *Comment Status* **A** *done*

TP1 is not after the connector nor does it include the effects of it. This is inconsistent with the diagram and other text.

*SuggestedRemedy*

Delete the statement. Also needs to be done for clause 70 & 71.

*Response* *Response Status* **C**

ACCEPT.

See comment #112

*Cl* **72** *SC* **72.6.6** *P* **134** *L* **32** # 81

Joe , Abler IBM

*Comment Type* **E** *Comment Status* **A** *done*

""A device must be explicitly placed in loopback mode because loopback mode is not the normal mode of operation of a device."" No kidding. Does this statment provide any value? If we were to spell out obvious caveats throughout the doc we'd need a few thousand more pages.

*SuggestedRemedy*

Delete the stmt. Same for clauses 70 & 71.

*Response* *Response Status* **C**

ACCEPT.

*Cl* **72** *SC* **72.6.9** *P* **135** *L* **9** # 82

Joe , Abler IBM

*Comment Type* **T** *Comment Status* **A** *done*

Based on the description, receive fault would be activated during training. I don't believe this is desired.

*SuggestedRemedy*

Change to say that receive fault is set on detection of any implementation specific fault. (i.e., remove sig detect from the condition check).

*Response* *Response Status* **C**

ACCEPT.

*Cl* **72** *SC* **72.6.11.2.3** *P* **137** *L* **4** # 83

Joe , Abler IBM

*Comment Type* **E** *Comment Status* **A** *done*

Spec requires all 3 eq taps to be implemented

*SuggestedRemedy*

Delete ""up to"" from the line.

*Response* *Response Status* **C**

ACCEPT.

*Cl* **72** *SC* **72.6.11.2.3.1** *P* **138** *L* **33** # 84
Joe , Abler IBM

*Comment Type* **T** *Comment Status* **A** *done*

Every aspect of the update procedure is handshaked with the exception of the statement which only allows the update gain to be changed when all coeff fields are set to hold. It's possible that a transmission error during a gain change could cause a receiver to see the gain change when the coeff field are not set to hold. No action is specified for this case.

*SuggestedRemedy*

There's no value to requiring the gain field to only change when update fields are set to hold. Delete the statement.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change
The value of the update gain field shall only be changed if all corresponding coefficient update fields are set to hold.

To

The value of the update gain field shall only be changed if all outstanding coefficient update operations are complete.

*Cl* **72** *SC* **72.6.11.2.3.3** *P* **139** *L* **1** # 85
Joe , Abler IBM

*Comment Type* **E** *Comment Status* **A** *done*

Since there is a gain field which applies to all coeff, referring to the main tap as a gain tap may cause confusion

*SuggestedRemedy*

Change 'or gain' to 'or cursor' Needs to be carried through in other sections.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

*Cl* **72** *SC* **72.6.11.2.4** *P* **139** *L* **7** # 86
Joe , Abler IBM

*Comment Type* **E** *Comment Status* **A** *done*

Cell 15 is of the

*SuggestedRemedy*

delete ""is""

*Response* *Response Status* **C**

ACCEPT.

*Cl* **72** *SC* **72.6.11.2.6** *P* **141** *L* **21** # 87
Joe , Abler IBM

*Comment Type* **E** *Comment Status* **A** *done*

shall be at 512 octect

*SuggestedRemedy*

change ""at"" to ""a""

*Response* *Response Status* **C**

ACCEPT.

*Cl* **72** *SC* **72.7.1** *P* **150** *L* **54** # 88
Joe , Abler IBM

*Comment Type* **T** *Comment Status* **R**

There's no value to making the transition time be a spec compliance point, these should be recommended values. This would provide consistency with clauses 70 & 71

*SuggestedRemedy*

Add a footnote stating the transition times are recommended values. Change the text in section 72.7.1.7 to indicate that these are recommended values.

*Response* *Response Status* **C**

REJECT.

10GBASE-KR does not have a pulse template, hence no limit on transition time. Therefore, the limit is necessary.

*Cl* **72** *SC* **72.7.1** *P* **150** *L* **26** # 89
Joe , Abler IBM

*Comment Type* **E** *Comment Status* **A** *done*

should indicate that jitter specs are max values

*SuggestedRemedy*

Add ""max"" after peak-to-peak in the paren field

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change:
Output jitter (peak-to-peak)

to:
Max Output jitter (peak-to-peak)

*Cl* **72** *SC* **72.7.1** *P* **150** *L* **9** *#* 90

Joe , Abler IBM

*Comment Type* **TR** *Comment Status* **A** *done*

Need a spec for max DCD included in Table 9. This is needed to mitigate the impacts of phase noise amplification.

*SuggestedRemedy*

Add a row in the table indicating max DCD is 0.05UI and that this is a component of total DJ. This is consistent with CEI and also is a reasonable design value. Would also need a corresponding sub-clause

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add a requirement indicating max DCD is 0.05UIpp and that this is a component of total DJ.

see abler_01_0106

---

*Cl* **72** *SC* **72.7.1.2** *P* **152** *L* **5** *#* 91

Joe , Abler IBM

*Comment Type* **E** *Comment Status* **A** *done*

*SuggestedRemedy*

Need to call out eq 72-2 & 72-3 (as opposed to 72-1 & 72-2)

*Response* *Response Status* **C**

ACCEPT.

---

*Cl* **72** *SC* **72.7.1.4** *P* **152** *L* **32** *#* 92

Joe , Abler IBM

*Comment Type* **E** *Comment Status* **A** *done*

*SuggestedRemedy*

delete ""Table""

*Response* *Response Status* **C**

ACCEPT.

---

*Cl* **72** *SC* **72.7.1.5** *P* **154** *L* **48** *#* 93

Joe , Abler IBM

*Comment Type* **E** *Comment Status* **R** *done*

*SuggestedRemedy*

May want to add acceptance and rejection regions to Figs 72-15 & 72-16 for consistency with rest of doc.

*Response* *Response Status* **C**

REJECT.

---

*Cl* **72** *SC* **72.7.1.10** *P* **156** *L* **22** *#* 94

Joe , Abler IBM

*Comment Type* **E** *Comment Status* **R**

Not sure why the phrase ""including the incorporation of additional taps"" is in this statement. It doesn't hurt anything, but could leave readers wondering what's being implied by the statement

*SuggestedRemedy*

Change to state ""including the incorporation of possible additional taps"", or perhaps remove the phrase itself.

*Response* *Response Status* **C**

REJECT.

The statement is useful because it informs designers that additional taps are not precluded by the standard.

*Cl* **72** *SC* **72.7.1.10** *P* **157** *L* **33** *#* 95

Joe , Abler IBM

*Comment Type* **TR** *Comment Status* **A** *done*

Pre & post taps should not be restricted to negative values only. A positive post-cursor can effectively decrease slew rate, which may be desirable on short channels to reduce reflections. Bipolar post-cursor control also helps with group delay compensation. Bipolar pre-cursor capability can provide similar flexibility.

*SuggestedRemedy*

Remove the restriction that pre & post taps are negative only, and specifically provide a note to make readers aware that both positive and negative values are allowed.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Straw Poll #2
Pre / Post taps should be restricted to negative values only.

Yes - 4
No - 12
Abstain - 7

Implement changes (with editorial license) per abler_03_0106 and make corresponding changes in Clause 45.

*Cl* **72** *SC* **72.7.1.10** *P* **158** *L* **12** *#* 96

Joe , Abler IBM

*Comment Type* **E** *Comment Status* **R**

The superscript referring to note 2 appears to be specifying a value of 5 squared

*SuggestedRemedy*

change to indicate note 2

*Response* *Response Status* **C**

REJECT.

conforms to IEEE standard requirements

*Cl* **72** *SC* **72.7.1.10** *P* **158** *L* **30** *#* 97

Joe , Abler IBM

*Comment Type* **TR** *Comment Status* **A** *done*

Table 72-12 still leads to considerable confusion. Row 1 directly conflicts with rows 3 & 4. Row 4 appears to be incorrect from the original intention (I believe it should be max-min-min). The values in rows 1 & 2 appear to be enforcing a rule of negative only pre & post cursors, which is undesirable as indicated in a previous comment.

*SuggestedRemedy*

Remove the table. Simply state that at a minimum an implementation must provide support for the following range of coefficient control:
Rpre 1.05 to 1.55
Rpst 1.05 to 3.95
Vss 330 to 400 mV

These are minimum ranges required. Implementations may go beyond these ranges subject to restrictions listed under a-e.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Update per palkert_01_0106.

*Cl* **72** *SC* **72.7.2.1** *P* **162** *L* **11** *#* 98

Joe , Abler IBM

*Comment Type* **TR** *Comment Status* **R**

The EITbase number had previously been calculated under the assumption that a near best case transmitter would be used for test. The test procedure has been redefined to specifically require a near worst case transmitter be used. Therefore the EITbase value is no longer valid. This also appears to be confirmed by tests to date which have not been able to meet this number.

*SuggestedRemedy*

Change EITbase to 10mVpp

*Response* *Response Status* **U**

REJECT.

See Comment #31.

*Cl* **72** *SC* **9** *P* **162** *L* **11** *#* 99

Spagna, Fulvio INTEL

*Comment Type* **E** *Comment Status* **A** *done*

Spelling eror.

*SuggestedRemedy*

Change ""specifcation"" into ""specifications"".

*Response* *Response Status* **C**

ACCEPT.

---

*Cl* **72** *SC* **7.1.10** *P* **158** *L* **44** *#* 100

Spagna, Fulvio INTEL

*Comment Type* **E** *Comment Status* **A** *done*

Spelling.

*SuggestedRemedy*

Change ""addtion"" into ""addition"".

*Response* *Response Status* **C**

ACCEPT.

---

*Cl* **45** *SC* **2.1.85** *P* **49** *L* **12** *#* 101

Spagna, Fulvio INTEL

*Comment Type* **ER** *Comment Status* **A**

Transmit fault ability and Receive fault ability are to be implemented with latching high behavior.

*SuggestedRemedy*

Add LH to the bit description for bits 13 and 12.
Add :

LH = Latching High

to the bottom of the table.

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

This needs to be done for bits 10 and 11 rather than 13 and 12. (ie the fault bits rather than the ability bits.)

Add LH to 1000BASE-KX status register for bits 10 and 11, receive and transmit fault.

---

*Cl* **70** *SC* **6.6** *P* **91** *L* **21** *#* 102

Spagna, Fulvio INTEL

*Comment Type* **ER** *Comment Status* **A** *e*

The note is superfluous. The fact that the loop back note is not specified is explained at great length in the following note.

*SuggestedRemedy*

Remove note.

*Response* *Response Status* **W**

ACCEPT.

---

*Cl* **70** *SC* **7.2.3** *P* **99** *L* **34** *#* 103

Spagna, Fulvio INTEL

*Comment Type* **ER** *Comment Status* **A** *e*

For consistency with KR (Clause72.7.2.3) we should have the same coupling capacitor specified in the text. This will still allow using 4.7 nF on a KX PHY but suggests that for a KR/KX interface the capacitors should be 100 nF.

*SuggestedRemedy*

If

*Response* *Response Status* **W**

ACCEPT.

---

*Cl* **71** *SC* **6.5** *P* **113** *L* **7** *#* 104

Spagna, Fulvio INTEL

*Comment Type* **ER** *Comment Status* **A** *e*

Clause 71.6.5 seems to indicate that the Global PMD Signal Detect function may or may not be implemented. This contradicts 71.6.4 which states that the value of this variable is to be set to ""OK"" for the purpose of management and signaling primitive.

*SuggestedRemedy*

Rewrite to indicate that each PMD_signal_detect_n value shall continuosly indicate OK.

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

Deleted 71.6.5 and ammended 71.6.4
Related #50

*Cl* **71** *SC* **7.1** *P* **114** *L* **31** *#* 105

Spagna, Fulvio INTEL

*Comment Type* **ER** *Comment Status* **A** *e*

See suggested remedy.

*SuggestedRemedy*

Add superscript ""2"" to Random jitter entry on line 48.

*Response* *Response Status* **W**

ACCEPT.

*Cl* **70** *SC* **7.1** *P* **92** *L* **23** *#* 106

Spagna, Fulvio INTEL

*Comment Type* **ER** *Comment Status* **A** *e*

Table 70-6. See suggested remedy.

*SuggestedRemedy*

Add superscript ""3"" to Random Jitter entry on line 23.

*Response* *Response Status* **W**

ACCEPT.

*Cl* **71** *SC* **7.1.1** *P* *L* *#* 107

Spagna, Fulvio INTEL

*Comment Type* **ER** *Comment Status* **A** *e*

Figure is incomplete, missing connection to Vcom.

*SuggestedRemedy*

Copy figure from either Clause 70 or 72.

*Response* *Response Status* **W**

ACCEPT.

*Cl* **69A** *SC* **2.1** *P* **232** *L* **17** *#* 108

Spagna, Fulvio INTEL

*Comment Type* **ER** *Comment Status* **A**

See remedy.

*SuggestedRemedy*

Change line 17 to read: ""The clock source shall be modulated by a sine wave (sinusoidal jitter) at a frequency equal to 0.40% of signaling speed of the port under test and with a tolerance of +/-5%"".

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

Overtaken by events. Refer to comment #71

*Cl* **69A** *SC* **2.1** *P* **172** *L* **36** *#* 109

Spagna, Fulvio INTEL

*Comment Type* **ER** *Comment Status* **A**

In the text the limit for the jitter of the pattern generator is expressed as a percentage of the signalng speed. It is not clear what the intet was (0.35% of a UI, 0.35% of the total jitter spec for that signaling speed) etc.

