

IEEE P802.3an Comments

Cl 00 SC P L Comment # 444
 Wael William Diab Cisco Systems

Comment Type E Comment Status X

Please ensure that the document is correctly formatted and that the template is properly applied. For instance, the line numbers are supposed to alternate sides between even and odd pages. It looks like this may be broken in some of the chapters like 55.

SuggestedRemedy

Ensure that the IEEE template is applied correctly.

Proposed Response Response Status O

Cl 00 SC P L Comment # 301
 Glenn Parsons Nortel

Comment Type E Comment Status D

The headers are different throughout the draft:

IEEE P802.3an DRAFT 2.0 LOCAL AND METROPOLITAN AREA NETWORKS
 IEEE P802.3an DRAFT 2.0 Revisions based on IEEE Draft P802.3REVam/D2.1
 IEEE P802.3an DRAFT 2.0 Revisions based on IEEE P802.3REVam/Draft 1.0/June 2004
 IEEE P802.3an DRAFT 2.0 Revisions based on P802.3REVam/Draft 1.1/October 2004

If this is correct, and the revisions are truly based on older versions of REVam, then there is a bigger problem.

If this is simply a typo, then it can simply be fixed.

SuggestedRemedy

Ensure that this draft is tracking 802.3REVam and that the revisions are against the latest draft D2.2.

Change all to:

IEEE P802.3an DRAFT 2.0 Draft Amendment to IEEE STD 802.3-2005

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 00 SC P L Comment # 338
 Dawe, Piers Agilent

Comment Type E Comment Status D

Template has no line 43!

SuggestedRemedy

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 00 SC P L Comment # 684
 Law, David 3Com

Comment Type E Comment Status X

Generally too much of the existing text is included where changes are shown, and example of this is where the entire Annex 30B is reproduced to show just one additional line.

SuggestedRemedy

Suggest some of the existing text that is provided for the changed Clauses is beyond that required to provide context to the proposed change and should not be included in future drafts.

Proposed Response Response Status O

Cl 00 SC P L Comment # 442
 Wael William Diab Cisco Systems

Comment Type TR Comment Status X

Please add an Annex similar to that found in 1000BASE-T (Annex 40A), which addresses cabling design guidelines and Alien Crosstalk.

SuggestedRemedy

Introduce an Annex such as 40A in 1000BASE-T, could be Annex 55B.

Proposed Response Response Status O

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Cl 00 SC P L Comment # 682
 Law, David 3Com

Comment Type E Comment Status X

Need to follow the editing instructions stated in the editors notes at the start of each changed Clause.

Examples:

Page 8, line 29:

A insert editing instruction is provided however the text being inserted is under lined. This is not correct, only the Change instruction uses underscore and strikeout, the text should not be underlined.

Page 48, line 43:

A Insert editing instruction is given but new text is added to an existing subclause. An insert should 'add new material without disturbing existing material, what is being done here is actually a Change. Make the editing instruction a change instruction.

In addition generally a Clause or subclause heading is given, the editing instruction follows and then, in the case of a Change instruction for example, the change text is shown.

Page 54, line 12

A Modify instruction is used however no such editing instruction is defined.

Page 57, line 20

A insert instruction is give where a Change instruction should be used. In addition aPHYType is the attribute, what is being added is an additional enumeration.

SuggestedRemedy

Please follow editing instructions stated in the editors notes at the start of each changed Clause.

Proposed Response Response Status O

Cl 00 SC P L Comment # 683
 Law, David 3Com

Comment Type ER Comment Status X

The titled for the changed Clauses is incorrect, Revision is a keyword in IEEE-SA speak and is being used incorrectly here.

SuggestedRemedy

Change the title of the changed Clauses from 'Revisions to IEEE P802.3REVam ... ' to read 'Changes to IEEE P802.3REVam ...'.

Proposed Response Response Status O

Cl 00 SC P1 L1 Comment # 605
 Grow, Robert Intel

Comment Type E Comment Status X

I hope the fonts are a font substitution thing (because the editor doesn't have all the right fonts) and not a change to the styles. The fonts in the document are mostly all wrong.

SuggestedRemedy

Perhaps the editor could load appropriate fonts.

Proposed Response Response Status O

Cl 00 SC P3 L0 Comment # 606
 Grow, Robert Intel

Comment Type ER Comment Status X

Headers are not correct.

SuggestedRemedy

Replace with recommended headers.

Proposed Response Response Status O

Cl 00 SC P3 L15 Comment # 618
 Grow, Robert Intel

Comment Type E Comment Status X

To aid the publication editor and reduce the problems of parallel projects modifying the same portions of the standard add an Editor's Note.

SuggestedRemedy

Insert an "Editor's Note (to be removed prior to final publication). The publication editor might want to change some of the editing instructions for this clause to be "Change" instructions rather than "Insert". Reviewers and the publication editor should note that editing instructions have been written to minimize the probability of changes being lost at publication. Other active amendment projects (e.g., P802.3aq and P802.3ap) are likely to modify the same text, and the order of approval for the active amendments is uncertain.

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 00 SC 0 P1 L11 Comment # 1
 David V James JGG
 Comment Type E Comment Status D
 DVJ-1
 The titles are the wrong font.
 SuggestedRemedy
 Use compliant templates, which use Arial font.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Problem was missing fonts and should be fixed in the next draft.

Cl 00 SC 14.3.1.2.1 P L Comment # 502
 Dave, Nack Solarflare Communicat
 Comment Type T Comment Status X
 The link pulse template defined in clause 14 requires conformance to the template both with and without the category 3 cable model (Fig. 14-7.) Auto -negotiation to 10GBaseT requires link pulses to conform to this template. 10GBaseT transmitters are required to have high linearity, but the transmit output level is only 2.5Vp-p differential. This is only about half the amplitude that would be required to meet the link pulse template with the cat-3 cable model (transmit output needs to be about 2.5V zero-peak or 5.0V p-p.) If the 10GBaseT transmitters are burdened with the requirement to drive this larger amplitude, the linearity performance will be compromised. A POTENTIAL SOLUTION All of the cables specified in 10GBaseT (55.7) have dramatically less attenuation than the old category 3 cable. In fact the normal transmit amplitude for 10GBaseT (1.25V zero to peak) is sufficient to meet the link pulse template when passed through any of the cables specified in 55.7.
 SuggestedRemedy
 Replace 28.2.1.1.1 "FLP bursts shall be composed of link pulses meeting the requirements of Fig. 14-12." with "For devices auto-negotiating to 10/100/1,000 Mb/s, all link test pulses in the FLP Burst Sequence shall meet the template requirements of Figure 14-12 when measured across each of the test loads defined in Figure 14-11; both with the load connected directly to the TD circuit and with the the load connected through the twisted pair model as defined in Figures 14-7 and 14-8. For devices auto-negotiating to 10,000 Mb/s, all link test pulses in the FLP Burst sequence shall meet the template requirements of Figure 14-12 when measured across each of the test loads defined in Figure 14-11; both with the load connected directly to the TD circuit and with the load connected through each of the cable types and distances defined in 55.7."
 Proposed Response Response Status O

Cl 00 SC 55.7.3.2.1 P208 L18 Comment # 248
 Koeman, Henricus Fluke Networks
 Comment Type TR Comment Status D cabling
 Similar considerations as for PS ANEXT apply to PS AELFEXT. Instead, PS AFEXT is the important and measured parameter. For example at 1 MHz, the PSAELFEXT limit is 77.9 dB and the IL is 2.2 dB, for a PSAFEXT of 80.1 dB. At 10 MHz, the PSAELFEXT limit is 57.9 dB and the IL is 6.3 dB, for a PSAFEXT of 64.2 dB. The lower frequency limit for pass/fail must be raised above 1 MHz, but possibly not as much as for PSANEXT. For consistency with PSANEXT requirements, the same 10 MHz lower frequency is recommended. Without this change, verification of performance at low frequencies becomes practically impossible.
 SuggestedRemedy
 Change the lower frequency of the PS AELFEXT requirement to 10 MHz in equation 55.29.
 Proposed Response Response Status O

Cl 01 SC P3 L1 Comment # 609
 Grow, Robert Intel
 Comment Type E Comment Status X
 The style for the changed clauses is cumbersome and can be improved, both for readability and for closer resemblance to how the document will be published.
 SuggestedRemedy
 Insert an additional title page as the first page of the standard (as found in IEEE Std 802.3ah-2002, appropriately edited for a draft). Include the appropriate Editorial Note on this page (the one about Change, Insert, Delete, and Replace).
 Delete lines 1-16 on pages 5, 47, 50, 53, 57, 61, 75, 83
 Editor's choice whether to begin each changed clause on a new page, but I recommend not.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 01 SC 1.4 P3 L 35 Comment # 424
 Daines, Kevin World Wide Packets
 Comment Type ER Comment Status X
 The definition for the term DSQ128 is included in clause 1.4. However, Clause 30 and 44 use the term 128DSQ. Clause 55 reverts back to DSQ128.
 SuggestedRemedy
 Harmonize on a consistent term.
 DSQ128 is found 52 times within D2.0.
 128DSQ is found 4 times within D2.0.
 Changing 128DSQ to DSQ128 would be less work.
 Proposed Response Response Status O

Cl 01 SC 1.4 P3 L 40 Comment # 305
 Dawe, Piers Agilent
 Comment Type T Comment Status D
 In 64B/65B, do you really scramble before prepending?
 SuggestedRemedy
 Swap around if necessary. Make 55.3.2 more explicit if necessary.
 Proposed Response Response Status O

Cl 01 SC 1.4 P3 L 40 Comment # 304
 Dawe, Piers Agilent
 Comment Type T Comment Status D
 A code is not a block
 SuggestedRemedy
 Change to 'A block oriented encoding in which 64-bit blocks are scrambled and prepended with single bits to indicate whether a block contains ...'
 Proposed Response Response Status O

Cl 01 SC 1.4 P3 L 44 Comment # 2
 David V James JGG
 Comment Type E Comment Status D
 DVJ-2
 Misspelling
 SuggestedRemedy
).
 ==>
 .)
 Proposed Response Response Status O

Cl 01 SC 1.4 P3 L 58 Comment # 321
 Dawe, Piers Agilent
 Comment Type E Comment Status D
 Please add Tomlinson-Harashima precoder to list of definitions.
 SuggestedRemedy
 per comment
 Proposed Response Response Status O

Cl 01 SC 1.5 P3 L 52 Comment # 454
 Healey, Adam Agere Systems
 Comment Type E Comment Status X
 Multiple abbreviations are used in clauses 28 and 45 without a corresponding definition in clause 1.5 (based on 802.3REVam/D2.2).
 SuggestedRemedy
 Include the following abbreviations in subclause 1.5:
 AN - Auto-Negotiation
 BP - Base Page
 LD - Local Device
 LP - Link Partner
 NP - Next Page
 XNP - Extended Next Page
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 01 SC 1.5 P 3 L 58 Comment # 320
 Dawe, Piers Agilent
 Comment Type E Comment Status D
 Please add THP to list of abbreviations. A search on the web seemed to indicate that the two names are usually joined by a hyphen.
 SuggestedRemedy
 THP Tomlinson-Harashima precoder
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 01 SC 1.5 P 3 L 58 Comment # 257
 Marris, Arthur Cadence
 Comment Type T Comment Status D
 Add abbreviations
 SuggestedRemedy
 Add
 FIR Finite Impulse Response
 IIR Infinite Impulse Response
 THP Tomlinson Harashima Precoder
 Maybe also add definitions for these to 1.4
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 28 SC P 25 L 36 Comment # 556
 Bradshaw, Peter Intersil
 Comment Type E Comment Status X
 "after a successful master/slave" msiss-spelt
 SuggestedRemedy
 Replace "after a successful master/slave" by "after a successful master/slave"
 Proposed Response Response Status O

Cl 28 SC 2.1.1.1 P 6 L 10 Comment # 543
 Zimmerman, George Solarflare Communicat
 Comment Type TR Comment Status X
 THE PROBLEM (referring to the last paragraph of 14.3.1.2.1) The link pulse template defined in clause 14 requires conformance to the template both with and without the category 3 cable model (Fig. 14-7.) Auto -negotiation to 10GBaseT requires link pulses to conform to this template. 10GBaseT transmitters are required to have high linearity, but the transmit output level is only 2.5Vp-p differential. This is only about half the amplitude that would be required to meet the link pulse template with the cat-3 cable model (transmit output needs to be about 2.5V zero-peak or 5.0V p-p.) If the 10GBaseT transmitters are burdened with the requiremen to drive this larger amplitude, the linearity performance will be compromised. A POTENTIAL SOLUTION All of the cables specified in 10GBaseT (55.7) have dramatically less attenuation than the old category 3 cable. In fact the normal transmit amplitude for 10GBaseT (1.25V zero to peak) is sufficient to meet the link pulse template when passed through any of the cables specified in 55.7

SuggestedRemedy
 PROPOSED MODIFICATION: Replace 28.2.1.1.1 "FLP bursts shall be composed of link pulses meeting the requirements of Fig. 14-12." with "For devices auto-negotiating to 10/100/1,000 Mb/s, all link test pulses in the FLP Burst Sequence shall meet the template requirements of Figure 14-12 when measured across each of the test loads defined in Figure 14-11; both with the load connected directly to the TD circuit and with the the load connected through the twisted pair model as defined in Figures 14-7 and 14-8. For devices auto-negotiating to 10,000 Mb/s, all link test pulses in the FLP Burst sequence shall meet the template requirements of Figure 14-12 when measured across each of the test loads defined in Figure 14-11; both with the load connected directly to the TD circuit and with the load connected through each of the cable types and distances defined in 55.7.
 Proposed Response Response Status O

Cl 28 SC 28 P 6 L 1 Comment # 307
 Dawe, Piers Agilent
 Comment Type E Comment Status D
 This title is getting unnecessarily long. 10 Mb/s, 100 Mb/s, 1000 Mb/s, and 10Gb/s is basically everything we care about.
 SuggestedRemedy
 Shorten title to 'Physical layer link signaling for auto-negotiation on twisted pair'. If necessary add text within 28 to mention any twisted pair types that the clause doesn't apply to. Change title of 28.5 and 28.5.4, and text of 28.5.1 and 28.5.2.2, in step.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 28 SC 28.2.1.1.1 P L Comment # 552
 Bradshaw, Peter Intersil
 Comment Type ER Comment Status X
 Title of this subclause does not mention 'Extended FLP Bursts', but the proposed addition relates to this type of burst.
 SuggestedRemedy
 Change "28.2.1.1.1 FLP burst encoding" to "28.2.1.1.1 FLP and Extended FLP burst encoding"
 Proposed Response Response Status O

Cl 28 SC 28.2.1.1.1 P6 L16 Comment # 544
 Matt Squire Hatteras Networks
 Comment Type E Comment Status X
 When introducing the 49/48 coding, should indicate that odds are still clock symbols and evens data.
 SuggestedRemedy
 Change last sentence to say "49 (odd numbered) clock pulses and 48 (even numbered) data pulses."
 Proposed Response Response Status O