*SuggestedRemedy*

Use appropariate units for specifying jitter.

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

Overtaken by events. Refer to comment #71

*Cl* **70** *SC* **6.1** *P* **89** *L* **34** *#* 110

Spagna, Fulvio INTEL

*Comment Type* **TR** *Comment Status* **A** *e*

It is not clear what the intent of the text is. Are the separable connectors being referred to distinct from the ""backplane connector(s)"" identified in Fig. 70-2 ? If so, what are they and why the transmitter and receiver are not treated consistently.

*SuggestedRemedy*

Remove sentence.

*Response* *Response Status* **W**

ACCEPT.

The text will be removed
Related #17, #111

*Cl* **71** *SC* **6.1** *P* **111** *L* **26** *#* 111

Spagna, Fulvio INTEL

*Comment Type* **TR** *Comment Status* **A** *e*

It is not clear what the intent of the text is. Are the separable connectors being referred to distinct from the ""backplane connector(s)"" identified in Fig. 71-2 ? If so, what are they and why the transmitter and receiver are not treated consistently.

*SuggestedRemedy*

Remove sentence.

*Response* *Response Status* **W**

ACCEPT.

Text will be removed
Related #110, #17

*Cl* **72** *SC* **6.1** *P* **133** *L* **17** *#* 112

Spagna, Fulvio INTEL

*Comment Type* **TR** *Comment Status* **A** *done*

It is not clear what the intent of the text is. Are the separable connectors being referred to distinct from the ""backplane connector(s)"" identified in Fig. 72-2 ? If so, what are they and why the transmitter and receiver are not treated consistently.

*SuggestedRemedy*

Remove sentence.

*Response* *Response Status* **W**

ACCEPT.
Delete:
'TP1 and TP4 are after a separateable connector (ie the Tx includes the effect of this separable connector, whereas the receiver does not).'

This is found on page 88 line 48 and 49

The diagram is self explanatory and the text is confusing.

*Cl* **72** *SC* **6.10.3.2** *P* **145** *L* **23** *#* 113

Spagna, Fulvio INTEL

*Comment Type* **TR** *Comment Status* **A** *done*

While it is true that by defining Rpre and Rpst, the initial boost is uniquely defined, the actual value of the taps coefficients is indetermined (two equations and three unknowns).

It maybe more complete if the value of the center tap was also specified. This would be in no way limiting but would also define the initial FIR DC gain (i.e. vss).

*SuggestedRemedy*

Add a requirement that C0 be set to its minimum value.

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

Implement the following

At the start of training the initial value of C0 shall be set to the maximum value that satisfies the constraints of section 72.7.1.10.

*Cl* **72** *SC* **7.1.10** *P* **105** *L* **5** *#* 114

Spagna, Fulvio INTEL

*Comment Type* **TR** *Comment Status* **A** *done*

Table 72-11 is not at all clear. An increment (decrement) on any tap will change Vpre, Vpst and Vss so the table (or the wording that goes with it) appears to be incorrect.

*SuggestedRemedy*

Not sure.

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

Update Table 72-7 per palkert_01_0106.

*Cl* **72** *SC* **7.1.10** *P* **158** *L* **30** *#* 115

Spagna, Fulvio INTEL

*Comment Type* **TR** *Comment Status* **A** *done*

Condition for c-1 in Table 72-12 fourth row (line 41) is incorrect.

*SuggestedRemedy*

Change c(-1) condition to ""minimum"" in line 41.

*Response* *Response Status* **C**

ACCEPT.

*Cl* **69A** *SC* **2.1** *P* **233** *L* **23** # 116

Spagna, Fulvio INTEL

*Comment Type* **TR** *Comment Status* **A**

The text indicates that the use of equalization on the pattern generator is optional for KR. I do not think that this is appropriate. In my opinion either the transmitter equalizer is made mandatory or new limits are established for the EIT test.

*SuggestedRemedy*

Reword to make the transmitter equalizer mandatory for KR.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Overtaken by events.
Refer to comment #75

*Cl* **69A** *SC* **2.4** *P* **235** *L* **32** # 117

Spagna, Fulvio INTEL

*Comment Type* **TR** *Comment Status* **A**

In KR testing the use in the transmitter equalizer should be mandatory.

*SuggestedRemedy*

Change text from:

""For 10GBASE-KR testing, if the pattern generator is implemented with a multi-tap equalizer, the pattern generator may be controlled by transmitter control. Transmitter control responds to inputs from the receiver to adjust the equalization of the pattern generator. The receiver may communicate through its associated transmitter, using the protocol described in 72.6.10, or by other means.""

to:

""For 10GBASE-KR testing the pattern generator shall be implemented with a multi-tap equalizer and the pattern generator shall respond to inputs from the receiver to adjust the equalization of the pattern generator.

The receiver may communicate to the pattern generator through its associated transmitter, using the protocol described in 72.6.10, or by other means.""

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Overtaken by events.
Refer to comment #75

*Cl* **69** *SC* **2.1** *P* **172** *L* **33** # 118

Spagna, Fulvio INTEL

*Comment Type* **TR** *Comment Status* **R**

Since the EIT tolerance values and measurement methodology are not resolved, the addition of sinusoidal jitter to a test which has not been completely resolved seems questionable.

*SuggestedRemedy*

Suggest having independent tests: interference tolerance testing and jitter tolerance.

*Response* *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

*Cl* **72** *SC* **7.1** *P* **150** *L* **17** # 119

Ghiasi, Ali Broadcom

*Comment Type* **TR** *Comment Status* **A**

Invalid comment entry

*SuggestedRemedy*

Invalid comment entry

*Response* *Response Status* **W**

ACCEPT.

Invalid comment entry

*Cl* **72** *SC* **7.1.5** *P* **153** *L* **15** # 120
Ghiasi, Ali Broadcom

*Comment Type* **TR** *Comment Status* **A**

Current return loss is not adequate for 10 Gig operation with more than 62% of signal getting reflected.

*SuggestedRemedy*

Propose the following return loss For frequency 50MHz-5.15 GHz RL>= 8 dB For Frequency from 5.15 - 10.3125 GHz RL>= 8 - 13.67 LOG10(f/5.15) with f in GHz

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

For frequency 50MHz-2.5 GHz RL>= 9 dB For Frequency from 2.5 - 7.5 GHz RL>= 9 - 12 LOG10(f/2.5) with f in GHz

see anderson_01_0106
see comment #126

Motion #9
Technical (>=75%)
Move to accept response.
Moved by Shannon Sawyer.
Seconded by Ali Ghiasi

All
Yes - 20
No - 0
Abstain - 2

Motion passes

*Cl* **72** *SC* **7.1** *P* **150** *L* **17** # 121
Ghiasi, Ali Broadcom

*Comment Type* **TR** *Comment Status* **R**

Common mode voltage should be change back to -0.4

*SuggestedRemedy*

This is to account for negative transients.

*Response* *Response Status* **W**

REJECT.

This comment was WITHDRAWN by the commenter.

*Cl* **72** *SC* **7.1.7** *P* **155** *L* **38** # 122
Ghiasi, Ali Broadcom

*Comment Type* **TR** *Comment Status* **A** *done*

Max transition time as specified might be too restricted without good reason.

*SuggestedRemedy*

Propose to use 47 ps transition time which is equivalent to 7.5 GHz Bessel filter

*Response* *Response Status* **C**

ACCEPT.

*Cl* **72** *SC* **7.1.7** *P* **155** *L* **37** # 123
Ghiasi, Ali Broadcom

*Comment Type* **TR** *Comment Status* **A** *done*

Transition time is not specified under what condition should be measured

*SuggestedRemedy*

Propose to measure transition time with pre-emphasis off

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change lines 29 and 31

from: 'using the square wave test pattern of 49.2.8.

to 'using the square wave test pattern of 49.2.8 with no transmitter equalization.'

*Cl* **72** *SC* **7.2.1** *P* **162** *L* **17** # 124

Ghiasi, Ali Broadcom

*Comment Type* **TR** *Comment Status* **R**

Interference jitter is not well defined and if assumed Gaussian then p-p jitter will be 0.756 UI!

*SuggestedRemedy*

Propose to specify interference jitter with p-p value of 0.6 UI at BER of 1E-12 with addition of SJ jitter as specified in IEEE 802.3ae clause 52. With exception of the high frequency >4 MHz to be set at 0.05 UI.

*Response* *Response Status* **W**

REJECT.

Straw Poll #3
Should a jitter tolerance mask be added for 10GBASE-KR?

Yes - 3
No - 8
Abstain - 6

Suggested remedy has not been demonstrated to be technically complete. Additional investigation is required and should be included as part of the Interferernce Test study.

See moore_03_0106.
see ghiasi_01_0106.

Motion #10
Technical (>=75%)
Move to accept response.
Moved by Tom Palkert
Seconded by Fulvio Spagna

All
Y - 17
N -0
A -1

Motion Passes

*Cl* **72** *SC* **7.2** *P* **161** *L* **37** # 125

Ghiasi, Ali Broadcom

*Comment Type* **TR** *Comment Status* **A**

Differential return loss is not adequte for 10Gig operation

*SuggestedRemedy*

Propose the following return loss For frequency 50MHz-5.15 GHz RL>= 8 dB For Frequency from 5.15 - 10.3125 GHz RL>= 8 - 13.67 LOG10(f/5.15) with f in GHz

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Use same equation as stated in Comment #120.

see anderson_01_0106
see comment #120, 126

*Cl* **72** *SC* **7.1.5** *P* **153** *L* **15** # 126

Ghiasi, Ali Broadcom

*Comment Type* **TR** *Comment Status* **A**

Current return loss is not adequate for 10 Gig operation with more than 62% of signal getting reflected.

*SuggestedRemedy*

Propose the following return loss For frequency 50MHz-5.15 GHz RL>= 8 dB For Frequency from 5.15 - 10.3125 GHz RL>= 8 - 13.67 LOG10(f/5.15) with f in GHz

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Use same equation as stated in Comment #120.

see anderson_01_0106
see comment #120, 125

*Cl* **69** *SC* **B.4** *P* **242** *L* **20** *#* 127

Ghiasi, Ali Broadcom

*Comment Type* **TR** *Comment Status* **R**

Channel parameter only defines insertion loss. Return loss is significant contribution to signal integrity degradation and must be specified to guarantee interoperability.

*SuggestedRemedy*

Create a return loss compliance mask based on the IEEE informative channels

*Response* *Response Status* **W**

REJECT.

Refer to comment #20446.

No servicable return loss mask has been proposed.

Note that 69B.2 states that:

"These characteristics may be applied to a specific implementation of the full path (including transmitter and receiver packaging and supporting components) for a complete assessment of system performance and the
interaction of these components."

The Task Force agreed (via acceptance of the response to #20446 without objection) that cascading the transmitter and receiver return loss with the channel under test (a well understood procedure) is the most accurate way to assess device-channel interactions.

Motion #11
Technical (>=75%)
Move to accept response.
Moved - John D'Ambrosia
Second - Fulvio Spagna

All
Y - 11
N - 0
Abstain - 1

Motion Passes

*Cl* **72** *SC* **72.7.1.10** *P* **158** *L* **53** *#* 128

Telang, Vivek Broadcom Corp.

*Comment Type* **TR** *Comment Status* **A** *done*

Bullet item (e) is contradictory. A ""decrement"" coefficient cannot result in Vpk greater than 600mV

*SuggestedRemedy*

In bullet item (e), change ""decrement"" to ""increment""

*Response* *Response Status* **W**

ACCEPT.

See comment #132

*Cl* **72** *SC* **Table 72-11** *P* *L* *#* 129

Valliappan, Magesh Broadcom

*Comment Type* **TR** *Comment Status* **A** *done*

The data under columns Vpre, Vpst, Vss is incorrect.
Vpre(k)-Vpre(k-1) should change when c(-1) is changed.
Vpst(k)-Vpst(k-1) should change when c(1) is changed.
Vss(k)-Vss(k-1) should change when c(0) is changed.

*SuggestedRemedy*

Move the data under column 4 to column 5
Move the data under column 5 to column 6
Move the data under column 6 to column 4

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Update Table 72-7 per palkert_01_0106.

*Cl* **72** *SC* **Table 72-12** *P* *L* *#* 130

Valliappan, Magesh Broadcom

*Comment Type* **TR** *Comment Status* **A** *done*

The last row is incorrect.
Rpre should be specified when c(1) is at maximum, c(0) is at minimum, c(-1) is at minimum.

*SuggestedRemedy*

Change column 3 in last row to ""minimum""

*Response* *Response Status* **C**

ACCEPT.

*Cl* **72** *SC* **7.1.10** *P* **187** *L* *#* 131

Valliappan, Magesh Broadcom

*Comment Type* **E** *Comment Status* **A** *done*

Right below table 72-12, fix spelling ""addtion""

*SuggestedRemedy*

change to addition

*Response* *Response Status* **C**

ACCEPT.

*Cl* **72** *SC* **7.2.10** *P* **187** *L* **53** *#* 132

Valliappan, Magesh Broadcom

*Comment Type* **TR** *Comment Status* **A** *done*

line 53, ""decrement"" is incorrect.
Only an increment of c(0) can cause Vpk to increase beyond 600mV

Also that line also seems ambiguous -
""Any coefficient update equal to ôdecrementö applied to c(0) that results in Vpk greater than 600 mV"" is an illegal update.

Further, no new constraints beyond items (a) and (c) are provided by (b),(d),(e).

*SuggestedRemedy*

Remove items (b),(d),(e).

If not, atleast change ""decrement"" to ""increment"" and reword items (b),(d) and (e) like -
""Any coefficient update request equal to "increment" which when applied to c(0) would result in Vpk greater than 600 mV, shall instead return a coefficient status value "maximum".

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change b from:
Any coefficient update equal to decrement applied to any tap that results in Vss less than 40 mV shall return a coefficient status value minimum.

To

Any coefficient update equal to decrement applied to any tap that would result in Vss less than 40 mV shall return a coefficient status value minimum.

Change d from:
d) Any coefficient update equal to decrement applied to c(-1) or c(1) that results in Vpk greater than 600 mV shall return a coefficient status value minimum.
To:
d) Any coefficient update equal to decrement applied to c(-1) or c(1) that would result in Vpk greater than 600 mV shall return a coefficient status value maximum.

Change e from:
e) Any coefficient update equal to decrement applied to c(0) that results in Vpk greater than 600 mV shall return a coefficient status value maximum.

To:
Any coefficient update equal to increment applied to c(0) that would result in Vpk greater than 600 mV shall return a coefficient status value maximum.

*Cl* **74** *SC* **6.4.1** *P* **221** *L* **32** *#* 133

Valliappan, Magesh Broadcom

*Comment Type* **TR** *Comment Status* **A**

The specified scrambler seed generates a sequence that does not scramble the transcode bits effectively - DC balance is not guaranteed.

During long packets (>2112/8 bytes) and long idles, the transcode bits are strings of 0's or 1's. The 32 transcode bits get XORed by the scrambler to 10111010111111000100111110011001 or the inverted sqeuence.
This 32-bit sequence has a DC balance of +2.

Changing the initial can fix this.

*SuggestedRemedy*

Change 3 bits in the seed - S(1) = 0, S(4) = 1, S(6) = 1. This produces the sequence 10111011010011000100010110010101, which has a DC balance of 0. The seed in hexadecimal is 0x2AAAAAAAAAAA2F8

Change text to -
""PN-2112 is a pseudo-noise sequence of length 2112 generated by the polynomial r(x), which is equal to the scrambler polynomial defined in 49.2.6 with initial state - 0x2AAAAAAAAAAA2F8. Before each FEC block processing (encoding or decoding) the PN-2112 generator is initialized with this state. ""

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change text to -

""PN-2112 is a pseudo-noise sequence of length 2112 generated by the polynomial r(x), which is equal to the scrambler polynomial defined in 49.2.6 with initial state - 0x2AAAAAAAAAAA2F8. Before each FEC block processing (encoding or decoding) the PN-2112 generator is initialized with this state. ""

*Cl* **74** *SC* **7** *P* **225** *L* **1** *#* 134

Valliappan, Magesh Broadcom

*Comment Type* **TR** *Comment Status* **A**

Test pattern generator seems unneccessary, since an FEC disable and the PCS test pattern generator are mandatory. The same applies for the test pattern checker. These features can be made available by bypassing FEC and enabling them in the PCS.

*SuggestedRemedy*

Remove the 2 sections 74.7 Test pattern generator and 74.8 Test pattern checker.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remove Test pattern generator and checker from Clause 74.

Provide informative text in clause 74 to indicate that FEC should be disabled while PCS is configured for test pattern mode, so as to bypass test pattern to be sent to PMA.

Applies to comments #39, 62

*Cl* **01** *SC* **1.4** *P* **17** *L* **49** *#* 135

Ganga, Ilango Intel

*Comment Type* **E** *Comment Status* **R**

Subclause 1.4.xxx 1000BASE-KX Provide link/bookmark to Clause 70 in subclauses 1.4

*SuggestedRemedy*

Provide missing bookmark to clause 70 in subclause 1.4

*Response* *Response Status* **C**

REJECT.

The Bookmark is there: see document "P802.3ap-D2.1.pdf" for final results

*Cl* **01** *SC* **1.4** *P* **17** *L* **52** *#* 136

Ganga, Ilango Intel

*Comment Type* **E** *Comment Status* **R** *e*

Subclause 1.4.xxx 10GBASE-KX4 Provide link/bookmark to Clause 71 in subclauses 1.4

*SuggestedRemedy*

Provide missing bookmark to (in line 52) clause 71.

*Response* *Response Status* **C**

REJECT.

The Bookmark is there: see document "P802.3ap-D2.1.pdf" for final results

*Cl* **01** *SC* **1.4** *P* **18** *L* **2** # 137

Ganga, Ilango Intel

*Comment Type* **E** *Comment Status* **A** *e*

Subclause 1.4.xxx 10GBASE-KR Provide link/bookmark to Clause 72 in subclauses 1.4

*SuggestedRemedy*

provide missing bookmark to clause 72 (in page 18, line 2)

*Response* *Response Status* **C**

ACCEPT.

*Cl* **01** *SC* **1.5** *P* **18** *L* **17** # 138

Ganga, Ilango Intel

*Comment Type* **E** *Comment Status* **A** *e*

Insert the following abbreviations in alphabetical order to subclause 1.5 line 17.

FEC Forward Error Correction

*SuggestedRemedy*

Insert the following abbreviations in alphabetical order to subclause 1.5 line 17.

FEC Forward Error Correction

*Response* *Response Status* **C**

ACCEPT.

*Cl* **30** *SC* **30.5.1.1.13** *P* **25** *L* **22** # 139

Ganga, Ilango Intel

*Comment Type* **TR** *Comment Status* **A** *e*

Add reference to clause 74 FEC to the subclause 30.5.1.1.13 aFECAbility in clause 30 as suggested below.

*SuggestedRemedy*

Change in subclause "30.5.1.1.13 aFECAbility" after "BEHAVIOUR DEFINED AS:" to include
clause 74 as follows:

A read-only value that indicates if the 1000BASE-PX PHY or 10GBASE-KR PHY supports the optional FEC Sublayer for forward error correction (see 65.2 for 1000BASE-PX PHY or see clause 74 for 10GBASE-KR PHY)

If a Clause 45 MDIO Interface to the PCS or PMA/PMD is present, then this attribute will map to the FEC capability register (see 45.2.7.2) for 1000BASE-PX or FEC capability bit in 10GBASE-KR PMD control register (see 45.2.1.76.3).;

*Response* *Response Status* **C**

ACCEPT.

*Cl* **30** *SC* **30.5.1.1.14** *P* **25** *L* **22** # 140

Ganga, Ilango Intel

*Comment Type* **TR** *Comment Status* **A** *e*

Add reference to clause 74 FEC to the subclause 30.5.1.1.14 aFECmode in clause 30 as suggested below.

*SuggestedRemedy*

Change in subclause "30.5.1.1.14 aFECmode" after "BEHAVIOUR DEFINED AS:" to include reference to clause 74 FEC as follows:

A read-write value that indicates the mode of operation of the 1000BASE-PX PHY or 10GBASE-KR PHY optional FEC Sublayer for Forward error correction (see 65.2 for 1000BASE-PX PHY or see clause 74 for 10GBASE-KR PHY).

A GET operation returns the current mode of operation the PHY. A SET operation changes the mode of operation of the PHY to the indicated value.

If a Clause 45 MDIO Interface to the PCS or PMA/PMD is present, then this attribute will map to the FEC control register (see 45.2.7.3) for 1000BASE-PX or Enable FEC bit in 10GBASE-KR PMD control register (see 45.2.1.76.4).;

*Response* *Response Status* **C**

ACCEPT.

*Cl* **30** *SC* **30.5.1.1.15** *P* **25** *L* **22** *#* 141

Ganga, Ilango Intel

*Comment Type* **TR** *Comment Status* **A** *e*

Add reference to clause 74 FEC to the subclause 30.5.1.1.15 aFECCorrectedBlocks in clause 30 as suggested below:

*SuggestedRemedy*

Change in subclause "30.5.1.1.14 aFECmode" after "BEHAVIOUR DEFINED AS:" to include reference to clause 74 FEC as follows:

A read-write value that indicates the mode of operation of the 1000BASE-PX PHY or 10GBASE-KR PHY optional FEC Sublayer for Forward error correction (see 65.2 for 1000BASE-PX PHY or see clause 74 for 10GBASE-KR PHY).

A GET operation returns the current mode of operation the PHY. A SET operation changes the mode of operation of the PHY to the indicated value.

If a Clause 45 MDIO Interface to the PCS or PMA/PMD is present, then this attribute will map to the FEC control register (see 45.2.7.3) for 1000BASE-PX or Enable FEC bit in 10GBASE-KR PMD control register (see 45.2.1.76.4).;

*Response* *Response Status* **C**

ACCEPT.

*Cl* **30** *SC* **30.5.1.1.16** *P* **25** *L* **22** *#* 142

Ganga, Ilango Intel

*Comment Type* **TR** *Comment Status* **A** *e*

Add reference to clause 74 FEC to the subclause 30.5.1.1.16 aFECUncorrectableBlocks in clause 30 as suggested below:

*SuggestedRemedy*

Change in subclause "30.5.1.1.16 aFECUncorrectableBlocks" after "APPROPRIATE SYNTAX" to include reference to 10Gb/s speeds as follows:

APPROPRIATE SYNTAX:
Generalized nonresetable counter. This counter has a maximum increment rate of 1 600 000 counts per second for 10Mb/s implementations and 500 000 counts per second for 1000 Mb/s implementations and 5 000 000 counts per second for 10 Gb/s implementations.

Change in subclause "30.5.1.1.16 aFECUncorrectableBlocks" after "BEHAVIOUR DEFINED AS:" to include reference to clause 74 FEC as follows:

BEHAVIOUR DEFINED AS:
For 1000BASE-PX PHYs or 10GBASE-KR PHYs, a count of uncorrectable FEC blocks. This counter will not increment for other PHY types.

Increment the counter by one for each FEC block that is determined to be uncorrectable by the FEC function in the PHY.

If a Clause 45 MDIO Interface to the PCS or PMA/PMD is present, then this attribute will map to the FEC uncorrectable blocks counter (see 45.2.7.6 for 1000BASE-PX PHYs or see 45.2.1.83 for 10GBASE-KR PHYs).;

*Response* *Response Status* **C**

ACCEPT.

*Cl* **30** *SC* **30.6.1.1.3** *P* **25** *L* **22** # 143

Ganga, Ilango Intel

*Comment Type* **TR** *Comment Status* **A** *e*

Add reference to DME signaling (clause 73 Auto-Neg) to the subclause 30.6.1.1.3 aAutoNegRemoteSignaling in clause 30 as suggested below:

*SuggestedRemedy*

Change in subclause "30.6.1.1.3 aAutoNegRemoteSignaling" after "BEHAVIOUR DEFINED AS:" to include reference to DME pages (clause 73 Auto-Neg) as follows:

BEHAVIOUR DEFINED AS:
The value indicates whether the remote end of the link is operating Auto-Negotiation signaling or not. It shall take the value detected if, during the previous link negotiation, FLP Bursts or /C/ ordered_sets (see 36.2.4.10) or DME pages (see 73.5) were received from the remote end.;

*Response* *Response Status* **C**

ACCEPT.

*Cl* **30** *SC* **30.6.1.1.4** *P* **25** *L* **22** # 144

Ganga, Ilango Intel

*Comment Type* **TR** *Comment Status* **A** *e*

Add reference to parallel detection (clause 73 Auto-Neg) to the subclause 30.6.1.1.4 aAutoNegAutoConfig (in clause 30) as suggested below:

*SuggestedRemedy*

Change in subclause "30.6.1.1.4 aAutoNegAutoConfig" after "BEHAVIOUR DEFINED AS:" to include reference to clause 73 parallel detection as follows:

BEHAVIOUR DEFINED AS:
Indicates whether Auto-Negotiation signaling is in progress or has completed. The enumeration "parallel detect fail" maps to a failure in parallel detection as defined in 28.2.3.1 or 73.7.4.1.;

*Response* *Response Status* **C**

ACCEPT.

*Cl* **30** *SC* **30.6.1.1.5** *P* **25** *L* **22** # 145

Ganga, Ilango Intel

*Comment Type* **TR** *Comment Status* **A** *e*

Add reference to clause 73 Auto-Neg Technology ability to the subclause 30.6.1.1.5 aAutoNegLocalTechnologyAbility (in clause 30) as suggested below:

*SuggestedRemedy*

Change in subclause "30.6.1.1.5 aAutoNegLocalTechnologyAbility" to the end of "APPROPRIATE SYNTAX:" section to include reference to clause 73 Auto-Neg Technology Ability as follows:

1000BASE-KXFD Full duplex 1000BASE-KX as specified in Clause 70
10GBASE-KX4FD Full duplex 10GBASE-KX4 as specified in Clause 71
10GBASE-KRFD Full duplex 10GBASE-KR as specified in Clause 72
REM-FAULT Remote fault bit (RF) as specified in Clause 73
PAUSE-C0C1 Pause bits (C1:C0) as specified in Clause 73
FEC-CAPABLE FEC capability (F0 bit defined in clause 73.6.5) as specified in Clause 74

Change in subclause "30.6.1.1.5 aAutoNegLocalTechnologyAbility" after "BEHAVIOUR DEFINED AS:" to include reference to clause 73 as follows:

BEHAVIOUR DEFINED AS:
This indicates the technology ability of the local device, as defined in Clause 28 and Clause 37 or clause 73.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Make corresponding changes to 30B.2.