Cl 28 SC 28.2.1.1.1 P6 L17 Comment # 400
 Barrass, Hugh Cisco Systems
 Comment Type TR Comment Status X
 It is not clear that the use of the extended burst must be limited to situations where extended next page ability has been established.
 The use of an extended burst with an incapable link partner might cause unpleasant behavior...
 SuggestedRemedy
 At the end of the current paragraph add the following sentence:
 A transmitter shall not use extended FLP bursts until after extended next page ability for the AN LP has been established (see 28.2.1.2.3).
 Proposed Response Response Status O

Cl 28 SC 28.2.1.1.1 P6 L22 Comment # 4
 David V James JGG
 Comment Type E Comment Status D
 DVJ-4
 Misleading capitalization
 SuggestedRemedy
 Clock Pulses
 ==>
 Clock pulses
 Proposed Response Response Status W

Cl 28 SC 28.2.1.1.1 P6 L23 Comment # 3
 David V James JGG
 Comment Type E Comment Status D
 DVJ-3
 Wrong figure font.
 SuggestedRemedy
 Use 8-point Arial, here and throughout.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 28 SC 28.2.1.1.1 P6 L28 Comment # 5
 David V James JGG
 Comment Type E Comment Status D
 DVJ-5
 Misleading capitalization
 SuggestedRemedy
 First Bit on Wire
 ==>
 First bit on wire
 Proposed Response Response Status W

IEEE P802.3an Comments

Cl 28 SC 28.2.1.1.1 P6 L 32 Comment # 6
 David V James JGG
 Comment Type E Comment Status D
 DVJ-6
 Misleading capitalization
 SuggestedRemedy
 Pulse Position
 ==>
 Pulse position
 OR
 pulse position
 Proposed Response Response Status W

Cl 28 SC 28.2.1.1.2 P7 L 20 Comment # 15
 David V James JGG
 Comment Type E Comment Status D
 DVJ-15
 Misleading capitalization
 SuggestedRemedy
 FLP Burst
 ==>
 FLP burst
 (multiple instances)
 Proposed Response Response Status W

Cl 28 SC 28.2.1.1.2 P6 L 48 Comment # 308
 Dawe, Piers Agilent
 Comment Type E Comment Status D
 Gratuitous Capital Syndrome. It seems 'Extended Next Page' is a term coined by P802.3an, so it doesn't inherit its capitals from somewhere else. Therefore, it doesn't need capitals.
 SuggestedRemedy
 Change to 'extended next pages'. Make similar editorial changes as appropriate in the document.
 Proposed Response Response Status W

Cl 28 SC 28.2.1.1.2 P7 L 29 Comment # 7
 David V James JGG
 Comment Type E Comment Status D
 DVJ-7
 Misleading capitalization
 SuggestedRemedy
 Clock/Data Pulse Width
 ==>
 Clock/cata pulse width
 Proposed Response Response Status O

Cl 28 SC 28.2.1.1.2 P7 L 17 Comment # 13
 David V James JGG
 Comment Type E Comment Status D
 DVJ-13
 Wrong figure font.
 SuggestedRemedy
 Use 8-point Arial, here and throughout.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 28 SC 28.2.1.1.2 P7 L 31 Comment # 8
 David V James JGG
 Comment Type E Comment Status D
 DVJ-8
 Misleading capitalization
 SuggestedRemedy
 Clock Pulse to Clock Pulse==>
 Clock pulse to clock pulse
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 28 SC 28.2.1.1.2 P7 L 32 Comment # 9
 David V James JGG
 Comment Type E Comment Status D
 DVJ-9
 Misleading capitalization
 SuggestedRemedy
 Clock Pulse to Data Pulse
 ==>
 Clock pulse to data pulse
 Proposed Response Response Status O

Cl 28 SC 28.2.1.1.2 P7 L 36 Comment # 11
 David V James JGG
 Comment Type E Comment Status D
 DVJ-11
 Misleading capitalization
 SuggestedRemedy
 Burst Width
 ==>
 Burst width
 Proposed Response Response Status O

Cl 28 SC 28.2.1.1.2 P7 L 33 Comment # 551
 Bradshaw, Peter Intersil
 Comment Type E Comment Status X
 Table 28-1, the 'Min' value for T4 is missing a space
 SuggestedRemedy
 Replace addition 'for 16-bit' with ' for 16-bit'
 Proposed Response Response Status O

Cl 28 SC 28.2.1.1.2 P7 L 6 Comment # 12
 David V James JGG
 Comment Type E Comment Status D
 DVJ-12
 Wrong figure font.
 SuggestedRemedy
 Use 8-point Arial, here and throughout.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 28 SC 28.2.1.1.2 P7 L 34 Comment # 10
 David V James JGG
 Comment Type E Comment Status D
 DVJ-10
 Misleading capitalization
 SuggestedRemedy
 Pulses in a Burst
 ==>
 Pulses in a burst
 Proposed Response Response Status O

Cl 28 SC 28.2.1.1.2 P7 L 9 Comment # 14
 David V James JGG
 Comment Type E Comment Status D
 DVJ-14
 Misleading capitalization
 SuggestedRemedy
 Clock Pulse
 ==>
 clock pulse
 (multiple instances)
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 28 SC 28.2.1.2 P8 L3 Comment # 566
 Booth, Brad Intel
 Comment Type E Comment Status X
 Figure 28-7 should have a change bar as it is not the same as in 802.3REVam.
 SuggestedRemedy
 Add a change bar to the figure.
 Proposed Response Response Status O

Cl 28 SC 28.2.1.2.1 P8 L6 Comment # 16
 David V James JGG
 Comment Type E Comment Status D
 DVJ-16
 Wrong figure font.
 SuggestedRemedy
 Use 8-point Arial, here and throughout.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 28 SC 28.2.1.2.3 P8 L37 Comment # 347
 Dawe, Piers Agilent
 Comment Type E Comment Status D
 orthogonal to? I think I understand the metaphor, but why not just say it rather than use a metaphor.
 SuggestedRemedy
 Change to 'not dependent on'
 Proposed Response Response Status O

Cl 28 SC 28.2.1.2.3 P8 L39 Comment # 545
 Matt Squire Hatteras Networks
 Comment Type E Comment Status X
 Include a forward reference to where XNP is explained in more detail.
 SuggestedRemedy
 See sentence at the end of remote fault section as an example.
 Proposed Response Response Status O

Cl 28 SC 28.2.1.2.3 P8 L8 Comment # 598
 Law, David 3Com
 Comment Type T Comment Status X
 The description of the operation of the XNP bit during a Next Page exchange in the second paragraph of this subclause should be moved to subclause 28.2.3.4 where the description of the operation of the NP bit is already provided.
 SuggestedRemedy
 Delete the text 'This ability shall be enabled at the end of base page exchange when both sides have indicated that they support the ability. Otherwise the ability shall be disabled.'

Change the third paragraph of subclause 28.2.3.4 to read:
 Next Page operation is controlled by the same two mandatory control bits, Next Page and Acknowledge, used in the Base Link Code Word. Setting the NP bit in the Base Link Code Word to logic one indicates that the device is Next Page Able. Setting the XNP bit in the Base Link Code Word to logic one indicates that the device is Extended Next Page Able. If both a device and its Link Partner are Next Page Able, then Next Page exchange may occur. If both a device and its Link Partner are Extended Next Page Able, then any Next Page exchange that occurs shall use the Extended Next page encoding. If one or both devices are not Next Page Able, then Next Page exchange will not occur and, after the base Link Code Words have been exchanged, the FLP LINK GOOD CHECK state will be entered. The Toggle bit is used to ensure proper synchronization between the Local Device and the Link Partner.

Proposed Response Response Status O

Cl 28 SC 28.2.2.1 P10 L20 Comment # 17
 David V James JGG
 Comment Type E Comment Status D
 DVJ-17
 Wrong figure font.
 SuggestedRemedy
 Use 8-point Arial, here and throughout.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

IEEE P802.3an Comments

Cl 28 SC 28.2.2.1 P 10 L 45 Comment # 18
 David V James JGG

Comment Type E Comment Status D

DVJ-18
 Wrong figure font.

SuggestedRemedy

Use 8-point Arial, here and throughout.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Cl 28 SC 28.2.2.1 P 10 L 51 Comment # 476
 Thaler, Pat Agilent Technologies

Comment Type E Comment Status X

The nlp_test_min_timer range shown in Figure 28-10 applies to non-extended burst operation, the tolerance is tighter for extended burst mode.

SuggestedRemedy

Add a clarification such as:

The nlp_test_min_timer range for devices that do not support extended Next Pages is shown in Figure 28-10. The range of nlp_test_timer for devices that support extended Next pages is specified in 28.3.2.

Proposed Response Response Status O

Cl 28 SC 28.2.2.1 P 11 L 3 Comment # 19
 David V James JGG

Comment Type E Comment Status D

DVJ-19
 Wrong figure font.

SuggestedRemedy

Use 8-point Arial, here and throughout.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Cl 28 SC 28.2.2.1 P 11 L 4 Comment # 20
 David V James JGG

Comment Type E Comment Status D

DVJ-20
 Misleading capitalization

SuggestedRemedy

FLP Burst
 ==>
 FLP burst
 (here and throughout)

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 28 SC 28.2.3.4 P 12 L 45 Comment # 597

Law, David 3Com

Comment Type T Comment Status X

It isn't clear that the text in this subclause applies to Extended Next Page but it must as this is where there Ack, Ack2 and NP functionality is defined. Based on this the following changes are suggested to this subclause.

Note 1. - The term "Extended Next Page" is unclear. Is this a function, ability (Page 8, line 38) or an encoding (Figure 28-13).

Note 2. - These changes are based on the assumption that XNP is only supported by devices with a selector field of IEEE 802.3 (01Hex). If the addition of XNP is to be global, that is A7 changed to XNP and the ability field reduced to 7 bits, then the text in the third paragraph of this subclause will need refining in relation to what message pages are exchanged when the selector fields do not match (See Page 13, line 16).

SuggestedRemedy

Page 12, Line 50:
Change the text 'Two types of Next Page encoding are defined: Message Pages and Unformatted Pages.' to read 'Three types of Next Page encoding are defined: Message Pages, Unformatted Pages, and Extended Next Page.'

Page 13, Line 5:
Change the text 'Next Page operation is controlled by the same two mandatory control bits, Next Page and Acknowledge, used in the Base Link Code Word' to read 'Next Page operation is controlled by the same two mandatory control bits, Next Page and Acknowledge, used in the Base Link Code Word.'

Page 13, line 13:
Change the text to read:
Next Page exchange occurs after the base Link Code Words have been exchanged. Next Page exchange consists of using the normal Auto-Negotiation arbitration process to send Next Page messages. Three message encoding are defined: Message Pages, Unformatted Pages and Extended Next Pages. Unformatted Pages can be combined to send extended messages. If the Selector Field values do not match, then each series of Unformatted Pages shall be preceded by a Message Page containing a message code that defines how the following Unformatted Pages will be interpreted. If the Selector Field values match, then the convention governing the use of Message Pages shall be as defined by the Selector Field value definition. Any number of Next Pages may be sent in any order; however, it is recommended that the total number of Next Pages sent be kept small to minimize the link start-up time.

Proposed Response Response Status O

Cl 28 SC 28.2.3.4 P 13 L 26 Comment # 602

Law, David 3Com

Comment Type TR Comment Status X

From Annex 28C (page 51, line 17) it appears that devices that negotiate Extended Next Page Support only transmit Extended Next Pages hence will not transmit Message or Unformatted pages.

Based on this the statement that 'Once a device has completed transmission of its Next Page information, it shall transmit Message Pages with Null message codes and the NP bit set to logic zero while its Link Partner continues to transmit valid Next Pages.' seems to be in conflict with this.

SuggestedRemedy

Suggest the paragraph 5 of subclause 28.2.3.4 be changed to read:

Next Page transmission ends when both ends of a link segment set their Next Page bits to logic zero, indicating that neither has anything additional to transmit. It is possible for one device to have more pages to transmit than the other device. Once a device has completed transmission of its Next Page information, it shall transmit Message Pages, or Extended Next Pages, with Null message codes and the NP bit set to logic zero while its Link Partner continues to transmit valid Next Pages. An Auto-Negotiation able device shall recognize reception of Message Pages, or Extended Next Pages, with Null message codes as the end of its Link Partner's Next Page information.

Proposed Response Response Status O

Cl 28 SC 28.2.3.4.1 P 13 L 45 Comment # 21

David V James JGG

Comment Type E Comment Status D

DVJ-21
Wrong figure font.

SuggestedRemedy

Use 8-point Arial, here and throughout.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

IEEE P802.3an Comments

Cl 28 SC 28.2.3.4.1 P14 L 15 Comment # 24
 David V James JGG
 Comment Type T Comment Status D
 DVJ-24
 Consistency in names is important.
 SuggestedRemedy
 Pick and use only one of:
 message code field
 Message code field
 Message Code Field
 ---Also, develop a nomenclature strategy, and enforce this for all uses of similar field names.
 Proposed Response Response Status O

Cl 28 SC 28.2.3.4.1 P14 L 19 Comment # 23
 David V James JGG
 Comment Type E Comment Status D
 DVJ-23
 Wrong figure font.
 SuggestedRemedy
 Use 8-point Arial, here and throughout.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 28 SC 28.2.3.4.1 P14 L 5 Comment # 22
 David V James JGG
 Comment Type E Comment Status D
 DVJ-22
 Wrong figure font.
 SuggestedRemedy
 Use 8-point Arial, here and throughout.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 28 SC 28.2.3.4.12 P15 L 53 Comment # 603
 Law, David 3Com
 Comment Type T Comment Status X
 The 'Use of Next Pages' text needs updated to include Extended Next Pages. This includes when to send then, the fact they can carry the Null message and also that a Message code can be now carried in either a Message Page or an Extended Message Page.
 SuggestedRemedy
 Suggest the text be changed to read:
 a) Both devices must indicate Next Page ability for either to commence exchange of Next Pages.
 b) Both devices must indicate Extended Next Page ability for either to commence exchange of Extended Next Pages.
 c) If both devices are Next Page able, then both devices shall send at least one Next Page.
 d) If both devices are Extended Next Page able, then both devices shall only transmit Extended Next Pages.
 e) Next Page exchange shall continue until neither device on a link has more pages to transmit as indicated by the NP bit. A Message Page, or Extended Next Page, with a Null Message Code Field value shall be sent if the device has no other information to transmit.
 f) A Message Page provides a Message Code that can carry either a specific message or information that defines how following Unformatted Page(s) should be interpreted.
 g) If a Message Code in a Message Page references Unformatted Pages, the Unformatted Pages shall immediately follow the referencing Message Code in the order specified by the Message Code.
 h) Unformatted Page users are responsible for controlling the format and sequencing for their Unformatted Pages.
 i) A Extended Next Page provides a Message Code and a Unformatted code. The Message Code can carry either a specific message or information that defines how following Unformatted code should be interpreted.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 28 SC 28.2.3.4.2 P14 L12 Comment # 14000
 Thaler, Pat Agilent Technologies

Comment Type TR Comment Status D D1.4

There also should be an Extended Unformatted Next page encoding for extended next pages with no message code field. The text for how messages for 16 bit message code field values are transmitted when extended next pages are active requires this format for messages that would be followed by more than two unformatted 16-bit pages.