*Cl* **30** *SC* **30.6.1.1.6** *P* **25** *L* **22** # 146

Ganga, Ilango Intel

*Comment Type* **TR** *Comment Status* **A** *e*

Add reference to clause 73 Auto-Neg Technology ability to the subclause 30.6.1.1.6 aAutoNegAdvertisedTechnologyAbility (in clause 30) as suggested below:

*SuggestedRemedy*

Change in subclause "30.6.1.1.6 aAutoNegAdvertisedTechnologyAbility" after "BEHAVIOUR DEFINED AS:" to include clause 73 Auto-Negotiation base page as follows:

BEHAVIOUR DEFINED AS:
For Clause 28 Auto-Negotiation this GET-SET attribute maps to the Technology Ability Field of the Auto-Negotiation Link Codeword. For Clause 37 Auto-Negotiation, this GET-SET attribute maps to bits D0-D13 of Config_Reg base page (see 37.2.1). For Clause 73 Auto-Negotiation, this GET-SET attribute maps to bits D10-D13 & D21-D47 of Link Code Word base page (see 73.6).

*Response* *Response Status* **C**

ACCEPT.

*Cl* **30** *SC* **30.6.1.1.7** *P* **25** *L* **22** # 147

Ganga, Ilango Intel

*Comment Type* **TR** *Comment Status* **A** *e*

Add reference to clause 73 Auto-Neg Technology ability to the subclause 30.6.1.1.7 aAutoNegReceivedTechnologyAbility (in clause 30) as suggested below:

*SuggestedRemedy*

Change in subclause "30.6.1.1.7 aAutoNegReceivedTechnologyAbility" after "BEHAVIOUR DEFINED AS:" to include clause 73 Auto-Negotiation base page as follows:

BEHAVIOUR DEFINED AS:
Indicates the advertised technology ability of the remote hardware. For Clause 28 Auto-Negotiation, this attribute maps to the Technology Ability Field of the last received Auto-Negotiation Link Codeword(s). For Clause 37 Auto-Negotiation, this attribute maps to bits D0-D13 of the received Config_Reg base page (see 37.2.1). For Clause 73 Auto-Negotiation, this attribute maps to bits D10-D13 & D21-D47 of the last received Link Code Word base page (see 73.6);

*Response* *Response Status* **C**

ACCEPT.

*Cl* **30** *SC* **30.6.1.1.8** *P* **25** *L* **22** # 148

Ganga, Ilango Intel

*Comment Type* **TR** *Comment Status* **A** *e*

Add reference to clause 73 Auto-Neg Selector Field to the subclause 30.6.1.1.8 aAutoNegLocalSelectorAbility (in clause 30) as suggested below:

*SuggestedRemedy*

Change in subclause "30.6.1.1.8 aAutoNegLocalSelectorAbility" at the end of "APPROPRIATE SYNTAX:" section to include clause 73 Auto-Negotiation selector field as follows:

backplane_ethernet IEEE Std 802.3 Backplane Ethernet

Change in subclause "30.6.1.1.8 aAutoNegLocalSelectorAbility" in the section "BEHAVIOUR DEFINED AS:" to include clause 73 Auto-Negotiation Selector Field as follows:

BEHAVIOUR DEFINED AS:
This indicates the value of the selector field of the local hardware. Selector field is defined in 28.2.1.2.1 for Clause 28 Auto-Negotiation devices. The enumeration of the Selector Field indicates the standard that defines the remaining encodings for Auto-Negotiation using that value of enumeration. For Clause 37 Auto-Negotiation devices, a SET of this attribute will have no effect, and a GET will return the value ethernet. For Clause 73 Auto-Negotiation devices, the Selector Field is defined in 73.6.1.;

*Response* *Response Status* **C**

ACCEPT.

*Cl* **30** *SC* **30.6.1.1.9** *P* **25** *L* **22** # 149

Ganga, Ilango Intel

*Comment Type* **TR** *Comment Status* **A** *e*

Add reference to clause 73 Auto-Neg Selector Field to the subclause 30.6.1.1.9 aAutoNegAdvertisedSelectorAbility (in clause 30) as suggested below:

*SuggestedRemedy*

Change in subclause "30.6.1.1.9 aAutoNegAdvertisedSelectorAbility" in the section "BEHAVIOUR DEFINED AS:" to include clause 73 Auto-Negotiation Selector Field as follows:

BEHAVIOUR DEFINED AS:
In the case of Clause 28 Auto-Negotiation, this GET-SET attribute maps to the Message Selector Field of the Auto-Negotiation Link Codeword. For Clause 73 Auto-Negotiation, this GET-SET attribute maps to the Selector Field of the Clause 73 Auto-Negotiation Link Codeword (see 73.6.1). A SET operation to a value not available in aAutoNegLocalSelectorAbility will be rejected. A successful SET operation will result in immediate link renegotiation if aAutoNegAdminState is enabled. For Clause 37 Auto-Negotiation devices, a SET of this attribute will have no effect, and a GET will return the value ethernet.

*Response* *Response Status* **C**

ACCEPT.

*Cl* **30** *SC* **30.6.1.1.10** *P* **25** *L* **22** # 150

Ganga, Ilango Intel

*Comment Type* **TR** *Comment Status* **A** *e*

Add reference to clause 73 Auto-Neg Selector Field to the subclause 30.6.1.1.10 aAutoNegReceivedSelectorAbility (in clause 30) as suggested below:

*SuggestedRemedy*

Change in subclause "30.6.1.1.10 aAutoNegReceivedSelectorAbility" in the section "BEHAVIOUR DEFINED AS:" to include clause 73 Auto-Negotiation Selector Field as follows:

BEHAVIOUR DEFINED AS:
In the case of Clause 28 Auto-Negotiation, this attribute indicates the advertised message transmission ability of the remote hardware. Maps to the Message Selector Field of the last received Auto-Negotiation Link Codeword. For Clause 73 Auto-Negotiation, this attribute indicates the advertised message transmission ability of the remote hardware and maps to the Selector Field of the last received clause 73 Auto-Negotiation Link Codeword (see 73.6.1) .For Clause 37 Auto-Negotiation devices, a SET of this attribute will have no effect, and a GET will return the value ethernet.;

*Response* *Response Status* **C**

ACCEPT.

*Cl* **30** *SC* **30.xx** *P* **25** *L* **22** # 151

Ganga, Ilango Intel

*Comment Type* **TR** *Comment Status* **A**

Management for Backplane Ethernet PHY types: Should there be managed object classes for Backplane Ethernet PHYs 1000BASE-KX, 10GBASE-KX4 and 10GBASE-KR to manage specific capabilities for these PHY. The current managed classes are generic and may not address the specific capabilities of Backplane Ethernet PHY types.

If it is deemed appropriate, add managed object classes for the Backplane Ethernet PHYs to clause 30. Similarly add backplane Ethernet capabilities to table 30-1 to 30-6 in subclause 30.2.5 capabilities.

*SuggestedRemedy*

Add a subclause in clause 30 to include managed object classes for Backplane Ethernet PHY types if it is deemed appropriate (and add relevant enumeration to Annex 30B as well).

Also, if it is deemed appropriate, add table 30-x (similar to capabilities table 30-1 to 30-6 in subclause 30.2.5) to indicate Backplane Ethernet PHY capabilities.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add 802.3ap PHY types to the Type value enumeration in Annex 30B.

*Cl* **45** *SC* **45.2.1.1.4** *P* **32** *L* **15** # 152

Ganga, Ilango Intel

*Comment Type* **TR** *Comment Status* **A** *Send to Arthur*

The loopback function is mandatory for the 1000BASE-KX, 10GBASE-KX4 and 10GBASE-KR as defined in clauses 70,71,72. The current statement in line 15 does not include 10GBASE-R PHY types. So include all Backplane Ethernet PHY types.

*SuggestedRemedy*

Change line 15 as follows:

The loopback function is mandatory for the 1000BASE-KX, 10GBASE-KX4, 10GBASE-KR and 10GBASE-X ports types

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change text to

"The loopback function is mandatory for the 1000BASE-KX, 10GBASE-KR and 10GBASE-X ports types."

*Cl* **45** *SC* **45.2** *P* **28** *L* **5** # 153

Ganga, Ilango Intel

*Comment Type* **ER** *Comment Status* **A**

Remove Tables 45-1 and 45-2(page 28-29). These changes are already included in 802.3an-D2.4. The 802.3ap does not need to make any amendments to these tables.

*SuggestedRemedy*

Remove Tables 45-1 and 45-2 because these changes are already included in 802.3an-D2.4

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

These tables are already deleted in the non-change-bar version of the document.

*Cl* **45** *SC* **45.2.1** *P* **30** *L* **6** # 154

Ganga, Ilango Intel

*Comment Type* **ER** *Comment Status* **A**

Table 45-3 has been repeated two times. The first table 45-3 at the top of page 30 (starting at line 6) has to be removed. The second one is correct.

*SuggestedRemedy*

Delete the table 45-3 at the begining of page 30 (the second table 45-3 is the correct one).

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

This has already been done in the non-change-bar version of the document.

*Cl* **45** *SC* **45.2.1.1** *P* **31** *L* **6** # 155

Ganga, Ilango Intel

*Comment Type* **ER** *Comment Status* **A**

Duplicate entry for PMA/PMD control 1 register. The bottom table is correct. Delete table 45-4 and the top of the page 31 (starting at line 6).

This a Std 802.3-2005 change. The table number for PMA/PMD should be 45-4. It is referenced as 45-5.

*SuggestedRemedy*

Delete table 45-4 and the top of the page 31 (starting at line 6).

Renumber the table at the bottom of page 31 to read as 45-4. (it is incorrectly numbered as 45-5)

*Response* *Response Status* **W**

ACCEPT.

See response to comment number 11

*Cl* **45** *SC* **45.2.1.1.3** *P* **32** *L* **4** # 156

Ganga, Ilango Intel

*Comment Type* **ER** *Comment Status* **A**

Fix the typo ""1.05:2"" for speed selection bits: ""45.2.1.1.3 Speed selection (1.0.13, 1.0.6, 1.05:2)""

*SuggestedRemedy*

Correct the typo as follows:

""45.2.1.1.3 Speed selection (1.0.13, 1.0.6, 1.0.5:2)""

*Response* *Response Status* **W**

ACCEPT.

*Cl* **45** *SC* **45.2.1.4** *P* **32** *L* **28** # 157

Ganga, Ilango Intel

*Comment Type* **ER** *Comment Status* **A**

Delete Table 45-1-PMA/PMD status 1 register bit definitions and related subclause 45.1.1.4 from the change bar document. This change is not required.

*SuggestedRemedy*

Delete Table 45-1-PMA/PMD status 1 register bit definitions and related subclause 45.1.1.4 from the change bar document. This change is not required.

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment 11

---

*Cl* **45** *SC* **45.2.1.4.1** *P* **33** *L* **30** # 158

Ganga, Ilango Intel

*Comment Type* **ER** *Comment Status* **A**

Repetition of table 45-6 in page 33 of change bar document. Delete the second occurence of table 45-6 at the bottom of the page

*SuggestedRemedy*

Delete the second occurence of table 45-6 at the bottom of the page 33 (starting at line 30).

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

This problem ony exists in the change-bar document. The non-change-bar document is correct.

---

*Cl* **45** *SC* **45.2.1.7.5** *P* **36** *L* **36** # 159

Ganga, Ilango Intel

*Comment Type* **ER** *Comment Status* **A**

Repetition of table 45-11 in change-bar document. Delete the second occurence of table 45-11 from page 36.

*SuggestedRemedy*

Delete the second occurence of table 45-11 from page 36 (starting at line 36)

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

This problem only exists in the change bar document.

---

*Cl* **45** *SC* **45.2.1.76** *P* **37** *L* **15** # 160

Ganga, Ilango Intel

*Comment Type* **ER** *Comment Status* **A**

Repetition of table in page 37, line 15. Delete able 45-53 starting at line 15 on page 37 from change bar document.

*SuggestedRemedy*

Delete Table 45-53 starting at line 15 on page 37 from change bar document.

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

This problem only exists in the change-bar document

---

*Cl* **45** *SC* **45.2.1.76** *P* **37** *L* **45** # 161

Ganga, Ilango Intel

*Comment Type* **T** *Comment Status* **A**

Table 45-54: Training Enable bit 1.150.1 should be a R/W bit. It is specified as RO. Fix this bit to R/W

*SuggestedRemedy*

Change 1.150.1 Training enable bit to be R/W in the last column of table 45-54

*Response* *Response Status* **C**

ACCEPT.

---

*Cl* **45** *SC* **45.2.1.76** *P* **49** *L* **1** # 162

Ganga, Ilango Intel

*Comment Type* **E** *Comment Status* **A**

Fix the typo in the following line:
45.2.1.85 T1000BASE-KX status register (Register1.161)
(Remove 'T' from T1000BASE-KX)
^^

*SuggestedRemedy*

Fix the typo as shown below. (Remove 'T' from T1000BASE-KX)

45.2.1.85 1000BASE-KX status register (Register1.161)

*Response* *Response Status* **C**

ACCEPT.

*Cl* **45** *SC* **45.2.7** *P* **55** *L* **10** *#* 163

Ganga, Ilango Intel

*Comment Type* **T** *Comment Status* **A**

The 802.3an-D2.4 has incorporated the changes to AN advertisement and AN LP base page registers to be 48 bits (3 register sets).

Hence modify Table 45-117 to show only changes related to 802.3ap

At present 802.3ap has named next page registers as AN LD NP and AN LP NP which is not consistent with the naming convention used in 802.3an-D2.4 for the same registers.