SuggestedRemedy

Add extended unformatted next page format (all bits other than the flag bits form an unformatted field.

Proposed Response Response Status C

Has been resubmitted from D.14 by Editor

Cl 28 SC 28.2.3.4.2 P14 L14 Comment # 474
 Thaler, Pat Agilent Technologies

Comment Type TR Comment Status X

An extended next page encoding for unformatted extended next page is needed, just as there are two encodings for 16-bit next pages. Some existing message codes require more than 32 bits of unformatted information so those will need to be followed by unformatted extended next pages.

SuggestedRemedy

The MP bit determines which encoding is in use for the page. In the unformatted extended next page, bits D0 through D10 are part of the unformatted code field. The remainder of the encoding is the same as the message extended next page.

You can leverage from the .3ap draft or from the text of the unextended next pages for this.

Proposed Response Response Status O

Cl 28 SC 28.2.3.4.2 P14 L17 Comment # 567
 Booth, Brad Intel

Comment Type E Comment Status X

Figure 28-13 is new to Clause 28.

SuggestedRemedy

Insert change bar for the figure.

Proposed Response Response Status O

Cl 28 SC 28.2.4.1.1 P16 L38 Comment # 553
 Bradshaw, Peter Intersil

Comment Type E Comment Status X

RevAM subclause 28.2.4.1.1 covers extensively the use of MII registers in Clause 22, specifically in subclause 22.2.4.1, and especially related to Auto-negotiation. Yet Clause 55 contains no mention of this subclause, except for one reference to a power-down situation, and a PICS reference, but there are no edits to 22.2.4.1, or to Table 22-11, which does not include 10GBASE-T among it's possibilities. How will a 1000Base-T PMA/PMD recognize a 10GBASE-T device? In particular, some of the slower PHYs are allowed to default to a half-duplex mode in tghе "parallel detect" mode. However, 10GBASE-T does not seem to allow a half-duplex mode.

SuggestedRemedy

I am not sure there is a problem, but I would like to be sure it has been considered!

Proposed Response Response Status O

Cl 28 SC 28.2.4.1.4 P L Comment # 679
 Law, David 3Com

Comment Type T Comment Status X

The Technology ability field is now only 7 bits with an additional XNP bit. Assuming we are taking the approach of replacing ability bit A7 rather than considering XNP as just another ability.

SuggestedRemedy

Based on bit A7 being replaced by XNP 'Technology ability field' needs to be reduced to 7 bits, and a new XNP bit added. Note that this is backwardly compatibly with all existing conformant implementations as bit A7 has always been defined as zero in the past hence legacy devices will always correctly report as being not Extended Next Page able.

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 28 SC 28.3 P17 L 42 Comment # 675
 Law, David 3Com
 Comment Type T Comment Status X
 There is a statement that 'their appropriate initialization conditions when mapped to the MII interface are covered in 28.2.4 and 22.2.4, and Clause 45 MDIO management interface.' however I cannot find any default values in the Clause 45 registers. Take the Restart auto-negotiation bit (7.0.9), a default is defined for it in 22.2.4.1.7, the same seems to be true of the Auto-Negotiation Enable bit (7.0.12).
 SuggestedRemedy
 Either [1] Add default values to the Clause 45 registers and make the cross-reference more direct, say to 45.2.7, or [2] delete the text 'and Clause 45 MDIO management interface.'
 Proposed Response Response Status O

Cl 28 SC 28.3 P18 L 15 Comment # 30
 David V James JGG
 Comment Type E Comment Status D
 DVJ-30
 Misleading capitalization
 SuggestedRemedy
 Technology Dependent Function
 ==>
 Technology dependent function
 Proposed Response Response Status O

Cl 28 SC 28.3 P18 L 2 Comment # 26
 David V James JGG
 Comment Type E Comment Status D
 DVJ-26
 Misleading capitalization
 SuggestedRemedy
 Management Interface
 ==>
 Management interface
 Proposed Response Response Status O

Cl 28 SC 28.3 P18 L 21 Comment # 31
 David V James JGG
 Comment Type E Comment Status D
 DVJ-31
 Misleading capitalization
 SuggestedRemedy
 Technology Dependent PMAs
 ==>
 Technology dependent PMAs
 Proposed Response Response Status O

Cl 28 SC 28.3 P18 L 3 Comment # 25
 David V James JGG
 Comment Type E Comment Status D
 DVJ-25
 Wrong figure font.
 SuggestedRemedy
 Use 8-point Arial, here and throughout.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 28 SC 28.3 P18 L 8 Comment # 379
 George Claseman Micrel
 Comment Type E Comment Status D
 The link code word can be 16 or 48 bits in both the RX and TX paths based on the new XNP.
 SuggestedRemedy
 Expand the range to 48 bits or indicate the 2 options.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 28 SC 28.3 P18 L 8 Comment # 27
 David V James JGG
 Comment Type E Comment Status D
 DVJ-27
 Misleading capitalization
 SuggestedRemedy
 Auto-Negotiation Receive Function
 ==>
 Auto-negotiation receive function
 Proposed Response Response Status O

Cl 28 SC 28.3 P18 L 8 Comment # 28
 David V James JGG
 Comment Type E Comment Status D
 DVJ-28
 Misleading capitalization
 SuggestedRemedy
 Auto-Negotiation Arbitration Function
 ==>
 Auto-negotiation arbitration function
 Proposed Response Response Status O

Cl 28 SC 28.3 P18 L 8 Comment # 29
 David V James JGG
 Comment Type E Comment Status D
 DVJ-29
 Misleading capitalization
 SuggestedRemedy
 Auto-Negotiation Transmit Function
 ==>
 Auto-negotiation transmit function
 Proposed Response Response Status O

Cl 28 SC 28.3.1 P19 L 29 Comment # 309
 Dawe, Piers Agilent
 Comment Type E Comment Status D
 Unwanted new-page.
 SuggestedRemedy
 Remove, use 'keep paragraph together' as appropriate
 Proposed Response Response Status O

Cl 28 SC 28.3.1 P23 L 23 Comment # 360
 Kim, Yong Broadcom
 Comment Type E Comment Status D
 Is page_size a condition? Or is it more of a status?
 From Draft: "page_size
 Condition indicating the size of Next Page that the device is prepared to transmit and receive.
 SuggestedRemedy
 Select a better (and consistent datatype) and use it.
 Proposed Response Response Status O

Cl 28 SC 28.3.1 P23 L 27 Comment # 546
 Matt Squire Hatteras Networks
 Comment Type E Comment Status X
 To converse the previous case, should say XNP is both supported and enabled, rather than just enabled.
 SuggestedRemedy
 See comment.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 28 SC 28.3.1 P 23 L 36 Comment # 380
 George Claseman Micrel
 Comment Type E Comment Status D
 RX link code word can be either 16 or 48 bits.
 SuggestedRemedy
 Change range to 48 bits or indicate that this is either 16 bit or 48 bit (fixed values).
 Proposed Response Response Status O

Cl 28 SC 28.3.1 P 24 L 38 Comment # 381
 George Claseman Micrel
 Comment Type E Comment Status D
 TX link code word can be either 16 or 48 bits.
 SuggestedRemedy
 Change range to 48 bits or indicate that this is either 16 bit or 48 bit (fixed values).
 Proposed Response Response Status O

Cl 28 SC 28.3.1 P 25 L 36 Comment # 358
 Kim, Yong Broadcom
 Comment Type TR Comment Status D autoneg
 Please clarify "...after a successful master/slave resolution..". While you are at it, correct the spelling as well.
 From the paragraph: "CHECK state for devices operating at 10/100/1,000 Mb/s. The Link_fail_inhibit_timer shall expire 2000-2250 ms after entering the FLP LINK GOOD CHECK state after a successful master/slave resolution for devices operating at 10,000 Mb/s"
 SuggestedRemedy
 Please refer to the state transition or timer event, instead of using the phrase above.
 Proposed Response Response Status O

Cl 28 SC 28.3.1 P 26 L 2 Comment # 359
 Kim, Yong Broadcom
 Comment Type TR Comment Status D autoneg
 The specification makes little sense.. or I am missing something. If there is no interoperability issue, it ought to be lower bound of old and upper bound of new, i.e. 5 mS ~ 7.25 mS. If there is interoperability issue, then this seems unduely complex. Are you saying that if XNP is enabled, I need to go change my timer, and if XNP is disabled or enabled but not used, I need to change timer? Or is it if XNP capability is present (regardless of AN state), I need to use the new timer...

From the Draft: "Timer for the minimum time between two consecutive FLP Bursts. The nlp_test_min_timer shall expire 5-7 ms after being started or restarted. for devices that do no support extended Next Pages, and shall expire 6.75-7.25 ms after being started or restarted for devices that do support extended Next Pages."

SuggestedRemedy
 Multiple issues on this comment:
 1. Request for one range, not two, if no interoperability issue
 2. Clarify the text (editorial), so XNP AN state refers to the correct timer, if more than one exist.
 3. If interopeability issue(s) effected this clause change, then let me know so that I could suggest a remedy, or you might find a better way without me :-).

Proposed Response Response Status O

Cl 28 SC 28.3.1 P 26 L 4 Comment # 547
 Matt Squire Hatteras Networks
 Comment Type T Comment Status X
 The answer to me isn't clear, so I'll ask this as a question rather than a comment, but shouldn't the time be based on whether XNP is enabled, rather than supported (there are provisions for not enabling it, where you would want to run as if its not supported).
 SuggestedRemedy
 If the timer should be based on XNP "enabled" rather than "supported", make text read that way. Ditto the table below (L36, L39).
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 28 SC 28.3.2 P 25 L 35 Comment # 310
 Dawe, Piers Agilent
 Comment Type E Comment Status D
 Editorials: 'Mb/s.The' 'sucsessful' '10,000 Mb/s'
 SuggestedRemedy
 Change to 'Mb/s. The' 'successful' '10 Gb/s.' (note the full stop). In table 28-9 and in 28.5.4.8, change '10,000 Mb/s' to '10 Gb/s'. Correct 'sucsessful' in 28.5.4.8.
 Proposed Response Response Status O

Cl 28 SC 28.3.2 P 25 L 36 Comment # 32
 David V James JGG
 Comment Type E Comment Status D
 DVJ-32
 Spelling incorrect, space missing after the period.
 SuggestedRemedy
 10/100/1,000 Mb/s.The link...
 ==>
 10/100/1,000 Mb/s. The link...
 Proposed Response Response Status O

Cl 28 SC 28.3.2 P 25 L 36 Comment # 382
 George Claseman Micrel
 Comment Type E Comment Status D
 "sucsessful"
 SuggestedRemedy
 "successful"
 Proposed Response Response Status O

Cl 28 SC 28.3.2 P 25 L 38 Comment # 33
 David V James JGG
 Comment Type E Comment Status D
 DVJ-33
 Spelling incorrect, period missing.
 SuggestedRemedy
 operating at 10,000 Mb/s
 ==>
 operating at 10,000 Mb/s.
 Proposed Response Response Status O

Cl 28 SC 28.3.2 P 25 L 54 Comment # 568
 Booth, Brad Intel
 Comment Type E Comment Status X
 The variable name is separated from the value.
 SuggestedRemedy
 Keep variable name with the value.
 Proposed Response Response Status O

Cl 28 SC 28.3.2 P 26 L 16 Comment # 34
 David V James JGG
 Comment Type E Comment Status D
 DVJ-34
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Min, Typ, Max, Units
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 28 SC 28.3.3 P 27 L 23 Comment # 550
 Matt Squire Hatteras Networks

Comment Type T Comment Status X

I'll admit I haven't spent enough time parsing the state diagrams again, but in the first few minutes of reading it seems we've adjusted the rx_bit_cnt and tx_bit_cnt from 16 to 48 in some cases via page_size. However, these variables are used as indices into rx_link_code_word and tx_link_code_word, which are still fixed at 16-bits. Should the code_word variables be page_size, or am I just worrying that the indices have values that are out-of-range for the defined arrays?

SuggestedRemedy

Adjust the size of rx_link_code_word and tx_link_code_word to page_size.

Proposed Response Response Status O

Cl 28 SC 28.3.4 P 28 L 7 Comment # 35
 David V James JGG

Comment Type E Comment Status D

DVJ-35
 Wrong figure font.

SuggestedRemedy

Use 8-point Arial, here and throughout.

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 28 SC 28.3.4 P 29 L 5 Comment # 36
 David V James JGG

Comment Type E Comment Status D

DVJ-36
 Wrong figure font.

SuggestedRemedy

Use 8-point Arial, here and throughout.

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 28 SC 28.3.4 P 30 L 3 Comment # 37
 David V James JGG

Comment Type E Comment Status D

DVJ-37
 Wrong figure font.

SuggestedRemedy

Use 8-point Arial, here and throughout.

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 28 SC 28.3.4 P 31 L 8 Comment # 38
 David V James JGG

Comment Type E Comment Status D

DVJ-38
 Wrong figure font.

SuggestedRemedy

Use 8-point Arial, here and throughout.

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 28 SC 28.5 P 31 L 42 Comment # 569
 Booth, Brad Intel

Comment Type E Comment Status X

PICS section should start at top of page.

SuggestedRemedy

Start PICS at top of the page.