The 802.3ap editor has submitted a comment to 802.3an. The 802.3an-D2.4 has not made changes (to next page registers) requested for XNP transmit and XNP LP ability registers. (The reason cited is this will conflict with NP registers defined in clause 22).

This is a valid reason so 802.3ap cannot rename the registers NP, Hence request 802.3an to rename this to a generic name such as 48-bit next page register (instead of extended next page register)

*SuggestedRemedy*

Modify Table 45-117 to show only changes related to 802.3ap as per 802.3an-D2.4

It is proposed to request 802.3an to change the name for XNP (XNP transmit and XNP LP ability regsiters) to a more generic name to indicate that this is a 48 bit next page register. Modify the Table 45-117 accordingly. At present 802.3ap has named this AN LD NP and AN LP NP which is not consistent with the naming convention used in 802.3an-D2.4 for the same registers.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Table 45-117 will be modified to show only changes from 802.3an. That is it will just show the addition of the BP Ethernet status register.

*Cl* **45** *SC* *P* **50** *L* **1** *#* 164

Ganga, Ilango Intel

*Comment Type* **ER** *Comment Status* **A**

Delete Table 45-117 on page 50 of change-bar document. (The correct table is repeated again in page 55).

*SuggestedRemedy*

Delete Table 45-117 on page 50 of change-bar document

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

Agreed this table should not be in the change-bar version. However the table is not present in the non-change-bar version. The editor will try to make sure the change bar version is correct in the future.

*Cl* **45** *SC* *P* **53** *L* **8** *#* 165

Ganga, Ilango Intel

*Comment Type* **ER** *Comment Status* **A**

Delete table 45-119 from page 53 in change bar document. (The correct table 45-119 is in page 56)

*SuggestedRemedy*

Delete table 45-119 from page 53 of change bar document.

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

Agreed this table should not be in the change-bar version. However the table is not present in the non-change-bar version. The editor will try to make sure the change bar version is correct in the future.

*Cl* **45** *SC* **45.2.7.2** *P* **56** *L* **10** # 166

Ganga, Ilango Intel

*Comment Type* **TR** *Comment Status* **A**

The bits LD next pageable (7.1.11)and LP next pageable (7.1.10) are not needed in the AN status register (table 45-119) and should be removed. It is currently defined as read only and is always strapped to logic 1.

Also the definition for these bits are conflicting with the definition of next page transmission in clause 73. The register definition states that the function is mandatory, however in clause 73.6.9 transmission of next page is optional.

If these are internal variables to state machine just define them in clause 73 and remove the bits from Clause 45 table 45-119.

*SuggestedRemedy*

Remove bits LD next pageable (7.1.11)and LP next pageable (7.1.10) from AN status register (Table 45-119).

Because Clause 73 AN devices are next page capable, define the default for these variables in clause 73 only (and use it locally in the corresponding AN arbitration state machines)

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

Delete these two bits.

Also make table 45-119 (AN status register) show only the differences to 802.3an; these being 7.1.9 parallel detection fault and 7.1.0 LP Auto-Negotiation able.

Remove the next pageable variables from Clause 73.

*Cl* **45** *SC* **45.2.7.3** *P* **58** *L* **8** # 167

Ganga, Ilango Intel

*Comment Type* **ER** *Comment Status* **A**

Reverse the order of documenting in Table 45-120 AN advertisement register as per 802.3an-D2.4. It is currently documented with higher order register first starting with register 7.18 followed by 7.17 followed by 7.16.

However 802.3an-D2.4 has documented this as 7.16 follwed by 7.17 and 7.18.

*SuggestedRemedy*

Modify table 45-120 similar to 802.3an-D2.4 which has documented as 7.16 in first row follwed by 7.17 and 7.18.

*Response* *Response Status* **W**

ACCEPT.

*Cl* **45** *SC* **45.2.7.4** *P* **59** *L* **30** # 168

Ganga, Ilango Intel

*Comment Type* **ER** *Comment Status* **A**

Reverse the order of documenting the Table 45-121-AN LP base page ability registers bit definitions as per 802.3an-D2.4. It is currently documented with higher order register first starting with register 7.21 followed by 7.20 followed by 7.19.

However 802.3an-D2.4 has documented this as 7.19 follwed by 7.20 and 7.21.

*SuggestedRemedy*

Modify table 45-121 similar to 802.3an-D2.4 which has documented it as 7.19 in first row follwed by 7.20 and 7.21.

*Response* *Response Status* **W**

ACCEPT.

*Cl* **45** *SC* **45.2.7.5** *P* **60** *L* **12** # 169

Ganga, Ilango Intel

*Comment Type* **ER** *Comment Status* **A**

Reverse the order of documenting the Table 45-122-AN Next Page transmit bit definitions as per 802.3an-D2.4. It is currently documented with higher order register first starting with register 7.24 followed by 7.23 followed by 7.22.

However 802.3an-D2.4 has documented this as 7.22 follwed by 7.23 and 7.24. in Table 45-122-AN Next Page transmit bit definitions

*SuggestedRemedy*

Modify table 45-122 similar to 802.3an-D2.4 which has documented it as 7.22 in first row followed by 7.23 and 7.24.

*Response* *Response Status* **W**

ACCEPT.

*Cl* **45** *SC* **45.2.7.6** *P* **61** *L* **10** # 170

Ganga, Ilango Intel

*Comment Type* **ER** *Comment Status* **A**

Reverse the order of documenting the Table 45-123-AN LP NP register(s) registers bit definitions as per 802.3an-D2.4. It is currently documented with higher order register first starting with register 7.27 followed by 7.26 followed by 7.25.

However 802.3an-D2.4 has documented this as 7.25 follwed by 7.26 and 7.27. in Table 45-123-AN LP NP register(s) registers bit definitions

*SuggestedRemedy*

Modify table 45-123 similar to 802.3an-D2.4 which has documented it as 7.25 in first row followed by 7.26 and 7.27.

*Response* *Response Status* **W**

ACCEPT.

*Cl* **45** *SC* **45.2.7.3** *P* **58** *L* **8** # 171

Ganga, Ilango Intel

*Comment Type* **TR** *Comment Status* **A**

In Table 45-120-AN Advertisement register(s) registers bit definitions, the Technology Ability bit A26 has been changed to F0 FEC capability (see 73.6).

*SuggestedRemedy*

Modify A26 to F0 FEC capability in this register. Also change technology ability field to A[25:0] accordingly. Modify the corresponding text in subclause 45.2.7.3 to reflect this change.

*Response* *Response Status* **C**

ACCEPT.

*Cl* **45** *SC* **45.2.7.4** *P* **59** *L* **30** # 172

Ganga, Ilango Intel

*Comment Type* **TR** *Comment Status* **A**

In Table 45-121-AN LP base page ability register(s) registers bit definitions, the Technology Ability bit A26 has been changed to F0 FEC capability (see 73.6).

*SuggestedRemedy*

Modify A26 to F0 FEC capability in this register. Also change technology ability field to A[25:0] accordingly. Modify the corresponding text in subclause 45.2.7.4 to reflect this change.

*Response* *Response Status* **C**

ACCEPT.

*Cl* **45** *SC* **45.5.3** *P* **65** *L* **50** # 173

Ganga, Ilango Intel

*Comment Type* **T** *Comment Status* **A**

Add PICS proforma tables for 10GBASE-KR and 10GBASE-KX PMA/PMDs register bits in clause 45.5.3.

*SuggestedRemedy*

Add PICS proforma tables for 10GBASE-KR and 10GBASE-KX PMA/PMDs register bits in clause 45.5.3.

*Response* *Response Status* **C**

ACCEPT.

*Cl* **69** *SC* **69.1.3** *P* **74** *L* **15** # 174

Ganga, Ilango Intel

*Comment Type* **T** *Comment Status* **A**

In Figure 69-2-Architectural positioning of Backplane Ethernet, include ""optional FEC sublayer"" in between PCS and PMA sublayers of 10GBASE-KR layer stack.

*SuggestedRemedy*

In Figure 69-2-Architectural positioning of Backplane Ethernet, include ""optional FEC sublayer"" in between PCS and PMA sublayers of 10GBASE-KR layer stack.

Also include the corresponding abbreviation for FEC below figure 69-2

Add following text to subclause 69.1.3 on page 74 at the end of section (f):
""or Clause 74 for Forward Error Correction (FEC) for 10GBASE-KR PHY"".

*Response* *Response Status* **C**

ACCEPT.

*Cl* **69** *SC* **69.2.3** *P* **75** *L* **45** # 175

Ganga, Ilango Intel

*Comment Type* **TR** *Comment Status* **A**

In ""Table 69-1-Nomenclature and clause correlation"" add last column for Clause 74 FEC and mark it as ""O"" (optional) against the last row for 10GBASE-KR

*SuggestedRemedy*

In ""Table 69-1-Nomenclature and clause correlation"" add last column for Clause 74 FEC and mark it as ""O"" (optional) against the last row for 10GBASE-KR

Also add text to subclause 69.2.3 at end of line 23 to include, ""The Forward Error Correction for 10GBASE-KR PMD is defined in Clause 74"".

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Table 69-1 will be augmented per suggested remedy.

Also add text to subclause 69.2.3 at end of line 23 to include, ""The 10GBASE-KR PHY may optionally include Forward Error Correction, as defined in Clause 74"".

*Cl* **72** *SC* **72.6.11.2.6** *P* **141** *L* **34** # 176

Ganga, Ilango Intel

*Comment Type* **TR** *Comment Status* **A** *done*

Figure 72-3-PRBS11 pattern generator serial implementation does not accurately capture the polynomial 72-1. The output of S8 should be fed to the XOR gate instead of S9. Also the figure has a typo on the label for output as PRBS31.

*SuggestedRemedy*

Modify the figure 72-3 so that the output of S8 is fed to the input of XOR gate instead of S9.

Also change the label at the output from ""PRBS31"" to PRBS11

*Response* *Response Status* **W**

ACCEPT.

*Cl* **72** *SC* **72.6.11.3.2** *P* **148** *L* **10** # 177

Ganga, Ilango Intel

*Comment Type* **TR** *Comment Status* **A** *done*

The training state diagram (Figure 72-5-Training state diagram) does not have a time out function defined. Because of this the state machine does not have an escape path from TRAIN_LOCAL and TRAIN_REMOTE. So if variables rx_trained or remote_rx_ready are not set, then there should be a way for the state machine to time out and report training failure at the end.

Define a timer variable called max_training_wait_timer and initialize this timer at INITIALIZE state. Report training failure if the max_training_wait_timer expires while in any of the intermediate states.

*SuggestedRemedy*

Modify Figure 72-5 training state machine to include a time out function. Define a timer variable called max_training_wait_timer and initialize this timer at INITIALIZE state. Report training failure if the max_training_wait_timer expires while in any of the intermediate states.

Have a configurable option to disable checking for time out function(expiration of max_training_wait_timer) during test modes. The option to disable timeout is needed while performing training of a ""test pattern generator"" during the interference tolerence test, where there is no 802.3ap backchannel available for providing feedback to the source. This feedback will be done by other means and the state machine should not time out during this test mode of operation.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Modify Figure 72-5 per palkert_01_0106

max_wait_timer will be defined to have a value of 500ms +/- 1%.

Add a bit to 10GBASE-KR Status Register in Clause 45 to indicate training failure.

Add 10GBASE-KR control and status register mappings to 72.5

Editorial license on implementing all changes granted.

*Cl* **74** *SC* **74.3** *P* **215** *L* **51** # 178

Ganga, Ilango Intel

*Comment Type* **TR** *Comment Status* **A**

The PCS for 10GBASE-KR use the clause 49 definition. The Clause 49 PCS has two type of service interface, one for connecting to PMA and the other for connecting to WIS.

When connecting to FEC sublayer the PCS should operate in a mode as if it is connected to PMA.

Provide this explanation in clause 74.3. Mention that a)FEC_UNITDATA.request(tx_data-group<15:0>) b) FEC_UNITDATA.indication(rx_data-group<15:0>) and c) FEC_SIGNAL.indication(SIGNAL_OK) primitives map to the corresponding PMA primitives in clause 49. (and not to WIS)

*SuggestedRemedy*

Provide this explanation in clause 74.3. Mention that a)FEC_UNITDATA.request(tx_data-group<15:0>) b) FEC_UNITDATA.indication(rx_data-group<15:0>) and c) FEC_SIGNAL.indication(SIGNAL_OK) primitives map to the corresponding PMA primitives in clause 49.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Implement suggested remedy.

In addition, explicitly state the mapping of FEC service interface to PMA primitives in PCS.

Refer to comment #59

*Cl* **74** *SC* **74.6.4.3** *P* **220** *L* **10** # 179

Ganga, Ilango Intel

*Comment Type* **T** *Comment Status* **A**

Redraw the transmit bit ordering diagram in framemaker to make the bit ordering illustration similar to Figure 49-5.

At present the figure 74-2 illustrates bit ordering for both transmit and receive. Consider to split this into to two figures one for transmit bit ordering and the other one for receive bit ordering.

*SuggestedRemedy*

Redraw the transmit bit ordering diagram in framemaker to make the bit ordering illustration similar to Figure 49-5 & 49-6.

At present the figure 74-2 illustrates bit ordering for both transmit and receive. Consider to split this into to two figures one for transmit bit ordering and the other one for receive bit ordering (similar to 49-5 & 49-6).

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Provide a figure illustrating the bit ordering for both TX and RX.