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 28 SC 28.5 P31 L 46 Comment # 39
 David V James JGG
 Comment Type E Comment Status D
 DVJ-39
 The title of this subclause is too long, which forces error-prone manual manipulation during the otherwise automatic TOC generation.
 SuggestedRemedy
 1) Change the title to:
 55.12 Protocol implementation conformance statement (PICS) proforma for Clause 28
 2) Change the following sentence to include the full clause name.
 Proposed Response Response Status O

Cl 28 SC 28.5.3 P33 L 27 Comment # 681
 Law, David 3Com
 Comment Type T Comment Status X
 This PICS item states that optimize FLP to FLP burst timing is optional however subclause 28.2.1.1.2 states that it is mandatory in devices that support extended Next Page.
 SuggestedRemedy
 Change the Status field to read:
 ENP:M
 IENP:0
 Proposed Response Response Status O

Cl 28 SC 28.5.3 P33 L 14 Comment # 40
 David V James JGG
 Comment Type E Comment Status D
 DVJ-40
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Value/comment
 Proposed Response Response Status O

Cl 28 SC 28.5.3 P33 L 6 Comment # 41
 David V James JGG
 Comment Type E Comment Status D
 DVJ-41
 Misleading capitalization
 SuggestedRemedy
 Value/comment
 ==>
 Value/Comment
 Proposed Response Response Status O

Cl 28 SC 28.5.3 P33 L 24 Comment # 311
 Dawe, Piers Agilent
 Comment Type T Comment Status D
 ENP status 'O' contradicts 28D.6 which says 'Extended Next Page support is mandatory for 10GBASE-T.' OPT status 'O' contradicts 28.2.1.1.2 which says 'Devices supporting Extended Next Pages shall use optimized FLP Burst to FLP Burst timing.'
 SuggestedRemedy
 Reconcile (both issues).
 Proposed Response Response Status O

Cl 28 SC 28.5.4 P34 L 1 Comment # 611
 Grow, Robert Intel
 Comment Type ER Comment Status X
 There is significant unnecessary information in the draft.
 SuggestedRemedy
 Delete 28.5.4.1, 28.5.4.2, 28.5.4.4 through 28.5.4.7, 28.5.4.9 through 10, and 28.6.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 28 SC 28.5.4.1 P34 L5 Comment # 42
 David V James JGG
 Comment Type E Comment Status D
 DVJ-42
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Value/comment
 Proposed Response Response Status O

Cl 28 SC 28.5.4.10 P45 L14 Comment # 53
 David V James JGG
 Comment Type E Comment Status D
 DVJ-53
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Value/comment
 Proposed Response Response Status O

Cl 28 SC 28.5.4.2 P34 L25 Comment # 43
 David V James JGG
 Comment Type E Comment Status D
 DVJ-43
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Value/comment
 Proposed Response Response Status O

Cl 28 SC 28.5.4.2 P34 L30 Comment # 459
 McClellan, Brett Solarflare
 Comment Type T Comment Status X
 According to 28.5.4.6 items 20 and 21, Parallel Detection Faults are mandatory only for an MII interface. Furthermore, 10GBASE-T does not require (or even allow) the reporting of a parallel detection fault. See Clause 45.2 and Table 28-8 (both indicate no means of reporting parallel detection faults).
 The only instance of link_status_[NLP] is in parallel detection part of the arbitration state diagram (LINK STATUS CHECK of Figure 28-17).
 Since parallel detection is only mandatory if an MII interface is present, then the NLP Receive Link Integrity Test should also be mandatory only when an MII interface is present.
 (Removing the parallel detection functionality from the arbitration state diagram removes all references to link_status_[NLP]).
 SuggestedRemedy
 Modify 28.5.4.2 Item 4, NLP Receive Link Integrity Test, from a Status of M to a Status of MII:M.
 Proposed Response Response Status O

Cl 28 SC 28.5.4.3 P L Comment # 557
 Bradshaw, Peter Intersil
 Comment Type ER Comment Status X
 My understanding of the PICS requirements are that the items may NOT be renumbered (hence MM43a and MM43b in 45.5.5.3).
 SuggestedRemedy
 Either we get together and overcome this rrule, or we should follow it. Actually, I personally prefer the former, since I think it makes more sense; the concept of the PICS (as expressed in the footnotes to all their initial headings) is that the user will copy the table(s) into their statement, and add the conformance items, so a renumber merely reflects the original source level.
 Proposed Response Response Status O

Cl 28 SC 28.5.4.3 P35 L30 Comment # 312
 Dawe, Piers Agilent
 Comment Type T Comment Status D
 Item 8 contradicts item 9.
 SuggestedRemedy
 Reconcile. Maybe status of 8 should be !OPT:M ?
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 28 SC 28.5.4.3 P 35 L 52 Comment # 258
 Dove, Daniel HP ProCurve Networki

Comment Type ER Comment Status D

Maybe I missed something but I note changes to the table show insertion of item 9 and changes to numbering underlined for 10,11,12...15 but 16 is shown as it was originally there and the original item 15 appears to be deleted but it not shown with strike-through.

Item 15:
 15
 Acknowledge bit set, Next Page to be sent
 28.2.1.2.4
 NP:M

Set to logic one in the transmitted Link Code Word after the reception of at least three consecutive and consistent FLP Bursts and the current receive Link Code Word is saved

SuggestedRemedy

Resolve my question by either pointing to my failure to properly interpret the document, or insert item 15 back in the table and renumber.

Proposed Response Response Status O

Cl 28 SC 28.5.4.3 P 35 L 7 Comment # 44
 David V James JGG

Comment Type E Comment Status D

DVJ-44
 Small values are supposed to be centered.

SuggestedRemedy

Center the following columns:
 Item, Subclause, Status, Value/comment

Proposed Response Response Status O

Cl 28 SC 28.5.4.3 P 36 L 29 Comment # 46
 David V James JGG

Comment Type E Comment Status D

DVJ-46
 Small values are supposed to be centered.

SuggestedRemedy

Center the following columns:
 Item, Subclause, Status, Value/comment

Proposed Response Response Status O

Cl 28 SC 28.5.4.3 P 36 L 7 Comment # 45
 David V James JGG

Comment Type E Comment Status D

DVJ-45
 Small values are supposed to be centered.

SuggestedRemedy

Center the following columns:
 Item, Subclause, Status, Value/comment

Proposed Response Response Status O

Cl 28 SC 28.5.4.3 P 37 L 5 Comment # 47
 David V James JGG

Comment Type E Comment Status D

DVJ-47
 Small values are supposed to be centered.

SuggestedRemedy

Center the following columns:
 Item, Subclause, Status, Value/comment

Proposed Response Response Status O

Cl 28 SC 28.5.4.5 P 40 L 29 Comment # 48
 David V James JGG

Comment Type E Comment Status D

DVJ-48
 Small values are supposed to be centered.

SuggestedRemedy

Center the following columns:
 Item, Subclause, Status, Value/comment

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 28 SC 28.5.4.6 P 42 L 27 Comment # 49
 David V James JGG
 Comment Type E Comment Status D
 DVJ-49
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Value/comment
 Proposed Response Response Status O

Cl 28 SC 28.5.4.8 P 44 L 9 Comment # 51
 David V James JGG
 Comment Type E Comment Status D
 DVJ-51
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Value/comment
 Proposed Response Response Status O

Cl 28 SC 28.5.4.7 P 43 L 43 Comment # 50
 David V James JGG
 Comment Type E Comment Status D
 DVJ-50
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Value/comment
 Proposed Response Response Status O

Cl 28 SC 28.5.4.9 P 45 L 5 Comment # 52
 David V James JGG
 Comment Type E Comment Status D
 DVJ-52
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Value/comment
 Proposed Response Response Status O

Cl 28 SC 28.5.4.8 P 44 L 22 Comment # 313
 Dawe, Piers Agilent
 Comment Type T Comment Status D
 Item 11a contradicts item 11b.
 SuggestedRemedy
 Reconcile. Is one predicated on 10GBASE-T? Are these two a set of options?
 Proposed Response Response Status O

Cl 28 SC 28.5.5.2 P 32 L 29 Comment # 610
 Grow, Robert Intel
 Comment Type TR Comment Status X
 This change is wrong.
 SuggestedRemedy
 Delete 25.2 from the draft.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 28 SC Figure 28-13 P 14 L 24 Comment # 600

Law, David 3Com

Comment Type TR Comment Status X

The Extended Next Page encoding includes a MP bit (D13) which is then defined in subclause 28.2.3.4.5 to differentiate between a Message Page and an Unformatted page of which this is neither since it is a Extended Next Page.

SuggestedRemedy

Remove the MP bit from the Extended Next Page encoding.

Proposed Response Response Status O

Cl 28 SC Figure 28-13 P 14 L 24 Comment # 601

Law, David 3Com

Comment Type TR Comment Status X

The Extended Next Page encoding includes bits D16 to D47 which are described as 'Unformatted code field' however subclause 28.2.3.4.11 describes this as an eleven bit wide field.

SuggestedRemedy

Define bits D16 to D47 as the 'Extended unformatted code field', or something similar, and add a definition for this as a new subclause 28.2.3.4.13.

Proposed Response Response Status O

Cl 28 SC Figure 28-7 P 8 L 5 Comment # 604

Law, David 3Com

Comment Type TR Comment Status X

While the base pages encoding is owned by IEEE 802.3 and specified in IEEE std 802.3 it is used by three other Working Groups which have allocated selector filed values. These Working Groups are IEEE 802.5, IEEE 802.9, which are probably just of academic interest at this point, but more importantly, and the most recent allocation which is being implemented as part of IEEE P802.3REVam, IEEE 1394.

While I think it is very unlikely that these other Working Groups have defined so many abilities that A7 is in use, by changing the global definition of the base page encoding for all Selector field values, as is being done here we are effectively changing these other Standards if they cross reference this figure, or placing us in conflict with them if they simply reproduce the figure.

SuggestedRemedy

I see two choices here:

[Option 1] On the assumption that IEEE 802.5, 802.9 and 1394 haven't used A7, which I think is likely, we do redefined A7 to be XNP globally and update Figure 28-7 as shown. This would give the advantage that the XNP function would actually become available to IEEE 1394 and any other Working groups that are allocated a Selector field.

The disadvantage to this approach however is that we may break the text that exists in some of these standards - at a minimum we would need to liase with 1394 on this approach.

Note to support this the text of subclause 28.2.1.2.3 will need to be changed to read "Extended Next Page (XNP) is encoded in bit D12 of the base Link Code word regardless of the value of the Selector Field."

[Option 2] On the assumption that we do not want to do anything that would have any impact on IEEE 802.5, 802.9, or 1394, leave the definition of the Base Page encoding as is. Extended Next page would then simply then become another IEEE 802.3 Selector value related Technology ability bit defined in Annex 28B.2. The text from 28.2.1.2.3 would then be moved to Annex 28B.2.

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 28B SC 28B.2 P 48 L 25 Comment # 54
 David V James JGG
 Comment Type E Comment Status D
 DVJ-54
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Bit
 Proposed Response Response Status O

Cl 28B SC 28B.3 P 51 L 31 Comment # 58
 David V James JGG
 Comment Type E Comment Status D
 DVJ-58
 Misleading capitalization
 SuggestedRemedy
 Message Code Description
 ==>
 Message Code description
 Proposed Response Response Status O

Cl 28B SC 28B.3 P 49 L 34 Comment # 55
 David V James JGG
 Comment Type E Comment Status D
 DVJ-55
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 PAUSE, ASM_DIR, PAUSE, ASM_DIR
 Proposed Response Response Status O

Cl 28B SC 28B.3 P 51 L 32 Comment # 57
 David V James JGG
 Comment Type E Comment Status D
 DVJ-57
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Message Code #, M10, ... M0
 Proposed Response Response Status O

Cl 28B SC 28B.3 P 51 L 23 Comment # 56
 David V James JGG
 Comment Type T Comment Status D
 DVJ-56
 Consistency is needed.
 SuggestedRemedy
 Pick only one of the following, used throughtout:
 Message Code Field
 Message code field
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 28C SC 28C P51 L17 Comment # 401
 Barrass, Hugh Cisco Systems

Comment Type T Comment Status X

IEEE standards will not use "will"

It must be expressed as a mandatory requirement "shall"; an option "may"; or a statement (not a requirement).

I interpret this as a mandatory requirement, but it might also be a statement.

SuggestedRemedy

Change the sentence to:

"Devices that have negotiated extended Next Page support shall only transmit extended Next Pages."

Alternative resolution (for non normative text):

"Devices that have negotiated extended Next Page support only transmit extended Next Pages."

Proposed Response Response Status O

Cl 28C SC 28C P51 L17 Comment # 348
 Dawe, Piers Agilent

Comment Type T Comment Status D

Is this accurate: 'Devices that have negotiated extended Next Page support will only transmit extended Next Pages.'? 'Only' excludes what? receiving extended Next Pages? transmitting data?

SuggestedRemedy

If the following is what's meant, change to 'Devices that have negotiated extended next page support will transmit extended next pages but not other next pages.'

Proposed Response Response Status O

Cl 28C SC 28C P51 L20 Comment # 599
 Law, David 3Com

Comment Type T Comment Status X

The mapping here seems to be unclear. The statement that additional unformatted pages would be mapped to bits M0:10, U0:10 and U16:26 seems to imply that the message code associated with these unformatted pages, already sent in bits M0:10 of the first Extended Next Page should be repeated in bits M0:10 of the second Extended Next page. I believe that this is correct but should be made clearer.

Other issues are:

- The term '16-bit Next page' is used but not defined.
- It should be specified that multiple Next Pages associated with a single Message Code need to be transmitted in order as there is no way to reorder on reception if they are not.
- Suggest that multiple Next Pages associated with a single message code be transmitted in a burst and not interspersed by other Message Codes. While this is not a protocol requirement, all Extended Next Pages contain a Message Code so can be identified, it will prevent the need to reassembly more than one message at a time at the receiver and also the need for specification of how many messages can be active at one time.

in the following manner. The 11-bit Message Code Field is mapped to bits M0:10 of the extended next page, and the first two unformatted pages associated with the Message Code Field are mapped to bits U0:U10 and U16:U26, respectively of the extended next page. Additional unformatted pages would be mapped to bits M0:10, U0:10, and U16:26

or with other message interspersed.

SuggestedRemedy

Suggest this paragraph be replaced with the following, also should consider moving this text to the body of Clause 28, possibly 28.2.3.4.

An Extended Next Page may be used to transmit a Message Code field and up to two associated Unformatted Code fields. The 11-bit Message Code field is mapped to bits M0:10 of the Extended Next Page. The first 11-bit Unformatted Code field, if required by the message code, is mapped to bits U0:U10 of the Extended Next Page. The second 11-bit Unformatted Code field, if required by the message code, is mapped to bits U16:U26 of the Extended Next Page. All unused bits of the Extended Unformatted Code field of the Extended Next Page shall be set to zero.

If more that two Unformatted Code fields are required by a Message Code, then additional Unformatted Code fields shall be transmitted in subsequent extended next pages. The 11-bit Message Code field is repeated in bits M0:10 of the subsequent Extended Next Pages. The next 11-bit Unformatted Code field is mapped to bits U0:U10 of the Extended Next Page. The following 11-bit Unformatted Code field, if required by the message code, is mapped to bits U16:U26 of the Extended Next Page. All unused bits of the Extended Unformatted Code field of the Extended Next Page shall be set to zero.

If a Message Code requires the transmission of multiple Extended Next Pages, due to the number of Unformatted Code fields it defines, these Extended Next Pages shall be

IEEE P802.3an Comments

transmitted so that the Unformatted Code fields are in the order specified by the Message code.

Proposed Response Response Status

Cl 28D SC 28D L P53 Comment # 314

Dawe, Piers Agilent

Comment Type E Comment Status D

Wrong page headers

SuggestedRemedy

Proposed Response Response Status

Cl 28D SC 28D.5 P54 L 18 Comment # 59

David V James JGG

Comment Type E Comment Status D

DVJ-59
Unclear what is meant by the parenthesis, particularly when bits are identified with such numbers

SuggestedRemedy

. (40.5.1)
==>
(see 40.5.1).
Search for other similar instances and update accordingly.

Proposed Response Response Status

Cl 28D SC 28D.5 P54 L 19 Comment # 60

David V James JGG

Comment Type E Comment Status D

DVJ-60
Excess period.

SuggestedRemedy

messages.
==>
messages

Proposed Response Response Status

Cl 28D SC 28D.6 P54 L 23 Comment # 548

Matt Squire Hatteras Networks

Comment Type E Comment Status X

Unresolved cross-reference.

SuggestedRemedy

Fix.

Proposed Response Response Status

Cl 28D SC 28D.6 P54 L 38 Comment # 558

Bradshaw, Peter Intersil

Comment Type E Comment Status X

"#CrossRFef#" appears here, and also at line 53, and pages 96, line 58, & 175, line 49, p 176 line 12, and several more.

SuggestedRemedy

Fix crossreferences

Proposed Response Response Status

Cl 28D SC 28D.6 P54 L 40 Comment # 259

Dove, Daniel HP ProCurve Networki

Comment Type E Comment Status D

#Crossref# is visible

SuggestedRemedy

Fix it.

Proposed Response Response Status

Cl 28D SC 28D.6 P54 L 45 Comment # 402

Barrass, Hugh Cisco Systems

Comment Type E Comment Status X

10GBASE-T requires the transfer of more than 1 next page message...

SuggestedRemedy

Change item c) to:

10GBASE-T requires an exchange of extended Next Page messages.

Proposed Response Response Status

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general

COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn

SORT ORDER: Clause, Subclause, page, line

5/12/2005 2:09:47 PM

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Cl 28D SC 28D.6

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Cl 28D SC 28D.6 P55 L1 Comment # 549
 Matt Squire Hatteras Networks
 Comment Type E Comment Status X
 It might be beneficial to add a note or other indication that this is the first auto-negotiated BASE-T phy that is full-duplex only, so anyone wondering about duplex negotiations is o-o-luck.
 SuggestedRemedy
 Maybe something as simple as: "Note: 10GBASE-T does not support half-duplex capabilities."
 Proposed Response Response Status O

Cl 28D SC 28D.6 P55 L3 Comment # 315
 Dawe, Piers Agilent
 Comment Type E Comment Status D
 Something missing in 'the signal source. Annex 28B'?
 SuggestedRemedy
 Compare with 28D.5 bullets h, i.
 Proposed Response Response Status O

Cl 30 SC 30.3.2.1.2 P57 L42 Comment # 316
 Dawe, Piers Agilent
 Comment Type E Comment Status D
 Document uses a mix of DSQ128 and 128DSQ. Acronyms that start with a numeral are inconvenient.
 SuggestedRemedy
 Change '128DSQ' to 'DSQ128' throughout.
 Proposed Response Response Status O

Cl 30 SC 30.3.2.1.2 P57 L44 Comment # 570
 Booth, Brad Intel
 Comment Type ER Comment Status X
 128DSQ should be DSQ128 as per Clauses 1 & 55.
 SuggestedRemedy
 Change to DSQ128. Applies also to 30.3.2.1.3.
 Proposed Response Response Status O

Cl 30B SC 30B.2 P61 L28 Comment # 612
 Grow, Robert Intel
 Comment Type ER Comment Status X
 This change could be significantly shortened.
 SuggestedRemedy
 Make the change instruction to simply insert the line and indicate after which existing line, do not show remainder of the subclause.
 Proposed Response Response Status O

Cl 30B SC 30B.2 P69 L3 Comment # 571
 Booth, Brad Intel
 Comment Type ER Comment Status X
 128DSQ should be DSQ128 as per Clauses 1 & 55.
 SuggestedRemedy
 Change to be DSQ128.
 Proposed Response Response Status O

Cl 30B SC 30B.2 P69 L3 Comment # 613
 Grow, Robert Intel
 Comment Type ER Comment Status X
 In reducing the size of the repeated text, this change needs a new editor instruction.
 SuggestedRemedy
 Insert into the PhyTypeValue enumeration after 10GBASE-W.
 Proposed Response Response Status O

Cl 30B SC 30B.2 P72 L5 Comment # 61
 David V James JGG
 Comment Type E Comment Status D
 DVJ-61
 Illegal character code.
 SuggestedRemedy
 Use an em dash, rather than the two dash near equivalent, here and throughtout.
 Proposed Response Response Status O

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Cl 30B SC 30B.2 P73 L 18 Comment # 614
 Grow, Robert Intel
 Comment Type ER Comment Status X
 In reducing the amount of repeated text, this change will need its own change instruction.
 SuggestedRemedy
 Insert into the TypeValue enumeration after 10GBASE-SW.
 Proposed Response Response Status O

Cl 44 SC 44.1 P75 L 35 Comment # 615
 Grow, Robert Intel
 Comment Type ER Comment Status X
 Too much of the base standard is repeated.
 SuggestedRemedy
 Delete all subclauses, figures, tables and paragraphs that are not changed, and insert appropriate change instructions when necessary.
 Proposed Response Response Status O

Cl 44 SC 44.1.3 P76 L 27 Comment # 559
 Bradshaw, Peter Intersil
 Comment Type E Comment Status X
 In Figure 44-1, all the PCS "boxes" except that for 10GBASE-T have their coding ratios shown (64B/66B, 8B/10B).
 SuggestedRemedy
 Change the PCS box label to "64B/65B PCS".
 Proposed Response Response Status O

Cl 44 SC 44.1.4.1 P77 L 7 Comment # 62
 David V James JGG
 Comment Type E Comment Status D
 DVJ-62
 Misleading capitalization
 SuggestedRemedy
 Media Access Control (MAC)
 ==>
 media access control (MAC)
 As per acronyms in 802.3rev.
 Proposed Response Response Status O

Cl 44 SC 44.1.4.1 P77 L 8 Comment # 63
 David V James JGG
 Comment Type E Comment Status D
 DVJ-63
 Misleading capitalization
 SuggestedRemedy
 Reconciliation Sublayer
 ==>
 reconciliation sublayer
 As per acronyms in 802.3rev.
 Proposed Response Response Status O

Cl 44 SC 44.1.4.4 P77 L 31 Comment # 616
 Grow, Robert Intel
 Comment Type E Comment Status X
 The change instruction could be clearer.
 SuggestedRemedy
 Insert new row and column into Table 44-1 to add 10GBASE-T
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 44 SC 44.1.4.4 P78 L 30 Comment # 572
 Booth, Brad Intel
 Comment Type ER Comment Status X
 128DSQ should be DSQ128 as per Clauses 1 & 55.
 SuggestedRemedy
 Change to be DSQ128.
 Proposed Response Response Status O

Cl 44 SC 44.1.4.4 P78 L 34 Comment # 302
 Dawe, Piers Agilent
 Comment Type ER Comment Status D
 Clashing edits: P802.3am/D2.2 has 'Specifications of each physical layer device are contained in Clause 52 through Clause 54 inclusive.', P802.3aq/D2.0 has 'Specifications of these physical layer devices are contained in Clause 52 through Clause 54 and Clause 68.', here we have 'Specifications of each physical layer device are contained in Clause 52 through Clause 55 inclusive.' The 'each' is problematical - implies that specifications of each physical layer device is in some or all of the clauses, when actually the specifications for any one physical layer device are contained within just one clause. Also, 'through' is not a substitute for 'to' in English for international use, although that might be a common usage in some geographies. We want a form of words that will still work with 802.3aq, 802.3an and 802.3ap.
 SuggestedRemedy
 If the style rules and Frame let us, change to 'Specifications of these physical layer devices are contained in Clauses 52, 53, 54 and 55.' If not, change to 'Specifications of these physical layer devices are contained in Clause 52 to Clause 55.' or 'Specifications of these physical layer devices are contained in Clause 52, Clause 53, Clause 54 and Clause 55.' Coordinate with P802.3aq and P802.3ap.
 Proposed Response Response Status O

Cl 44 SC 44.3 P79 L 28-2 Comment # 236
 Shimon Muller Sun Microsystems, Inc.
 Comment Type TR Comment Status D delay
 The delay constraints specified for 10GBASE-T are at least an order of magnitude greater than what would be acceptable for many applications that are intended to be deployed using this technology.
 Furthermore, I do not recall any contributions made to the Task Force that justify such a high latency in the PHY.
 See my presentation (muller_1_0304.pdf) for latency considerations for the 10GBASE-T PHY

SuggestedRemedy
 Change the 10GBASE-T entry in Table 44-2 such that the round-trip latency does not exceed 20480 bit times or 40 pause_quanta.
 Proposed Response Response Status W

Delay related comments are numbered:
 236, 242, 369

Cl 44 SC 44.3 P79 L 3 Comment # 617
 Grow, Robert Intel
 Comment Type E Comment Status X
 Editor instruction could be clearer.
 SuggestedRemedy
 A row is inserted.
 Proposed Response Response Status O

Cl 44 SC Table 44-2 P79 L 28 Comment # 619
 Grow, Robert Intel
 Comment Type E Comment Status X
 This should simply be 10GBASE-T as it is a complete PHY (PCS, PMA and PMD).
 SuggestedRemedy
 Change per comment. I would also move to the bottom of the table.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC P L Comment # 252
 Szczepanek, Andre Texas Instruments

Comment Type E Comment Status D

55.7.2.6 provides a specification for the maximum skew between any two duplex channels that is equivalent to 8UI. Where is this inter-lane skew removed ?. There is no mention of channel alignment in either the PMA or PCS sections of the document. In XAU1 this is a PCS function, however the PCS-PMA interface implies deskewed data. So by implication it is a PMA function. However the PMA receive section does not mention deskew or channel alignment as one of its functions, or how it should be achieved. I have classed this "editorial" as 1000Base-T does not indicate where channel alignment occurs either.

SuggestedRemedy

Add the requirement to align channels to the general requirements text in 55.4.2.3

Proposed Response Response Status O

Cl 45 SC P L Comment # 530
 Zimmerman, George Solarflare Communicat

Comment Type T Comment Status X

No register indicating the status of pair swap and status of polarity reversal.

SuggestedRemedy

Add a register indicating status of pair swap and status of polarity reversal as described in the attached document.

Proposed Response Response Status O

Cl 45 SC P L Comment # 531
 Zimmerman, George Solarflare Communicat

Comment Type T Comment Status X

No register indicating skew delay between pairs

SuggestedRemedy

Add a register indicating skew delay as described in the attached document.

Proposed Response Response Status O

Cl 45 SC P91 L31 Comment # 78
 David V James JGG

Comment Type E Comment Status D

DVJ-78
 Small values are supposed to be centered.

SuggestedRemedy

Center the following columns:
 Bit(s), R/W

Proposed Response Response Status O

Cl 45 SC P91 L37 Comment # 76
 David V James JGG

Comment Type T Comment Status D

DVJ-76
 This inconsistency is very confusing. Most lists start from 0.

SuggestedRemedy

Here and throughtout, list the 0 value first and start counting upwards.

Proposed Response Response Status O

Cl 45 SC P91 L46 Comment # 75
 David V James JGG

Comment Type T Comment Status D

DVJ-75
 The clear line on the bottom makes it look like this row is continued.

SuggestedRemedy

Use fixed templates, or manually force to very-thin.

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC P92 L 16 Comment # 79
 David V James JGG
 Comment Type T Comment Status D
 DVJ-79
 Move the footnote to the RO entry, where it applies, not the header.
 SuggestedRemedy
 NoRemedySupplied
 Proposed Response Response Status O

Cl 45 SC 2.1.60.6 P92 L 52 Comment # 536
 Zimmerman, George Solarflare Communicat
 Comment Type E Comment Status X
 Typo in title - "If.." precedes "THP 4 setting"
 SuggestedRemedy
 Delete "If"
 Proposed Response Response Status O

Cl 45 SC 2.1 P87 L 50 Comment # 529
 Zimmerman, George Solarflare Communicat
 Comment Type E Comment Status X
 The document refers to all processing occuring in pairs A,B,C, and D. However, the names of the registers 1.133 through 1.144 refer to channels 0 through 3.
 SuggestedRemedy
 Change references in register names from channel 0 through 3 to pair A through D, respectively. This change affects: lines 50 through 59 on page 87, lines 5 through 11 on page 88, subclauses 45.2.1.163 through 45.2.1.174
 Proposed Response Response Status O

Cl 45 SC 2.1.61 P93 L 29 Comment # 537
 Zimmerman, George Solarflare Communicat
 Comment Type E Comment Status X
 Text says precoder setting, should be power level setting
 SuggestedRemedy
 change to power level setting
 Proposed Response Response Status O

Cl 45 SC 2.1.60 P91 L 36 Comment # 535
 Zimmerman, George Solarflare Communicat
 Comment Type E Comment Status X
 Descriptions in table do not have the correct setting number for settings 3, 2, 1, and 0, for both link partner and PMA (registers 1.130.11 through 1.130.8, and 1.130.3 through 1.130.0)
 SuggestedRemedy
 Correct setting numbers in descriptions to match names.
 Proposed Response Response Status O

Cl 45 SC 2.1.61 P93 L 42 Comment # 538
 Zimmerman, George Solarflare Communicat
 Comment Type E Comment Status X
 Subclause 45.2.1.61 CORRECTLY defines that the selected power level setting is described by register 1.131. The following sub-subclauses 45.2.1.61.1 through 45.2.1.61.16 incorrectly state that the bits represent whether the PHY has "the ability to operate" at a certain power level
 SuggestedRemedy
 Change text in 45.2.1.61.1 through .16 from "has the ability to operate with" or "has the ability to support" to "has selected" the power level, or, preferable, delete the one-bit-per-level encoding and replace with a 3 bit binary number, encoding the power level selected (0 through 7).
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC 2.1.8 P 89 L 38 Comment # 522
 Zimmerman, George Solarflare Communicat

Comment Type TR Comment Status X

There is no transmit disable function control for 10GBASE-T. Such control may be required externally for test purposes and internally to prevent spurious signal emission during power up or release from power-down in accordance with 55.8.3

SuggestedRemedy

use bits 1.9.4:1 for disabling transmitter on channels 3:0 respectively. Use bit 1.9.0 for global (all channels) transmit disable. Add reference to the appropriate section of Clause 55 in the register 1.9 description. This control should be defined in addition to defining the "Transmit Diable" functionality in Clause 55.

Proposed Response Response Status O

Cl 45 SC 2.7.10.4 P 113 L 4 Comment # 527
 Zimmerman, George Solarflare Communicat

Comment Type E Comment Status X

In the description of the bit 7.32.12: "When read as a logic zero, bit 7.32.12 indicates that the PHY lacks the ability to support full duplex operation". The implication is that it can still support 10GBASE-T (which is defined in full duplex only). the bit description in the table is more accurate.

SuggestedRemedy

Change the above statement to: "When read as a logic zero, bit 7.32.12 indicates that the PHY lacks the ability to support 10GBASE-T full duplex operation."

Proposed Response Response Status O

Cl 45 SC 45.2 P 84 L 12 Comment # 64
 David V James JGG

Comment Type E Comment Status D

DVJ-64
 Looks bad.

SuggestedRemedy

Center this left column.
 Also, do this for all columns with only small width values.