Also indicate the bit ordering for parity check bits
Refer to comment #34

*Cl* **74** *SC* **74.6.4.5.1** *P* **223** *L* **50** # 180

Ganga, Ilango Intel

*Comment Type* **ER** *Comment Status* **R**

Redraw figure 74-7 in framemaker

*SuggestedRemedy*

Redraw figure 74-7 in framemaker

*Response* *Response Status* **C**

REJECT.

The figure 74-7 is integrated in frame

*Cl* **74** *SC* **74.6** *P* **224** *L* **53** *#* 181

Ganga, Ilango Intel

*Comment Type* **TR** *Comment Status* **A**

Provide state diagram and state variable definitions at the end of clause 74.6 for FEC transmit, receive and sync as per the conventions defined in 1.2.1 (similar to state diagrams in other clauses).

*SuggestedRemedy*

Provide state diagram and state variable definitions at the end of clause 74.6 for FEC transmit, receive and sync as per the conventions defined in 1.2.1 (similar to state diagrams in other clauses)

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Redraw Figure 74-8 as per conventions defined in 1.2.1. Also define appropriate variables.

Refer to comment #38

---

*Cl* **74** *SC* **74.9** *P* **225** *L* **10** *#* 182

Ganga, Ilango Intel

*Comment Type* **T** *Comment Status* **A**

Provide FEC MDIO control/status variables mapping table similar to clause 72.5 (10GBASE-KR PMD)
Right now this variables are specified in 74.9 and 74.10. however providing it in a table form will be more legible.

*SuggestedRemedy*

Provide FEC MDIO control/status variables mapping table similar to clause 72.5 (10GBASE-KR PMD)

*Response* *Response Status* **C**

ACCEPT.

---

*Cl* **74** *SC* **74.10** *P* **225** *L* **40** *#* 183

Ganga, Ilango Intel

*Comment Type* **T** *Comment Status* **A**

Provide a subclause after 73.10 to indicate Auto-Negotiation of FEC capability and provide cross reference to clause 73.6.5 FEC capability.

Currently this is only explained in Clause 73 Auto-Negotiation. There is no reference to this text in clause 74.

*SuggestedRemedy*

Provide a subclause after 73.10 to indicate Auto-Negotiation of FEC capability and provide cross reference to clause 73.6.5 FEC capability.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Implement text from Clause 73 into Clause 74 appropriately.

---

*Cl* **74** *SC* **74.11.7** *P* **229** *L* **37** *#* 184

Ganga, Ilango Intel

*Comment Type* **E** *Comment Status* **A**

Renumber first column of PCIS Table 74.11.7 Test-pattern modes. (The current numbering skips JT4)

*SuggestedRemedy*

Renumber first column of PCIS Table 74.11.7 Test-pattern modes. (The current numbering skips JT4)

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Overtaken by events. Refer to comments #62, 134, 39

Remove the corresponding PICS for test pattern and renumber the tables

---

*Cl* **99** *SC* *P* **2** *L* **11** *#* 185

Ganga, Ilango Intel

*Comment Type* **E** *Comment Status* **A** *e*

In the following sentence ""Finally, Clause 74 defines a optional Forward Error Correction (FEC) sublayer."", replace ""a"" with ""an""

*SuggestedRemedy*

Finally, Clause 74 defines an optional Forward Error Correction (FEC) sublayer.

*Response* *Response Status* **C**

ACCEPT.

*Cl* **73** *SC* **73.6.1** *P* **178** *L* **7** # 186

Ganga, Ilango Intel

*Comment Type* **E** *Comment Status* **A**

Delete ""the"" from line 7: ""The selector field for 802.3 Backplane Ethernet is the shown in Table 73-2"":

*SuggestedRemedy*

Delete ""the"" from line 7 to read as follows:
""The selector field for 802.3 Backplane Ethernet is shown in Table 73-2"":

*Response* *Response Status* **C**

ACCEPT.

*Cl* **73** *SC* **73.6.5** *P* **179** *L* **9** # 187

Ganga, Ilango Intel

*Comment Type* **E** *Comment Status* **A**

Provide reference to clause 74

Add the following at the end of line 9:

(.....10GBASE-KR PHY is FEC capable (see Clause 74).

*SuggestedRemedy*

Add the following at the end of line 9:

""......10GBASE-KR PHY is FEC capable (see Clause 74)"".

*Response* *Response Status* **C**

ACCEPT.

*Cl* **72** *SC* **72.10.4.3** *P* **168** *L* **43** # 188

Ganga, Ilango Intel

*Comment Type* **ER** *Comment Status* **A** *done*

Incorrect reference to table 72-8 for CF11 (Training pattern) in PICS table in 72.10.4.3 . The table 72-8 has been removed and the bookmark points to the previous table 72-5 which is an incorrect reference.

Similarly there is problem with CF9 and CF10 which incorrectly point to tables 72-9.

*SuggestedRemedy*

Fix the reference to point to right table 72-4 and subclause 72.6.11.2.6.

Fix the referece to CF9 and CF10 as well. The correct bookmarks should pointing to 72-7.

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

Text from Pat:The training pattern has a figure (Fig 72-3) but no table. The suggested table 72-2 only specifies the number of bytes in the training pattern. It is a bit odd that no PICS entry seems to address training frame structure perhaps because the subclause associated with Table 72-2 has an "is" rather than a "shall".

For CF9 and CF10, it looks to me like the correct table (in the non-change bar draft) is 72-5

*Cl* **70** *SC* **70.10.4.1** *P* **104** *L* **16** # 189

Ganga, Ilango Intel

*Comment Type* **ER** *Comment Status* **A** *e*

Rename FS6 and FS8 ""Global_PMD_transmit_disable"" function in PICS table to read as ""PMD_transmit_disable""

*SuggestedRemedy*

Rename FS6 and FS8 ""Global_PMD_transmit_disable"" function in PICS table on page 104 to read as ""PMD_transmit_disable""

*Response* *Response Status* **W**

ACCEPT.

*Cl* **72** *SC* **72.5.10.4.1** *P* **116** *L* **22** # 20024

Muller, Shimon Muller Sun Microsystems, Inc

*Comment Type* **ER** *Comment Status* **A** *e*

See below

*SuggestedRemedy*

Replace "good_markers <= 0" with "bad_markers <= 0".

*Response* *Response Status* **W**

ACCEPT.

*Cl* **69A** *SC* **69A.2** *P* **64** *L* **25** # 20086

Weiner, Nick

*Comment Type* **TR** *Comment Status* **R**

Equation 69A-1 specifies an amplitude response bound for the of the ""compliance channel"". No phase response is specified. Is a phase response spec needed?

*SuggestedRemedy*

Add note to the effect that the phase response is not important.
Or else include spec for phase response.

*Response* *Response Status* **U**

REJECT.

The phase response is important. However, the phase response for a casual channel is directly related to the magnitude response. A channel approximating Ilmax(f) in magnitude response will yield a valid phase response. Significant deviations in the magnitude response will yield corresponding deviations in the phase response. However, it is expected that the implementer will attempt to use a compliance channel with response as close to Ilmax(f) as possible to yield the best result.

*Cl* **69A** *SC* **69A.3.3.5** *P* **59** *L* **11** # 20105

Moore, Charles

*Comment Type* **TR** *Comment Status* **R** *it_values*

ICR spec is largely guesswork. We should tie the spec to the Receiver Interference Tolerance test. I will present on this at the September meeting.

*SuggestedRemedy*

Will provide text ind diagrams if needed as part of presentaiton.

*Response* *Response Status* **U**

REJECT.

Straw Poll -
Option A - Increase EIT specification by 3 dB
Option B - 3 dB offset to ICR (replace in 12.5 in ICR equation to 15.5)
Option C - Reduce attenuation of Amax by 2dB at Nyquist (scale all coefficients of Amax equation by 24/26), increase EIT by 3dB
Option D - No change at this time

Option A - 0
Option B - 6
Option C - 2
Option D - 15

The Task Force invites the commenter to submit specific changes and additional justification for the changes.

*Cl* **69** *SC* **69.3.3.1** *P* **53** *L* **27** # 20112

Brown, Kevin

*Comment Type* **TR** *Comment Status* **R** *normative_channel*

An informative specification for channel parameters cannot be used to determine interoperability, which is the primary purpose of communications standards.

*SuggestedRemedy*

Specify required channel characteristics.

*Response* *Response Status* **W**

REJECT.

Refer to 318, 294

*Cl* **72** *SC* **72.6.2.1** *P* **125** *L* **25** # 20137

John, D'Ambrosia

*Comment Type* **TR** *Comment Status* **R** *it_values*

Receiver Inference Tolerance Testing per Annex 69A for 10GBASE-KR with a real world device implementation has not been demonstrated.

*SuggestedRemedy*

Need real world device implementation tested per Annex 69A.

*Response* *Response Status* **U**

REJECT.

Some preliminary testing has been shown to the Task Force, more test data is anticipated. No specific actions for change to the draft has been requested.

*Cl* **69A** *SC* **69A.3** *P* **65** *L* **27** # 20167

Spagna, Fulvio INTEL

*Comment Type* **ER** *Comment Status* **R**

Since the requirement for the compliance channel is that IL(f) >= Amin(f) this does not pose any practical constraint on how small the insertion loss of the Interference Injection Block.

*SuggestedRemedy*

Change text from:

""This block may be a pair directional couplers, a pair of pick-off tees, or any other component, as long as it passes data with sufficiently small loss so that the combination of the interference injection block and the frequency-dependent attenuator satisfies the requirements of the compliance channel. It should also be capable of injecting differential interference large enough to cause a BER of at least 10E-4.""

to:

""This block may be a pair directional couplers, a pair of pick-off tees, or any other component, as long as it allows injecting differential interference large enough to cause a BER of at least 10E-4.""

*Response* *Response Status* **U**

REJECT.

As stated in 69A.1, "The compliance channel consists of a frequency-dependent attenuator and an interference injection block." The insertion loss limits apply to the compliance channel, and not the frequency-dependent attenuation alone.

*Cl* **72** *SC* **72.6.1.5** *P* **120** *L* **36** # 20274

Telang, Vivek Broadcom

*Comment Type* **TR** *Comment Status* **R** *kr_txrl*

The Return Loss of the Transmitter is not specifed for the frequencies greater than 7.5GHz. This will allow badly designed transmitters to still claim standards compliance. Transmitters which have poor high frequency RL may have unintended effects on the receiver.

*SuggestedRemedy*

Add this line after line 36:

returnLoss(f) >= 2dB for f > 7500MHz

*Response* *Response Status* **U**

REJECT.

Return loss limits were set based on feasilibility of construction. Performance benefits to be gained not demonstrated.

Related comments: #110, 274, 573

*Cl* **45** *SC* **45.2.7** *P* **34** *L* **47** # 20281

McClellan, Brett Solarflare

*Comment Type* **ER** *Comment Status* **A**

Both P802.3an and P802.3ap are adding this new AN Registers subclause into Clause 45, however they are out of sync, use different text descriptions, and both intend to use the same registers for different purposes.
Most notably see registers 7.16, 7.19.

*SuggestedRemedy*

Synchronize with P802.3an and use common naming and text descriptions. Either use different registers for bits already defined, or explain the dual use of register bits in 7.16 and 7.19.

*Response* *Response Status* **U**

ACCEPT IN PRINCIPLE.

This document will be rewritten after .3an is stable, and before sponsor ballot, as an amendment to .3an.

*Cl* **45** *SC* **45.5.3.5** *P* **46** *L* **01** *#* 20282
McClellan, Brett Solarflare

*Comment Type* **ER** *Comment Status* **A**

The PICS are inconsistent with P802.3an.

*SuggestedRemedy*

Synchronize with P802.3an and use consistent PIC numbering and naming.

*Response* *Response Status* **U**

ACCEPT IN PRINCIPLE.

This document will be rewritten after .3an is stable, and before sponsor ballot, as an amendment to .3an.

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*Cl* **69** *SC* **69.** *P* **49** *L* **01** *#* 20318
Baumer, Howard Broadcom

*Comment Type* **TR** *Comment Status* **R** *normative_channel*

Draft is technically incomplete. The minimum that is required for a technically complete standard is to specify the transmitter, the channel / media (Cu cable, optical fiber, backplane, etc.) and the receiver. The transmitter and receiver for each PMD type are specified in Clause 70, 71, & 72. The channel is defined as informative in Clause 69 where there are ZERO "shall" statements. This makes it such that any channel can be used.

*SuggestedRemedy*

Change this clause to a normative clause adding in all the appropriate "shall" statements and setting all the limits to the appropriate values as determined by the task force.

*Response* *Response Status* **U**

REJECT.

IEEE 802.3 chip-to-chip interfaces (including Clause 47 XAUI) do not specify the channel. The only time channels are specified in IEEE 802.3 specifications are for box-to-box interconnects where the user may acquire the DTEs and media from independent entities.

In addition, the test points used to verify silicon compliance may not be available in a backplane environment.

Motion #5
Type - Technical (75%)
Description - Move to reject comment for reasons described above.
M: Charles Moore
S: Fulvio Spagna

All Y-20 N-1 Abstain- 1
Motion Passes

Related comment 294

---

*Cl* **73** *SC* **73.1** *P* **133** *L* **07** *#* 20385
Baumer, Howard Broadcom

*Comment Type* **TR** *Comment Status* **A**

Having a mandatory function who"s use is optional doesn"t make sense. Providing parallel detection for legacy devices that don"t support AN implies an 802.3ap phy without AN, a contradictory statement. Further more there is nothing in the any of the PMA/PMD type definitions that require auto-negotiation.