Proposed Response Response Status O

Cl 45 SC 45.2.1 P 87 L 48 Comment # 317
 Dawe, Piers Agilent

Comment Type E Comment Status D
 case

SuggestedRemedy

Change 'Test' to 'test'

Proposed Response Response Status O

Cl 45 SC 45.2.1.10 P 90 L 14 Comment # 72
 David V James JGG

Comment Type E Comment Status D

DVJ-72
 Small values are supposed to be centered.

SuggestedRemedy

Center the following columns:
 Bit(s), R/W

Proposed Response Response Status O

Cl 45 SC 45.2.1.10 P 90 L 16 Comment # 563
 Bradshaw, Peter Intersil

Comment Type T Comment Status X

Table 45-12; I would prefer to see 10GBASE-T as bit 1.11.1, to conform to the likely order of the PMA types elsewhere in the various tables, etc.

SuggestedRemedy

swap 1.11.1 & 1.11.2

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC 45.2.1.10 P90 L 22 Comment # 71
 David V James JGG
 Comment Type E Comment Status D
 DVJ-71
 Misleading capitalization
 SuggestedRemedy
 Read Only
 ==>
 Read only
 Proposed Response Response Status O

Cl 45 SC 45.2.1.59.1 P91 L 10 Comment # 73
 David V James JGG
 Comment Type E Comment Status D
 DVJ-73
 Misspelling
 SuggestedRemedy
 Bit(s)
 ==>
 Bit(s)
 Proposed Response Response Status O

Cl 45 SC 45.2.1.10 P90 L 23 Comment # 70
 David V James JGG
 Comment Type T Comment Status D
 DVJ-70
 Move the footnote to the RO entry, where it applies, not the header.
 SuggestedRemedy
 NoRemedySupplied
 Proposed Response Response Status O

Cl 45 SC 45.2.1.59.1 P91 L 11 Comment # 77
 David V James JGG
 Comment Type E Comment Status D
 DVJ-77
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Bit(s), R/W
 Proposed Response Response Status O

Cl 45 SC 45.2.1.10 P90 L 4 Comment # 624
 Grow, Robert Intel
 Comment Type ER Comment Status X
 Needs better change instruction.
 SuggestedRemedy
 Insert row into Table 45-11 to define reserved bit 1.11.2 for 10GBASE_T, as follows:
 Editor's Note (to be removed prior to publication): Other projects are defining bits in this register (e.g., P802.3ap and P802.3aq). Depending on order of publication, the number of rows in the table my need to be adjusted at time of publication. Bit 1.11.1 is proposed for use by 10GBASE-LRM, bits 1.11.3, and bits 1.11.4 are proposed for use by 10GBASE-KR4 and 10GBASE-KR respectively. Reserved bits will also need to be adjusted based on order of publication. Reserved bits will also need to be adjusted based on order of publication.
 Proposed Response Response Status O

Cl 45 SC 45.2.1.59.1 P91 L 16 Comment # 74
 David V James JGG
 Comment Type T Comment Status D
 DVJ-74
 Move the footnote to the RO entry, where it applies, not the header.
 SuggestedRemedy
 NoRemedySupplied
 Proposed Response Response Status O

IEEE P802.3an Comments

CI 45 SC 45.2.1.6 P 86 L 23 Comment # 560
 Bradshaw, Peter Intersil
 Comment Type E Comment Status X
 In Table 45-3, Registers 1.16 to 1.29 have no label. (This is actually a bug in Rev AM).
 SuggestedRemedy
 Add "reserved" in column (if RevAM does not fix it).
 Proposed Response Response Status O

CI 45 SC 45.2.1.6 P 86 L 54 Comment # 67
 David V James JGG
 Comment Type E Comment Status D
 DVJ-67
 Use thin line at bottom of pages, preferably using a good template that does this automatically. There is a reason for this, which is that it makes it clearer that the table is continued.
 SuggestedRemedy
 Fix it, here and throughout.
 Proposed Response Response Status O

CI 45 SC 45.2.1.6 P 86 L 7 Comment # 66
 David V James JGG
 Comment Type E Comment Status D
 DVJ-66
 Looks bad.
 SuggestedRemedy
 Center this left column.
 Also, do this for all columns with only small width values.
 Proposed Response Response Status O

CI 45 SC 45.2.1.6 P 87 L 42 Comment # 561
 Bradshaw, Peter Intersil
 Comment Type T Comment Status X
 I see no good reason why register 1.128 should not be the beginning of the 10GBASE-T-specific registers. This is a binarily-significant number, and makes a logical break. Other breaks have (mainly) ended in either a binary or decimal break point, while 129 is divisible only by 3 and 43, neither of them really useful in either binary or decimal descriptions.
 SuggestedRemedy
 Start 10GBASE-T registers at 1.128 (1.80'h). This would require corresponding changes to 45.2.1.59 through 74
 Proposed Response Response Status O

CI 45 SC 45.2.1.6 P 88 L 30 Comment # 68
 David V James JGG
 Comment Type T Comment Status D
 DVJ-68
 This is nonsense. A constant 4-bit value is never assigned a variable value, as the equals sign implies.
 SuggestedRemedy
 Either:
 Put a header here and eliminate the '=' sign.
 OR
 Expand this into a distinct following table.
 Proposed Response Response Status O

CI 45 SC 45.2.1.6 P 88 L 31 Comment # 554
 Bradshaw, Peter Intersil
 Comment Type E Comment Status X
 In Table 45-8; although my attempts to "rationalize" the assignments in this table during the CX4 task force were resoundingly rejected, it would still seem more rational to use '1000' for 10GBASE-T (closer to '0000' for the other electrical cable standard, CX4) and '1001' for 10GBASE-LRM (here listed as "reserved"), since they are both under initial review currently.
 SuggestedRemedy
 Swap the two lines for 10GBASE-T and the 'reserved' left for 10GBASE-LRM, so that 10GBASE-T is 1000.
 Obviously, this would need to be co-ordinated with the 10GBASE-LRM task force.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC 45.2.1.6 P 88 L 39 Comment # 69
 David V James JGG
 Comment Type T Comment Status D
 DVJ-69
 This footnote is nonsense. There are two distinct meanings for R/W, used the header and used in the cells.
 SuggestedRemedy
 Put RW in the cell, and use the footnote to describe it.
 Proposed Response Response Status O

Cl 45 SC 45.2.1.6.1 P 88 L 45 Comment # 555
 Bradshaw, Peter Intersil
 Comment Type E Comment Status X
 The subclause heading references bits 2:0, whereas the corresponding table utilizes bits 3:0
 SuggestedRemedy
 Replace "2:0" by "3:0"
 Proposed Response Response Status O

Cl 45 SC 45.2.1.60 P 19 L 91 Comment # 323
 Dawe, Piers Agilent
 Comment Type T Comment Status D
 The title is 'THP setting' yet 45.2.1.60.1-10 talk about 'will operate', 'will not operate', 'will not able to operate', 'will to operate', 'will not able to', ... 'will bypass', 'will not bypass'. - sounds like an ability register, with some typos.
 SuggestedRemedy
 Tidy it up.
 Proposed Response Response Status O

Cl 45 SC 45.2.1.60 P 91 L 11 Comment # 634
 Lynskey, Eric UNH-IOL
 Comment Type E Comment Status X
 In table 45-50, bit 1.130.1, description should be for setting 1.
 SuggestedRemedy
 Change to THP setting one is selected and THP setting one is not selected.
 Proposed Response Response Status O

Cl 45 SC 45.2.1.60 P 91 L 14 Comment # 635
 Lynskey, Eric UNH-IOL
 Comment Type E Comment Status X
 In table 45-50, bit 1.130.0, description should be for setting 0.
 SuggestedRemedy
 Change to THP setting zero is selected and THP setting zero is not selected.
 Proposed Response Response Status O

IEEE P802.3an Comments

CI 45 SC 45.2.1.60 P91 L 19 Comment # 14006

McClellan, Brett Solarflare

Comment Type T Comment Status R D1.4

The use of one-hot encoding for the register bits appears to be a remnant from an ability register rather than a status register.
Also only 4 THP settings are defined (including bypass) so there are too many bits defined.

SuggestedRemedy

Change register bit definitions of 1.130.15:0 to:
1.130.12:10 Reserved Value always 0, writes ignored
1.130.9:8 Link Partner THP setting
00 = bypass
01 = SHORT
10 = MEDIUM
11 = LONG
1.130.7:2 Reserved Value always 0, writes ignored
1.130.1:0 THP setting
00 = bypass
01 = SHORT
10 = MEDIUM
11 = LONG

Proposed Response Response Status C

REJECT.

Nothing wrong with current implementation. The suggested remedy appears to be an improvement but it should be submitted during working group ballot.

Editor to resubmit to working group ballot

CI 45 SC 45.2.1.60 P91 L 20 Comment # 539

Zimmerman, George Solarflare Communicat

Comment Type E Comment Status X

Encoding for THP level selected is overly complicated. One of 5 levels is selected, encode simply as a 3 bit number.

SuggestedRemedy

Change register bit definitions in Table 45-50 to encode both the Link partner and PMA THP settings as a 3 bit unsigned number.
Delete sections 45.2.1.60.1 through 45.2.1.60.10 and replace with description that the index number of the PMA THP setting selected (and link partner settings) are encoded as 3 bit unsigned numbers. Delete "only one THP setting may be selected at any time" on line 24, page 91. Reserve remaining bits, or combine with the power backoff register.

Proposed Response Response Status O

CI 45 SC 45.2.1.60 P91 L 21 Comment # 319

Dawe, Piers Agilent

Comment Type E Comment Status D

Problems with 'The THP setting register will reflect the THP setting selected during the startup process and will only be valid if bit 1.129.0 is set to one.' Why is it in the future tense? Move 'only' to be next to the thing it is meant to qualify (the 'if', not the 'be valid').

SuggestedRemedy

Change to 'The THP setting register reflects the THP setting selected during the startup process and will only be valid if bit 1.129.0 is set to one.' Similarly fix the tense in 45.2.1.61 and 45.2.1.63.

Proposed Response Response Status O

CI 45 SC 45.2.1.60 P91 L 22 Comment # 481

Thaler, Pat Agilent Technologies

Comment Type ER Comment Status X

It is more friendly to the reader to mention the bit by name, LP information valid, rather than only by number

SuggestedRemedy

change to "will only be valid if the LP information valid bit, 1.129.0, is set to one." Please do this here and in the other places where the bit is referenced.

Proposed Response Response Status O

CI 45 SC 45.2.1.60 P91 L 25 Comment # 349

Dawe, Piers Agilent

Comment Type E Comment Status D

Grammar: assignment is singular

SuggestedRemedy

Change 'are' to 'is'.

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC 45.2.1.60 P91 L 32 Comment # 564
 Bradshaw, Peter Intersil
 Comment Type E Comment Status X
 In Table 45-50, the descriptions for the THP settings seem to disagree with the descriptions in the following subclauses (45.2.1.60.1 through 10); it is suspicious that they are all identical.
 SuggestedRemedy
 Check, and fix if needed
 Proposed Response Response Status O

Cl 45 SC 45.2.1.60 P91 L 42 Comment # 629
 Lynskey, Eric UNH-IOL
 Comment Type E Comment Status X
 In table 45-50, description should be for setting 1.
 SuggestedRemedy
 Change to Link Partner THP setting one is selected and Link Partner THP setting one is not selected.
 Proposed Response Response Status O

Cl 45 SC 45.2.1.60 P91 L 34 Comment # 626
 Lynskey, Eric UNH-IOL
 Comment Type E Comment Status X
 In Table 45-60, description should contain THP. This comment applies to one location in 1.130.12, and two locations in 1.130.11:1.130.8 for a total of 9 additions.
 SuggestedRemedy
 Add THP before setting in each location so that it reads Link Partner THP setting N..
 Proposed Response Response Status O

Cl 45 SC 45.2.1.60 P91 L 45 Comment # 630
 Lynskey, Eric UNH-IOL
 Comment Type E Comment Status X
 In table 45-50, description should be for setting 0.
 SuggestedRemedy
 Change to Link Partner THP setting zero is selected and Link Partner THP setting zero is not selected.
 Proposed Response Response Status O

Cl 45 SC 45.2.1.60 P91 L 36 Comment # 627
 Lynskey, Eric UNH-IOL
 Comment Type E Comment Status X
 In table 45-50, description should be for setting 3.
 SuggestedRemedy
 Change to Link Partner THP setting three is selected and Link Partner THP setting three is not selected.
 Proposed Response Response Status O

Cl 45 SC 45.2.1.60 P91 L 6 Comment # 632
 Lynskey, Eric UNH-IOL
 Comment Type E Comment Status X
 In table 45-50, bit 1.130.3, description should be for setting 3.
 SuggestedRemedy
 Change to THP setting three is selected and THP setting three is not selected.
 Proposed Response Response Status O

Cl 45 SC 45.2.1.60 P91 L 39 Comment # 628
 Lynskey, Eric UNH-IOL
 Comment Type E Comment Status X
 In table 45-50, description should be for setting 2.
 SuggestedRemedy
 Change to Link Partner THP setting two is selected and Link Partner THP setting two is not selected.
 Proposed Response Response Status O

Cl 45 SC 45.2.1.60 P91 L 8 Comment # 633
 Lynskey, Eric UNH-IOL
 Comment Type E Comment Status X
 In table 45-50, bit 1.130.2, description should be for setting 2.
 SuggestedRemedy
 Change to THP setting two is selected and THP setting two is not selected.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC 45.2.1.60 P 91-92 L 36-4 Comment # 280
 Lee Sendelbach IBM
 Comment Type ER Comment Status D
 The table uses setting 4 in the text in the column for every case in the description. This flows on to the same table on the next page also.
 SuggestedRemedy
 Put the proper setting values in there.
 Proposed Response Response Status O

Cl 45 SC 45.2.1.60.2 P 92 L 29 Comment # 478
 Thaler, Pat Agilent Technologies
 Comment Type ER Comment Status X
 Why does this line say "will not able to operate" rather than "will not operate"? That isn't grammatically correct and even if it was changed to "will not be able to operate" it doesn't seem accurate. Don't the bits reflect the chosen operating mode rather than the ability to operate in the mode?
 SuggestedRemedy
 Change to "will not operate" as in 45.2.1.60.1. This comment needs to be applied to several of the subclauses of 45.2.1.60.
 Proposed Response Response Status O

Cl 45 SC 45.2.1.60.5 P 92 L 48 Comment # 479
 Thaler, Pat Agilent Technologies
 Comment Type TR Comment Status X
 Does this bit bypass the use of the other THP settings (bits 12 through 9). That's what the text seems to say.
 SuggestedRemedy
 If it acts as a bypass for the other bits, then state that more clearly. Perhaps each of the other bits should specify that they only operate as described when this bit is 0.
 Or, if only one of the 5 settings can be selected at a time (all the bits but one must be zero) which seems to be what 45.2.1.60 says, then it would make more sense to construct this as a 3 bit field that showed the setting selected rather than 5 single bits.
 The same comment applies to 45.2.1.60.10.
 Proposed Response Response Status O

Cl 45 SC 45.2.1.61 P 93 L 23 Comment # 14007
 McClellan, Brett Solarflare
 Comment Type T Comment Status R D1.4
 The use of one-hot encoding for the register bits appears to be a remnant from an ability register rather than a status register.
 SuggestedRemedy
 Change register bit definitions of 1.131.15:0 to:
 1.130.15:11 Reserved Value always 0, writes ignored
 1.130.10:8 Link partner TX power level
 Link partner is operating with TX power level setting = -2dB * 1.130.10:8
 1.130.7:3 Reserved Value always 0, writes ignored
 1.130.2:0 TX power level
 PMA is operating with TX power level setting = -2dB * 1.130.2:0
 Proposed Response Response Status C
 REJECT.
 Nothing wrong with current implementation. The suggested remedy appears to be an improvement but it should be submitted during working group ballot.
 Editor will resubmit to working group ballot.