*SuggestedRemedy*

Make AN implementation optional for all PMA/PMD types

*Response* *Response Status* **U**

ACCEPT IN PRINCIPLE.

Delete 1st sentence of Clause 73.

Add text to Clauses 70, 71, and 72 that states the implementation of Auto-Negotiation, as specified by Clause 73, is mandatory.

By virtue of the control bits, it is implied that auto-negotiation is optional to use.

Approved without objection.

---

*Cl* **69A** *SC* **69A.** *P* **63** *L* *#* 20438
Kim, Yong Broadcom

*Comment Type* **ER** *Comment Status* **A**

Please indicate whether this is Normative or Informative. If this is Normative, there are some missing specifications such as group delay, test interface to be used for conformance test set-up, etc.

*SuggestedRemedy*

Please indicate.

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

The test procedure is normative.

Refer to comment #349

*Cl* **28A** *SC* **28A** *P* **14** *L* **26** # 20439
Kim, Yong Broadcom

*Comment Type* **TR** *Comment Status* **A** *revisit*

Sorry for a bit ignorant question -- why is Clause 73 need a selector field value, when it is NOT intended NOR allowed to be on RJ45?

*SuggestedRemedy*

Please provide justification or delete this selector field revision. If the justification also applies to the Clause 37, it ought to be rolled into 73 (I believe CX-4 was rolled in to this draft).

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

Original selector field applies to both 28 and 37. Since Clause 55 uses Clause 28 algorithms and signaling, and the new auto-negotiation register set (Clause 45 MDIO, MMD 7), it was deemed to be valuable to indicate the managing entity, what type of device is utilizing the auto-negotiation register set.

Ammend selector field description to read "IEEE 802.3, Clauses 28 and 37"

Unclear what is intended by the reference to 10GBASE-CX4

*Cl* **44** *SC* **44.1.1** *P* **19** *L* **23** # 20440
Kim, Yong Broadcom

*Comment Type* **TR** *Comment Status* **A** *half-duplex*

Not in the prior style (editorial) and need to add full-duplex only requirement (Technical Required) of 802.3ap.

*SuggestedRemedy*

Second paragraph in 34.1 to read ""Gigabit Ethernet uses the extended ISO/IEC 8802-3 MAC layer interface, connected through a Gigabit Media Independent Interface layer to Physical Layer entities (PHY sublayers) such as 1000BASE-LX, 1000BASE-SX, and 1000BASE-CX, 1000BASE-T, and 1000BASE-KX"" Similar change to line 35 (10G) makes sense also, if this comment is accepted.

Third Paragraph in 34.1 to read ""Gigabit Ethernet extends...in bandwidth. In full duplex mode, the ... 100BASE-T full duplex mode. [new sentence] Gigabit Ethernet connected through PHY type 1000BASE-KX shall operate only in full-duplex mode"".

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

See Comment #30, which removed half-duplex operation.

The text that exists today is a pointer to Clause 69, which defines Backplane Ethernet operation, and further elaboration in Clauses 34 and 44 is not required.

*Cl* **45** *SC* **45.1** *P* **21** *L* **23** # 20441
Kim, Yong Broadcom

*Comment Type* **TR** *Comment Status* **A** *revisit*

deleting ""Ethernet"" from line 21 and adding ""Ethernet"" to line 23, seems to demote b) 10PASS-TS and 2BASE-TL and c) 10, 100 or 1000 as non-Ethernet -- does not look like intended change nor 802.3ap specific change.

*SuggestedRemedy*

Please provide rationale for this change, or fix the text to address my concern, or undo the revision,

*Response* *Response Status* **U**

ACCEPT IN PRINCIPLE.

The D802.3am has already removed the word "Ethernet" from this line. Since 802.3ap is providing editing instructions to 802.3am, this line need not be changed by 802.3ap.

Also 802.3am paragraph 3 adequately covers the application of Clause 45 MDIO access to Backplane Ethernet, therefore the changes are not necessary. Delete editing instructions to 45.1 paragraph 3.

Related #410

*Cl* **45** *SC* **45.2.7.100** *P* **43** *L* **11** # 20442
Kim, Yong Broadcom

*Comment Type* **TR** *Comment Status* **A** *e*

""This bit is an exact copy of bit 1.11.2"" (referring to 7.48.3 10GBASE-KT). Looking at 1.11.2:1 (45.2.1.10, pg 29), it is Reserved.

*SuggestedRemedy*

Please delete the line, or correct so that all are consistent

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

Will remove the text
see also #492

*Cl* **69** *SC* **69.1.2** *P* **49** *L* **29** # 20443

Kim, Yong Broadcom

*Comment Type* **TR** *Comment Status* **A** *kx_halfduplex*

""a) Support the CSMA/CD MAC"" - Confusing, since 802.3ap is full-duplex only, and there is no carrier sense nor collision detecction in full-duplex.

*SuggestedRemedy*

Change the text to read"" a) Support the 802.3 MAC""

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change the text to
"a) Support full duplex operation only."

Refer to comments #30 and #430

*Cl* **69** *SC* **69.1.2** *P* **49** *L* **31** # 20444

Kim, Yong Broadcom

*Comment Type* **TR** *Comment Status* **R**

""c) Meet or exceed CISPR/FCC Class A"" is a fine goal for product but not has been the objective of IEEE 802.3 specification. Instead, spec requires that you meet regional applicable reguratory requirements.

*SuggestedRemedy*

Delete and re-number. See other PHY sections under Environmental Requirements. BTW, you probably do not want to use the word ""exceed"" in any case :-)

*Response* *Response Status* **W**

REJECT.

This is a project objective of 802.3ap.
Reference Comment #14 for new wording.

*Cl* **69** *SC* **69.4** *P* **60** *L* **08** # 20445

Kim, Yong Broadcom

*Comment Type* **TR** *Comment Status* **R** *delay*

Delay constraints from MAC Pause versus propagation delay of 1 m PCB traces + any PHY electronics are orders of magnitude apart. This clause, while friendly, seems not relevent. If the intent is to allow re-timing, re-clocking devices, it may be approproate to add it in form of informative annex. If this is not the intent, I would prefer to see just link latency max per segment type.

*SuggestedRemedy*

Either 1) add informative annex, or 2) specify link max latency including PHY, or provide justification why this clause is needed.

*Response* *Response Status* **W**

REJECT.

Subclause 69.4 follows the spirit and style of subclause 44.3. It is needed as much for Backplane Ethernet as it was for 10-Gigabit Ethernet.

*Cl* **69** *SC* **69.3.3.2** *P* **54** *L* **44** # 20509

Dawe, Piers Agilent

*Comment Type* **TR** *Comment Status* **A**

Attenuation is a well known word with an established meaning. You cannot change its meaning. You'll have to change the name of your quantity A(f).

*SuggestedRemedy*

Change to 'attenuation trend line' or 'linear fitted attenuation' (or 'insertion loss trend line' if you prefer).

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change "Attenuation, A(f)" to "Fitted Attenuation, A(f)."

Note to editor - change all occurances referring to the variable "Attenuation, A(f)"

*Cl* **72** *SC* **72.5.10.2** *P* **109** *L* **39** # 20529
Dawe, Piers Agilent

*Comment Type* **TR** *Comment Status* **A**

This 0xFFFF0000 is the only use of 0x in the whole of 802.3ap, apart from a table you copied and shouldn't. You shouldn't burden the reader with having to know unnecessary notations that, unlike actual words, cannot be looked up in a dictionary. Misleading: I read this as zero, don't care, 1111,1111 and so on. Just say what you mean in English. Editorials at end of sentence.

*SuggestedRemedy*

Change to 'pattern, hexadecimal FFFF0000 as expressed in 10.3125 Gbd symbols.'

*Response* *Response Status* **U**

ACCEPT.

---

*Cl* **72** *SC* **72.6.1.9** *P* **122** *L* **01** # 20531
Dawe, Piers Agilent

*Comment Type* **ER** *Comment Status* **A**

Redundant table.

*SuggestedRemedy*

Change 'Table 72-8' to 'Table 52-20' here and in 72.6.2.1, and delete table 72-8.

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

---

*Cl* **73** *SC* **73.8** *P* **145** *L* **04** # 20539
Dawe, Piers Agilent

*Comment Type* **TR** *Comment Status* **A**

You can't say 'The clause 45 Management Data Input/Output (MDIO) interface shall be used ...' because per 45.1, 'The MDIO electrical interface is optional.'.

*SuggestedRemedy*

Change to 'may be used', 'may conveniently be used', 'is recommended' or similar.

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

See 253

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*Cl* **72** *SC* **72.6.2.6** *P* **125** *L* **18** # 20575
Ghiasi, Ali Broadcom

*Comment Type* **TR** *Comment Status* **R** *kr_rxrl*

Input return loss defined for 10GBASE-KR only provides about 4 dB of return loss at half the baudrate this equates to 63% reflection! The combination of the loose return loss and stressor that does not incorporates reflections will cause significant interoperability issues and failures.

*SuggestedRemedy*

Propose the following return loss mask
from 10 MHz to 2000 MHz RL<=9 dB
RL = 9 - 16.67xLOG10(f/5.16 GHz), 2 GHz<= f<=10.3125 GHz

*Response* *Response Status* **U**

REJECT.

The task force requires more information - feasibility of construction and system performance benefits.

Related comments: #110, 274, 573

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*Cl* **72** *SC* **72.6.2** *P* **125** *L* **12** # 20576
Ghiasi, Ali Broadcom

*Comment Type* **TR** *Comment Status* **R**

The receiver is missing maximum non equalizable jitter

*SuggestedRemedy*

Propose total non equalizable jitter to be 0.6 UI which include PJ, RJ, and DCD. In addition propose to put a maximum 0.15 UI limit on the DCD.

*Response* *Response Status* **U**

REJECT.

The concept of the non-equalizable jitter requires (1) a definition for non-equalizable jitter, (2) a procedure that may be used to measure non-equalizable jitter, (3) some justification regarding why 0.6 UI is the correct value.

A limit on DCD may be useful, but one would hope that it is considerably less than 0.15 UI (most simulations presented to date have assumed 0 to 0.05 UI DCD).

*Cl* **69A** *SC* **69A.1** *P* **63** *L* **40** *#* 20578
Ghiasi, Ali Broadcom

*Comment Type* **TR** *Comment Status* **R** *it_procedure*

Interference tolerance test does not stress the CDR to frequency sensitivity.

*SuggestedRemedy*

propose to add Sinusoidal Jitter (SJ) through the BERT to the channel with the following mask parameters
40 KHz - 5 UI
400 KHz - 0.5 UI
4 MHz - 0.1 UI

*Response* *Response Status* **U**

REJECT.

See Comment #259.

Sinusoidal jitter was added as an additional stress. Swept frequency sinusoidal jitter is seen as probing the CDR corner frequency, and is not seen as critical component to interoperability.

*Cl* **69** *SC* **69.1.2** *P* **49** *L* **37** *#* 20611
Diab, Wael Cisco

*Comment Type* **ER** *Comment Status* **R**

The objective states that the BER should be 10e-12 or better. Are the BER for the various interfaces all the same? Could a better BER be reached for the higher speed interfaces?

*SuggestedRemedy*

Please state the BER requirements for each interface seperately

*Response* *Response Status* **U**

REJECT.

The objectives states a BER of better or equal to 10e-12 over all backplanes.

*Cl* **71** *SC* **71.6.2.1** *P* **96** *L* **12** *#* 20612
Diab, Wael Cisco

*Comment Type* **TR** *Comment Status* **R** *ber_min*

Was the BER here set to match the 1G or can we do better than 10e-12 on the 10GBASE-KX4 interface?

*SuggestedRemedy*

Raise the BER requirements to 10e-15 or better

*Response* *Response Status* **U**

REJECT.

BER target based on the Task Force's expectation of what could be measured with confidence and in a timely manner. Actual implementations may exceed this objective.

*Cl* **72** *SC* **72.6.2.1** *P* **125** *L* **36** *#* 20613
Diab, Wael Cisco

*Comment Type* **TR** *Comment Status* **R** *ber_min*

Was the BER here set to match the 1G or can we do better than 10e-12 on the 10GBASE-KR interface?

*SuggestedRemedy*

Raise the BER requirements to 10e-15 or better

*Response* *Response Status* **U**

REJECT.

BER target based on the Task Force's expectation of what could be measured with confidence and in a timely manner. Actual implementations may exceed this objective.

*Cl* **69A** *SC* **69A.4** *P* **65** *L* **36** *#* 20628

Kundu, Aniruddha Intel

*Comment Type* **TR** *Comment Status* **A**

Iterference generator needs to add a phase shift to the variable amplitude as well to create random noise environment.

*SuggestedRemedy*

Add the following text: ... "from f1 to fbaud with adjustable amplitude from with adjustable amplitude" to "from f1 to fbaud with adjustable amplitude from with adjustable amplitude and phase shift"

*Response* *Response Status* **W**

ACCEPT IN PRINCIPLE.

To test the receiver with interference at all phase positions, the interference will be asynchronous.

Refer to comment #302

---

*Cl* **72** *SC* **72.6.2.1** *P* **125** *L* **38** *#* 20629

Kundu, Aniruddha Intel

*Comment Type* **TR** *Comment Status* **R** *it_values*

Iterference generator needs to add a phase EITbase Value of 15mV p-p is too restrictive for system vendors to ensure for proper receiver operation. Unclear how this data was derived. Need background data for justification.

*SuggestedRemedy*

Gathering data from different platform vendors as well as Silicon vendors to verify this value or specify a better EITbase value is on going. Should be reviewed at the plenary meeting.