Cl 45 SC 45.2.1.61 P 93 L 28 Comment # 480
 Thaler, Pat Agilent Technologies
 Comment Type TR Comment Status X
 Similar problems to those in 45.2.1.60 occur in this subclause. If only one power level can be selected at a time, it makes more sense to use a 3 bit field to show the level rather than 8 individual bits. Also, the subclauses say "is not able to" but everything else says these bits indicate the current setting rather than ability.
 SuggestedRemedy
 Change to a bit field indicating the setting level, or if that isn't done, at a minimum remove the "is not able to" language.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC 45.2.1.61.4 P94 L 5 Comment # 82
 David V James JGG
 Comment Type E Comment Status D
 DVJ-82
 Double parenthesis.
 SuggestedRemedy
 Bit(s)
 ==>
 Bit(s)
 Proposed Response Response Status O

Cl 45 SC 45.2.1.61.4 P94 L 8 Comment # 81
 David V James JGG
 Comment Type E Comment Status D
 DVJ-81
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Bit(s), R/W
 Proposed Response Response Status O

Cl 45 SC 45.2.1.61.4 P94 L 6-45 Comment # 281
 Lee Sendelbach IBM
 Comment Type E Comment Status D
 Table 45-51 the power level setting uses 0 sometimes and uses one/two/three sometimes.
 This should be made consistent.
 SuggestedRemedy
 Use text or digital numbers consistently.
 Proposed Response Response Status O

Cl 45 SC 45.2.1.62 P96 L 32 Comment # 85
 David V James JGG
 Comment Type E Comment Status D
 DVJ-85
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Bit(s), R/W
 Proposed Response Response Status O

Cl 45 SC 45.2.1.61.4 P94 L 7 Comment # 80
 David V James JGG
 Comment Type T Comment Status D
 DVJ-80
 This inconsistency is very confusing. Most lists start from 0.
 SuggestedRemedy
 Here and throughtout, list the 0 value first and start counting upwards.
 Proposed Response Response Status O

Cl 45 SC 45.2.1.62 P96 L 32 Comment # 84
 David V James JGG
 Comment Type T Comment Status D
 DVJ-84
 This inconsistency is very confusing. Most lists start from 0.
 SuggestedRemedy
 Here and throughtout, list the 0 value first and start counting upwards.
 Proposed Response Response Status O

IEEE P802.3an Comments

CI 45 SC 45.2.1.62 P96 L33 Comment # 463
 McClellan, Brett Solarflare
 Comment Type T Comment Status X
 Register bits 1.132.15:13 = 1 1 1 is currently shown as Reserved, but 55.5.2 defines a Test Mode 7 for that setting.
 SuggestedRemedy
 Change text to:
 1 1 1 = Test Mode 7
 Proposed Response Response Status O

CI 45 SC 45.2.1.62 P96 L40 Comment # 86
 David V James JGG
 Comment Type E Comment Status D
 DVJ-86
 Misleading capitalization
 SuggestedRemedy
 Transmitter Test Frequencies
 ==>
 Transmitter test frequencies
 Proposed Response Response Status O

CI 45 SC 45.2.1.62 P96 L49 Comment # 83
 David V James JGG
 Comment Type T Comment Status D
 DVJ-83
 Move the footnote to the cell entry, where it applies, not the header.
 Also, change the cell entry to RW.
 SuggestedRemedy
 Do it.
 Proposed Response Response Status O

CI 45 SC 45.2.1.62.1 P96 L58 Comment # 631
 Lynskey, Eric UNH-IOL
 Comment Type E Comment Status X
 Wrong bit reference.
 SuggestedRemedy
 Change 7.9.15:13 to 1.132.15:13 on both lines 58 and 59.
 Proposed Response Response Status O

CI 45 SC 45.2.1.63 P97 L11 Comment # 325
 Dawe, Piers Agilent
 Comment Type E Comment Status D
 Need spaces between number and unit
 SuggestedRemedy
 e.g. '0.1 dB'. There are several more.
 Proposed Response Response Status O

CI 45 SC 45.2.1.63 P97 L11 Comment # 324
 Dawe, Piers Agilent
 Comment Type T Comment Status D
 0.5 dB of accuracy sounds difficult. Even if it's used for power setting, is it necessary? I'm sorry I did not have time to research this comment.
 SuggestedRemedy
 Relax to 1 dB?
 Proposed Response Response Status O

CI 45 SC 45.2.1.63 P97 L12 Comment # 326
 Dawe, Piers Agilent
 Comment Type ER Comment Status D
 Clause 45 doesn't use this nerdy and misleading '0x' notation (one would imagine that x means don't care). Please don't start now.
 SuggestedRemedy
 Delete '0x', use subscript 16 unless clause 45 has another established notation for denoting hex. Applies to several following subclauses.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC 45.2.1.7.4 P 89 L 15 Comment # 318
 Dawe, Piers Agilent
 Comment Type E Comment Status D
 'for 10GBASE-T PMA'
 SuggestedRemedy
 Change to 'for the 10GBASE-T PMA' or 'for a 10GBASE-T PMA'. Similarly in 45.2.1.7.4.
 Proposed Response Response Status O

Cl 45 SC 45.2.1.71 P 98 L 12 Comment # 636
 Lynskey, Eric UNH-IOL
 Comment Type E Comment Status X
 Need better cross reference. Also applies to lines 20, 27, and 35 on the same page.
 SuggestedRemedy
 Replace "section 55" with appropriate reference.
 Proposed Response Response Status O

Cl 45 SC 45.2.1.8 P 89 L 53 Comment # 261
 Dove, Daniel HP ProCurve Networki
 Comment Type E Comment Status D
 "PMDs" is incorrectly used.
 SuggestedRemedy
 Change to "PMD" or strike the "s", whichever you want to do. :)
 Proposed Response Response Status O

Cl 45 SC 45.2.1.8 P 89 L 56 Comment # 562
 Bradshaw, Peter Intersil
 Comment Type TR Comment Status X
 My opinion as an answer to the editor's comment is "at least something". Since there are four twisted pairs, there would seem to be some point in being able to disable them individually, and certainly collectively would surely be desirable.
 SuggestedRemedy
 Define a function for Transmit Disable in 10GBASE-T. The Working group should surely do this.
 Proposed Response Response Status O

Cl 45 SC 45.2.3 P 98 L 48 Comment # 88
 David V James JGG
 Comment Type E Comment Status D
 DVJ-88
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Register address
 Proposed Response Response Status O

Cl 45 SC 45.2.3 P 98 L 56 Comment # 87
 David V James JGG
 Comment Type T Comment Status D
 DVJ-87
 The clear line on the bottom makes it look like this row is continued.
 SuggestedRemedy
 Use fixed templates, or manually force to very-thin.
 Proposed Response Response Status O

Cl 45 SC 45.2.3.11.4 P 103 L 6 Comment # 327
 Dawe, Piers Agilent
 Comment Type E Comment Status D
 This last long sentence is too ambitious and does not succeed in saying what is intended
 SuggestedRemedy
 Try using two paragraphs as in 45.2.3.11.3.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC 45.2.3.12 P 103 L 25 Comment # 96
David V James JGG
Comment Type E Comment Status D
DVJ-96
Small values are supposed to be centered.
SuggestedRemedy
Center the following columns:
Bit(s), R/W
Proposed Response Response Status O

Cl 45 SC 45.2.3.12 P 103 L 31 Comment # 95
David V James JGG
Comment Type T Comment Status D
DVJ-95
This inconsistency is very confusing. Most lists start from 0. VERY few lists count in a nonmonotonic fashion, like this one does.
SuggestedRemedy
Here and throughtout, list the 0 value first and start counting upwards.
Proposed Response Response Status O

Cl 45 SC 45.2.3.6 P 100 L 31 Comment # 90
David V James JGG
Comment Type E Comment Status D
DVJ-90
Small values are supposed to be centered.
SuggestedRemedy
Center the following columns:
Bit(s), R/W
Proposed Response Response Status O

Cl 45 SC 45.2.3.6 P 100 L 36 Comment # 89
David V James JGG
Comment Type T Comment Status D
DVJ-89
This inconsistency is very confusing. Most lists start from 0.
SuggestedRemedy
Here and throughtout, list the 0 value first and start counting upwards.
Proposed Response Response Status O

Cl 45 SC 45.2.3.7 P 101 L 13 Comment # 92
David V James JGG
Comment Type E Comment Status D
DVJ-92
Small values are supposed to be centered.
SuggestedRemedy
Center the following columns:
Bit(s), R/W
Proposed Response Response Status O

Cl 45 SC 45.2.3.7 P 101 L 15 Comment # 91
David V James JGG
Comment Type T Comment Status D
DVJ-91
This inconsistency is very confusing. Most lists start from 0. VERY few lists count in a nonmonotonic fashion, like this one does.
SuggestedRemedy
Here and throughtout, list the 0 value first and start counting upwards.
Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC 45.2.3.7.4 P 102 L 12 Comment # 94
 David V James JGG
 Comment Type E Comment Status D
 DVJ-94
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Bit(s), R/W
 Proposed Response Response Status O

Cl 45 SC 45.2.3.7.4 P 102 L 16 Comment # 93
 David V James JGG
 Comment Type T Comment Status D
 DVJ-93
 This inconsistency is very confusing. Most lists start from 0. VERY few lists count in a nonmonotonic fashion, like this one does.
 SuggestedRemedy
 Here and throughtout, list the 0 value first and start counting upwards.
 Proposed Response Response Status O

Cl 45 SC 45.2.7 P 104 L 31 Comment # 97
 David V James JGG
 Comment Type E Comment Status D
 DVJ-97
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Register address
 Proposed Response Response Status O

Cl 45 SC 45.2.7 P 104 L 48 Comment # 414
 McConnell, Mike KeyEye Communicatio
 Comment Type E Comment Status X
 Register 7.16 name AN LD Advertisement doesn't match 45.2.7.6 name
 SuggestedRemedy
 Make name is register table 45-117 match register description (45.2.7.6) and subsequent table (45-120) match. Also fix the PICs (AM25)
 Proposed Response Response Status O

Cl 45 SC 45.2.7 P 105 L 14 Comment # 455
 Healey, Adam Agere Systems
 Comment Type T Comment Status X
 Table 45-117: 10GBASE-T AN control, AN status, and AN control 2 registers (7.32-34) use register space currently claimed by P802.3ap.
 A corresponding comment will be generated against P802.3ap/D0.9. This comment is intended to highlight the issue and ensure cooperation between the two Task Forces to ensure register space overlap is eliminated and avoided in the future.
 SuggestedRemedy
 It is expected that P802.3ap will defer to P802.3an and re-arrange registers accordingly. Therefore, no changes to the draft are proposed.

However, the commenter humbly requests that, prior to allocating additional registers in MMD 7, P802.3an first consult with P802.3ap to avoid any further situations that would require significant re-ordering of P802.3ap registers.
 Proposed Response Response Status O

Cl 45 SC 45.2.7 P 113 L 45 Comment # 460
 McClellan, Brett Solarflare
 Comment Type E Comment Status X
 Reference to the Page received bit is incorrect. This refers to the Clause 22 bit instead of the Clause 45 bit.
 SuggestedRemedy
 Change the Page received bit (6.1) to (7.1.6).
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC 45.2.7.1 P 105 L 32 Comment # 99
 David V James JGG
 Comment Type E Comment Status D
 DVJ-99
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Bit(s), R/W
 Proposed Response Response Status O

Cl 45 SC 45.2.7.10 P 112 L 12 Comment # 108
 David V James JGG
 Comment Type E Comment Status D
 DVJ-108
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Bit(s), R/W
 Proposed Response Response Status O

Cl 45 SC 45.2.7.1 P 105 L 36 Comment # 98
 David V James JGG
 Comment Type T Comment Status D
 DVJ-98
 This inconsistency is very confusing. Most lists start from 0. VERY few lists count in a nonmonotonic fashion, like this one does.
 SuggestedRemedy
 Here and throughtout, list the 0 value first and start counting upwards.
 Proposed Response Response Status O

Cl 45 SC 45.2.7.10 P 112 L 22 Comment # 107
 David V James JGG
 Comment Type T Comment Status D
 DVJ-107
 This inconsistency is very confusing. Most lists start from 0. VERY few lists count in a nonmonotonic fashion, like this one does.
 SuggestedRemedy
 Here and throughtout, list the 0 value first and start counting upwards.
 Proposed Response Response Status O

Cl 45 SC 45.2.7.1.3 P 106 L 30 Comment # 676
 Law, David 3Com
 Comment Type T Comment Status X
 The text 'Bit 7.0.12 is a copy of bit 0.12 in register 0 as defined in section 22.2.4.', particularly the text 'is a copy of', implies that when bit 7.0.12 exists, register 0 has to exist. I though that the intent was that a permissible implementation would be to only have the Clause 45 MDIO MMD 7 register set to support Auto-Negotiation.
 SuggestedRemedy
 If it is not mandatory to implement register 0 when MMD 7 is implemented, suggest the text should be changed to read 'Bit 7.0.12 is a copy of bit 0.12 in register 0 if present (see 22.2.4). and a default condition for the bit defined. Perform similar changes through subclause 45.2.7.
 If this text is correct, editorially '.. as defined in section 22.2.4.' should read '.. (see 22.2.4).'
 Proposed Response Response Status O

Cl 45 SC 45.2.7.10 P 112 L 22-2 Comment # 237
 Shimon Muller Sun Microsystems, Inc.
 Comment Type T Comment Status D
 Bit 7.32.12 makes no sense whatsoever, at least the way it is described. 10-GE is defined for full duplex operation only. Therefore, there is no need to negotiate this capability.
 SuggestedRemedy
 Delete this bit from Table 45-124.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC 45.2.7.10 P 112 L 29 Comment # 109
 David V James JGG
 Comment Type E Comment Status D
 DVJ-109
 Misleading capitalization
 SuggestedRemedy
 Latching High
 ==>
 Latching high
 Proposed Response Response Status O