*Response* *Response Status* **W**

REJECT.

The Task Force invites the commenter to submit a new value for the EIT value and justification of that value.

---

*Cl* **45** *SC* **45.2.7.3** *P* **39** *L* **19** *#* 20644

David V James JGG

*Comment Type* **TR** *Comment Status* **R**

DVJ-33
All names should be one word, possibly run-together. Otherwise, they are abused when used in code or equations and hard to parse within sentences.

*SuggestedRemedy*

NoRemedySupplied

*Response* *Response Status* **U**

REJECT.

The naming of these bits is consistent with existing practice for bits in the Clause 45 registers. In addition some of these particular bits are named in the same way as the equivalent bits found in Clause 28 - see
Auto-Negotiation advertisement register (Register 4) for example.

Since this project is developing an amendment to the base standard, and as such it is not within the scope of this project to perform global changes to the base standard. Instead consistency with the base standard will be
maintained.

---

*Cl* **45** *SC* **45.5.3.5** *P* **46** *L* **54** *#* 20649

David V James JGG

*Comment Type* **TR** *Comment Status* **A** *e*

DVJ-38
Bad break at bottom of page, leading to a blank line between table rows.

*SuggestedRemedy*

Use debugged templates, at:
http://grouper.ieee.org/groups/msc/WordProcessors.html

*Response* *Response Status* **U**

ACCEPT IN PRINCIPLE.

Will correct the table as per IEEE style guidelines.

*Cl* **69A** *SC* **69A.5** *P* **69** *L* **02** # 20670
David V James JGG

*Comment Type* **ER** *Comment Status* **R** *caps*

DVJ-59
Capitalization within a clause or subclause title should be limited to the first word, as per the IEEE Style Guide.

*SuggestedRemedy*

Physical Medium Dependent Sublayer and Baseband Medium,
==>
Physical medium dependent sublayer and baseband medium,

*Response* *Response Status* **U**

REJECT.

See comment #742

*Cl* **70** *SC* **70.2** *P* **69** *L* **26** # 20671
David V James JGG

*Comment Type* **ER** *Comment Status* **R** *caps*

DVJ-60
Capitalization within a clause or subclause title should be limited to the first word, as per the IEEE Style Guide.

*SuggestedRemedy*

Physical Medium Dependent (PMD) Service Interface
==>
Physical medium dependent (PMD) service interface

*Response* *Response Status* **U**

REJECT.

See comment #742

*Cl* **72** *SC* **72.5.10.4** *P* **115** *L* **42** # 20690
David V James JGG

*Comment Type* **ER** *Comment Status* **A** *caps*

DVJ-117
Capitalization within a clause or subclause title should be limited to the first word, as per the IEEE Style Guide.

*SuggestedRemedy*

State Diagrams
==>
State diagrams

*Response* *Response Status* **U**

ACCEPT.

See comment #742

*Cl* **72** *SC* **72.8.5** *P* **127** *L* **20** # 20706
David V James JGG

*Comment Type* **ER** *Comment Status* **R** *caps*

DVJ-133
Capitalization within a clause or subclause title should be limited to the first word, as per the IEEE Style Guide.

*SuggestedRemedy*

Protocol Implementation Conformance Statement
==>
Protocol implementation conformance statement

*Response* *Response Status* **U**

REJECT.

Will consult the publication editor and implement prior to sponsor ballot.

*Cl* **73** *SC* **73.1** *P* **133** *L* **05** *#* 20707

David V James JGG

*Comment Type* **ER** *Comment Status* **R** *caps*

DVJ-134
English words should not be capitalized simply because their meaning is different from normal English usage.

*SuggestedRemedy*

Introduction
==>
introduction

*Response* *Response Status* **U**

REJECT.

Identifying a special term rather than standard English usage is a valid reason to captialize. However, introduction is used in the normal English sense and should not be capitalized.

*Cl* **73** *SC* **73.5.2** *P* **136** *L* **14** *#* 20710

David V James JGG

*Comment Type* **ER** *Comment Status* **A** *caps*

DVJ-137
Capitalization within figure callouts should be limited to the first word, as per IEEE Style Guide. This rule always applies, regardless of whether the callout is split into multiple lines.

*SuggestedRemedy*

Clock Transitions
==>
Clock transitions

*Response* *Response Status* **U**

ACCEPT IN PRINCIPLE.

The IEEE Style guide does not specify that. Its requirements on captialization in figures are:
Letter symbols not normally capitalized shall always be lowercase (see Figure 4).
Only the initial letter of the first word and proper nouns shall be capitalized in figure titles.

The text in question is a figure caption and not a figure title.
However, the capitalization of "transition" and of "bit on wire" seems unnecessary so make lower case.

*Cl* **73** *SC* **73.5.3** *P* **137** *L* **06** *#* 20714

David V James JGG

*Comment Type* **ER** *Comment Status* **R** *e*

DVJ-141
Nonstandard table line widths

*SuggestedRemedy*

==>
very thin in center
thin on edges of header and body

*Response* *Response Status* **U**

REJECT.

This is an Adobe PDF display quirk and not a source problem. The lines are all the same on the printed page. If you change the PDF magnification on the screen, you will also see the "real" line widths are uniform.

*Cl* **73** *SC* **73.6.4** *P* **139** *L* **20** *#* 20717

David V James JGG

*Comment Type* **ER** *Comment Status* **R** *e*

DVJ-144
Nonstandard table line widths

*SuggestedRemedy*

==> very thin in center
==> thin on edges of header and body

*Response* *Response Status* **U**

REJECT.

Acrobat display problem. If you print the page or change the maginification you will see that the line widths of the source are uniform.

*Cl* **73** *SC* **73.7.6** *P* **142** *L* **32** *#* 20719

David V James JGG

*Comment Type* **ER** *Comment Status* **R** *e*

DVJ-146
Nonstandard table line widths

*SuggestedRemedy*

==> very thin in center
==> thin on edges of header and body

*Response* *Response Status* **U**

REJECT.

This is an Adobe PDF display quirk and not a source problem. The lines are all the same on the printed page. If you change the PDF magnification on the screen, you will also see the "real" line widths are uniform.

*Cl* **73** *SC* **73.9.2** *P* **154** *L* **08** *#* 20722

David V James JGG

*Comment Type* **ER** *Comment Status* **R** *e*

DVJ-149
Nonstandard table line widths

*SuggestedRemedy*

==> very thin in center
==> thin on edges of header and body

*Response* *Response Status* **U**

REJECT.

This is an Adobe PDF display quirk and not a source problem. The lines are all the same on the printed page. If you change the PDF magnification on the screen, you will also see the "real" line widths are uniform.

*Cl* **70** *SC* **70.8.5** *P* **79** *L* **15** *#* 20724

David V James JGG

*Comment Type* **ER** *Comment Status* **R** *caps*

DVJ-77
Capitalization within a clause or subclause title should be limited to the first word, as per the IEEE Style Guide.

*SuggestedRemedy*

Protocol Implementation Conformance Statement
==>
Protocol implementation conformance statement

*Response* *Response Status* **U**

REJECT.

See comment #742

*Cl* **71** *SC* **71.** *P* **85** *L* **02** *#* 20725

David V James JGG

*Comment Type* **ER** *Comment Status* **R** *e*

DVJ-78
Capitalization within a clause or subclause title should be limited to the first word, as per the IEEE Style Guide.

*SuggestedRemedy*

Physical Medium Dependent Sublayer and Baseband Medium,
==>
Physical medium dependent sublayer and baseband medium,

*Response* *Response Status* **U**

REJECT.

See comment #742

*Cl* **71** *SC* **71.8.5** *P* **97** *L* **43** # 20741
David V James JGG

*Comment Type* **ER** *Comment Status* **R** *caps*

DVJ-94
Capitalization within a clause or subclause title should be limited to the first word, as per the IEEE Style Guide.

*SuggestedRemedy*

Protocol Implementation Conformance Statement
==>
Protocol implementation conformance statement

*Response* *Response Status* **U**

REJECT.

See comment #742

*Cl* **72** *SC* **72.** *P* **105** *L* **02** # 20742
David V James JGG

*Comment Type* **ER** *Comment Status* **R** *caps*

DVJ-95
Capitalization within a clause or subclause title should be limited to the first word, as per the IEEE Style Guide.

*SuggestedRemedy*

Physical Medium Dependent Sublayer and Baseband Medium,
==>
Physical medium dependent sublayer and baseband medium,

*Response* *Response Status* **U**

REJECT.

As stated in the Clause 1 'Overview' of the IEEE-SA Style Manual it contains a 'preferred style for the preparation of proposed IEEE standards' and that 'it is strongly recommended that working groups consult with IEEE Standards project editors before deviating from this style.' The draft will therefore go through an editorial review prior to Sponsor Ballot and we will work with IEEE-SA Editorial Staff on any issues they bring to our attention in respect to the IEEE-SA Style Manual or any other issue.

It however has to be understood that this project is developing an amendment to the base standard, and as such it is not within the scope of this project to perform global changes to the base standard. Instead consistency with the base standard will be maintained.

*Cl* **72** *SC* **72.2** *P* **105** *L* **31** # 20743
David V James JGG

*Comment Type* **ER** *Comment Status* **R** *caps*

DVJ-96
Capitalization within a clause or subclause title should be limited to the first word, as per the IEEE Style Guide.

*SuggestedRemedy*

Physical Medium Dependent (PMD) Service Interface
==>
Physical medium dependent (PMD) service interface

*Response* *Response Status* **U**

REJECT.

See comment #742

*Cl* **01** *SC* **01.4** *P* **13** *L* **37** # 20764
David V James JGG

*Comment Type* **ER** *Comment Status* **A** *caps*

DVJ-4
English words should not be capitalized simply because their meaning is different from normal English usage.

*SuggestedRemedy*

Differential Manchester Encoding
==>
differential Manchester encoding

*Response* *Response Status* **U**

ACCEPT IN PRINCIPLE.

Will consult the publication editor and implement prior to sponsor ballot.

*Cl* **01** *SC* **01.5** *P* **13** *L* **51** # 20767

David V James JGG

*Comment Type* **ER** *Comment Status* **A** *Caps*

DVJ-7
English words should not be capitalized simply because their meaning is different from normal English usage.

*SuggestedRemedy*

Local Device
==>
local device

*Response* *Response Status* **U**

ACCEPT IN PRINCIPLE.

Will consult the publication editor and implement prior to sponsor ballot.

*Cl* **01** *SC* **01.5** *P* **13** *L* **52** # 20768

David V James JGG

*Comment Type* **ER** *Comment Status* **A** *Caps*

DVJ-8
English words should not be capitalized simply because their meaning is different from normal English usage.

*SuggestedRemedy*

Link Partner
==>
link partner

*Response* *Response Status* **U**

ACCEPT IN PRINCIPLE.

Will consult the publication editor and implement prior to sponsor ballot.

*Cl* **01** *SC* **01.5** *P* **13** *L* **53** # 20769

David V James JGG

*Comment Type* **ER** *Comment Status* **A** *caps*

DVJ-9
English words should not be capitalized simply because their meaning is different from normal English usage.

*SuggestedRemedy*

Next Page
==>
next page

*Response* *Response Status* **U**

ACCEPT IN PRINCIPLE.

Will consult the publication editor and implement prior to sponsor ballot.

*Cl* **01** *SC* **01.5** *P* **13** *L* **54** # 20770

David V James JGG

*Comment Type* **ER** *Comment Status* **A** *caps*

DVJ-10
English words should not be capitalized simply because their meaning is different from normal English usage.

*SuggestedRemedy*

Extended Next Page
==>
extended next page

*Response* *Response Status* **U**

ACCEPT IN PRINCIPLE.

Will consult the publication editor and implement prior to sponsor ballot.

*Cl* **45** *SC* **45.** *P* **21** *L* **02** # 20772

David V James JGG

*Comment Type* **ER** *Comment Status* **A** *caps*

DVJ-12
English words should not be capitalized simply because their meaning is different from normal English usage.

*SuggestedRemedy*

Data Input/Output (MDIO) Interface
==>
data input/output (MDIO) interface

*Response* *Response Status* **U**

ACCEPT IN PRINCIPLE.

Will consult the publication editor and implement prior to sponsor ballot.

*Cl* **45** *SC* **45.** *P* **22** *L* **05** # 20773

David V James JGG

*Comment Type* **ER** *Comment Status* **A** *caps*

DVJ-13
English words should not be capitalized simply because their meaning is different from normal English usage.

*SuggestedRemedy*

Manageable Device
==>
manageable device

*Response* *Response Status* **U**

ACCEPT IN PRINCIPLE.

Will consult the publication editor and implement prior to sponsor ballot.

*Cl* **45** *SC* **45.2.1.1** *P* **25** *L* **09** # 20776

David V James JGG

*Comment Type* **TR** *Comment Status* **R**

DVJ-16
R/W has to meanings in the same table.

*SuggestedRemedy*

Entries in the table should be RW.
Do so, here and elsewhere.

*Response* *Response Status* **U**

REJECT.

Accepting the change would be inconsistent with 802.3REVam.

*Cl* **45** *SC* **45.2.1.1** *P* **25** *L* **12** # 20777

David V James JGG

*Comment Type* **TR** *Comment Status* **A**

DVJ-17
IEEE styles are to center small columns.

*SuggestedRemedy*

Do so, here and elsewhere.

*Response* *Response Status* **U**

ACCEPT IN PRINCIPLE.

Will consult with the publication editor.