Cl 45 SC 45.2.7.10 P 112 L 29 Comment # 462
 McClellan, Brett Solarflare
 Comment Type T Comment Status X
 The seed value in 1000BASE-T was not settable by the host, and there is no description or allowance for it to be settable by the host in 10GBASE-T. However, Table 45-124 has a R/W register for the seed value.
 SuggestedRemedy
 Change the R/W status to RO for 7.32.10:0. Suggest moving these bits to a status register instead of in a control register. Clarify if this is the local device seed that was generated. (If the purpose was to allow the host to set these bits, a description needs to be written somewhere in the specification as to what happens if/when the host sets these bits. This is undefined. It appears the purpose was to report the value of the seed which was generated.)
 Proposed Response Response Status O

Cl 45 SC 45.2.7.10 P 112 L 29 Comment # 110
 David V James JGG
 Comment Type E Comment Status D
 DVJ-110
 Misleading capitalization
 SuggestedRemedy
 Read/Write
 ==>
 read/write
 Proposed Response Response Status O

Cl 45 SC 45.2.7.10 P 112 L 3 Comment # 487
 Thaler, Pat Agilent Technologies
 Comment Type TR Comment Status X
 The contents of this register seems to duplicate some but not all of the values that are in the 10GBASE-T and 1000BASE-T technology message. It isn't clear how this is to be used. What happens if there is a discrepancy between this register and the registers loaded for the extended next page exchange of the technology message? Since this register contains only some of the information how can it allow a power up or reset to a normal operational state without management intervention?
 SuggestedRemedy
 Remove this register or clarify its use.
 Proposed Response Response Status O

Cl 45 SC 45.2.7.10.4 P 113 L 1-6 Comment # 238
 Shimon Muller Sun Microsystems, Inc.
 Comment Type T Comment Status D
 See my comment against 45.2.7.10.
 SuggestedRemedy
 Delete this sub-clause.
 Proposed Response Response Status O

Cl 45 SC 45.2.7.10.4 P 113 L 3 Comment # 461
 McClellan, Brett Solarflare
 Comment Type E Comment Status X
 The wording in this paragraph is not worded to indicate that this is a control bit. The paragraph reads as if this is a status bit only.
 SuggestedRemedy
 Re-word 45.2.7.10.4 to indicate that this bit controls whether or not the PHY advertises during auto-negotiation whether it is 10BASE-T full-duplex capable (and not simply reporting this ability to the host).
 Suggested wording: "Bit 7.32.12 is to be used to select whether or not auto-negotiation will advertise the ability to operate as a 10GBASE-T full-duplex PHY..."
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC 45.2.7.11 P 113 L 20 Comment # 488
 Thaler, Pat Agilent Technologies

Comment Type TR Comment Status X

With this register as with the AN control register, there seems to be an odd split between whether the auto-negotiation for 10GBASE-T operation is controled and understood by the hardware or by the manager.

The management interaction determines what to send as a next page and reads the next page, but this status register contains data that is read only and must have been extracted from the received extended next page or from the combination of the receeived and sent next pages.

SuggestedRemedy

Clarify who is doing what. Either rewrite auto-negotiation management to enable a total hardware bring-up of the link explaining where hardware gets the bits that aren't in the AN control register including the 1000BASE-T bits or remove the items that contradict a management controlled bring-up.

If the expectation is that the auto-negotiation goes on auto-pilot for the base page and the firs extended next page (the 10GBASE-T and 1000BASE-T technology message) and that the ALD XNP register is used only after that, then state that clearly.

Proposed Response Response Status O

Cl 45 SC 45.2.7.11 P 113 L 29 Comment # 112
 David V James JGG

Comment Type E Comment Status D

DVJ-112
 Small values are supposed to be centered.

SuggestedRemedy

Center the following columns:
 Bit(s), R/W

Proposed Response Response Status O

Cl 45 SC 45.2.7.11 P 113 L 29 Comment # 111
 David V James JGG

Comment Type T Comment Status D

DVJ-111
 This inconsistency is very confusing. Most lists start from 0. VERY few lists count in a nonmonotonic fashion, like this one does.

SuggestedRemedy

Here and throughtout, list the 0 value first and start counting upwards.

Proposed Response Response Status O

Cl 45 SC 45.2.7.11 P 113 L 29 Comment # 113
 David V James JGG

Comment Type E Comment Status D

DVJ-113
 Its unclear if this is an ROLLSC value.

SuggestedRemedy

Put commas, so this looks like:
 RO, LL, SC

Proposed Response Response Status O

Cl 45 SC 45.2.7.11 P 113 L 41-4 Comment # 239
 Shimon Muller Sun Microsystems, Inc.

Comment Type T Comment Status D

See my comment against 45.2.7.10.

SuggestedRemedy

Delete this bit from Table 45-125.

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC 45.2.7.11 P114 L7 Comment # 412
 McConnell, Mike KeyEye Communicatio
 Comment Type E Comment Status X
 Table 45-125 description columns contain "shalls"
 SuggestedRemedy
 Remove "shall" from table and add to appropriate subclauses (45.2.7.11.10 & 45.2.7.11.11).
 Also add to PICS
 Proposed Response Response Status O

Cl 45 SC 45.2.7.11.5 P114 L 53-5 Comment # 240
 Shimon Muller Sun Microsystems, Inc.
 Comment Type T Comment Status D
 See my comment against 45.2.7.10.
 SuggestedRemedy
 Delete this sub-clause.
 Proposed Response Response Status O

Cl 45 SC 45.2.7.12 P116 L 14 Comment # 115
 David V James JGG
 Comment Type E Comment Status D
 DVJ-115
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Bit(s), R/W
 Proposed Response Response Status O

Cl 45 SC 45.2.7.12 P116 L 22 Comment # 114
 David V James JGG
 Comment Type T Comment Status D
 DVJ-114
 This inconsistency is very confusing. Most lists start from 0. VERY few lists count in a
 nonmonotonic fashion, like this one does.
 SuggestedRemedy
 Here and throughtout, list the 0 value first and start counting upwards.
 Proposed Response Response Status O

Cl 45 SC 45.2.7.2.1 P106 L 55 Comment # 482
 Thaler, Pat Agilent Technologies
 Comment Type TR Comment Status X
 This bit doesn't make sense and there are multiple problems with the note.
 The problems:
 1) If support for the register requires extended next page ability, then why have a bit in the
 register to indicate extended next page ability?
 2) Notes are non-binding. If one must support extended next page ability to have this MMD,
 that should be stated as part of 45.2.7 rather than in a note.
 3) "use of" extended next page can't be the gating factor in having the registers since that use
 depends on the result of the negotiation and the AN MMD shouldn't disappear when the link
 partner doesn't negotiates non-extended next pages.
 SuggestedRemedy
 Move the content of the note to 45.2.7 as part of the clause, not a note and replace "use of"
 with "support for"
 Delete Bit 45.2.7.2.1 or if there is some reason to retain it. Add that 1 is the only legal value.
 Proposed Response Response Status O

Cl 45 SC 45.2.7.2.1 P107 L 4 Comment # 101
 David V James JGG
 Comment Type E Comment Status D
 DVJ-101
 Nonstandard table lines.
 SuggestedRemedy
 Thin on the outside.
 Very-thin on the inside.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC 45.2.7.2.1 P 107 L 6 Comment # 102
 David V James JGG
 Comment Type E Comment Status D
 DVJ-102
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Bit(s), R/W
 Proposed Response Response Status O

Cl 45 SC 45.2.7.2.1 P 107 L 8 Comment # 100
 David V James JGG
 Comment Type T Comment Status D
 DVJ-100
 This inconsistency is very confusing. Most lists start from 0. VERY few lists count in a nonmonotonic fashion, like this one does.
 SuggestedRemedy
 Here and throughout, list the 0 value first and start counting upwards.
 Proposed Response Response Status O

Cl 45 SC 45.2.7.2.3 P 107 L 42 Comment # 582
 Ilango Ganga Intel
 Comment Type E Comment Status X
 "The Page Received bit shall be reset to logic Zero on a read of the LD base page register (Register 7.1)". Register 7.1 is actually AN status register and not LD base page register. Also since this bit is also a copy of expansion register 6.1, hence reading register 6 will have the same effect as reading (AN stauts Register 7.1)
 SuggestedRemedy
 Fix the appropriate line to read as "AN Status register (Register 7.1)" Also add a note to specify Reading expansion register 6 will also clear the bit.
 Proposed Response Response Status O

Cl 45 SC 45.2.7.2.3 P 107 L 43 Comment # 413
 McConnell, Mike KeyEye Communicatio
 Comment Type E Comment Status X
 The wrong register and register name is referenced (AN LD base page register (7.1))
 SuggestedRemedy
 Change reference to 7.16 AN Advertisement Register.
 Proposed Response Response Status O

Cl 45 SC 45.2.7.2.4 P 107 L 50 Comment # 484
 Thaler, Pat Agilent Technologies
 Comment Type TR Comment Status X
 This doesn't make sense.
 7.16 contains the advertised values so its validity shouldn't depend on the completion of auto-negotiation.
 The description of when auto-negotiation is complete is vague and these registers seem unusable if it means what it says. Auto negotiation has many page exchanges. The Base page registers must be valid when the base page exchange is complete because one will want to read their contents before deciding on the next page exchange.
 SuggestedRemedy
 There should be a bit for base page exchange complete and another bit for next page exchange complete. For the next page exchange complete bit, one will have to provide a mechanism for clearing it to enable use for a further page exchange. Perhaps it should be cleared when the next page registers have been read.
 I know you leveraged this bit, but I went back and looked at 22 and it didn't clarify the operation. 22 may have a maintenance issue too.
 Proposed Response Response Status O

Cl 45 SC 45.2.7.2.7 P 108 L 21 Comment # 415
 McConnell, Mike KeyEye Communicatio
 Comment Type E Comment Status X
 AN Reset should reset this bit.
 SuggestedRemedy
 Add text indicating that the bit 7.1.2 shall be cleared upon AN Reset. Add to PICS.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC 45.2.7.6 P 109 L 1 Comment # 677
 Law, David 3Com

Comment Type T Comment Status X

If the Auto-Negotiation advertisement register (Register 4) is present, (see 28.2.4.1.3), reads to the AN advertisement register (7.16) will report the value of the Auto-Negotiation advertisement register (Register 4). Any write to the AN advertisement register (7.16) will also cause a write to also occur to the Auto-Negotiation advertisement register (Register 4).

There is no text here, or in subclause 28.3, to describe what happens if an implementation chooses to implement both the Clause 22 register set (Note 1) and the Clause 45 register set and therefore has both register bits 4.15:0 and 7.16.15:0 present. What happens when these registers have different values, what is the Figure 28-15 to 28-18 state machine variable mr_adv_ability[16:1] to be set to, the Clause 22 value or the Clause 45 value.

There would seem to be various options here but I would assume that what is intended is that a write to either of these register will be reflected in the other - the text 'This register is a copy of the Advertisement register 4 described in section 28.2.4.1.3 (See Table 45-120).' seems to imply this however the text doesn't seem to make it clear what to do when the Clause 22 interface is not present.

Note 1 - A Clause 22 register set in the same device as a Clause 45 register set can be accessed through the Clause 45 electrical interface by using the Clause 22 ST encoding of 01 instead of the Clause 45 ST encoding 00.

SuggestedRemedy

Suggest one possibility would be that the text 'This register is a copy of the Advertisement register 4 described in section 28.2.4.1.3 ' be deleted at the following paragraph be added to the end of subclause 45.2.7.6:

If the Auto-Negotiation advertisement register (Register 4) is present, (see 28.2.4.1.3), then this register is a copy of the Auto-Negotiation advertisement register (Register 4). In this case reads to the AN advertisement register (7.16) will report the value of the Auto-Negotiation advertisement register (Register 4), writes to the AN advertisement register (7.16) will cause a write to occur to the Auto-Negotiation advertisement register (Register 4).

Proposed Response Response Status O

Cl 45 SC 45.2.7.6 P 109 L 15 Comment # 103
 David V James JGG

Comment Type E Comment Status D

DVJ-103
 Small values are supposed to be centered.

SuggestedRemedy
 Center the following columns:
 Bit(s), R/W

Proposed Response Response Status O

Cl 45 SC 45.2.7.6 P 109 L 7 Comment # 405
 McConnell, Mike KeyEye Communicatio

Comment Type E Comment Status X
 bit 7.16.14 mentioned in text is not included in table 45-120.

SuggestedRemedy
 Correct table accordingly

Proposed Response Response Status O

Cl 45 SC 45.2.7.6 P 109 L 8 Comment # 406
 McConnell, Mike KeyEye Communicatio

Comment Type E Comment Status X
 Last sentence read, "The Technology Ability Field (7.16.12:5) is set based on the values.

SuggestedRemedy
 Remove "values" are replace with text description or reference to relevant subclause that defines the values.

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC 45.2.7.7 P 110 L 12 Comment # 104
 David V James JGG
 Comment Type E Comment Status D
 DVJ-104
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Bit(s), R/W
 Proposed Response Response Status O

Cl 45 SC 45.2.7.7 P 110 L 18 Comment # 485
 Thaler, Pat Agilent Technologies
 Comment Type TR Comment Status X
 In clause 28, the extended next page ability bit (7.19.12 here) was moved out of the technology ability field, so you will have to match that here.
 SuggestedRemedy
 put a separate entry in the table for extended next page ability to match it to Clause 28.
 Proposed Response Response Status O

Cl 45 SC 45.2.7.7 P 110 L 18 Comment # 678
 Law, David 3Com
 Comment Type T Comment Status X
 The Technology ability field is now only 7 bits with an additional XNP bit. Assuming we are taking the approach of replacing ability bit A7 rather than considering XNP as just another ability.
 SuggestedRemedy
 Based on bit A7 being replaced by XNP 'Technology ability field' needs to be reduced to 7 bits, a new XNP bit added.
 Proposed Response Response Status O

Cl 45 SC 45.2.7.8 P 110 L 30 Comment # 407
 McConnell, Mike KeyEye Communicatio
 Comment Type E Comment Status X
 Sentence begins with "On power-up ..."
 SuggestedRemedy
 Change to read, "On power-up or reset ..." and correct the PICS accordingly (AM34)
 Proposed Response Response Status O

Cl 45 SC 45.2.7.8 P 110 L 38 Comment # 580
 Ilango Ganga Intel
 Comment Type E Comment Status X
 Table 45-122 The AN LD XNP transmit register is a three register set (7.22, 7.23, 7.24) which is formatted as lowest number register in higher row in the table. Other multi-register sets in Clause 45(example Table 48-75) are tabulated with lowest numbered register in the lowest row in the table. To be consistent reformat table 45-122 to read as {7.24, 7.23, 7.22}lowest numbered register in lowest row in table etc.,
 SuggestedRemedy
 To be consistent with other tables in Clause 45 (example Table 48-75) reformat Table 45-122 to read as {7.24, 7.23, 7.22} lowest numbered register in lowest row in table and so on..
 Proposed Response Response Status O

Cl 45 SC 45.2.7.8 P 110 L 39 Comment # 105
 David V James JGG
 Comment Type E Comment Status D
 DVJ-105
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Bit(s), R/W
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC 45.2.7.9 P 111 L 1 Comment # 486
 Thaler, Pat Agilent Technologies
 Comment Type TR Comment Status X
 Since this is a multiple register set, there needs to be a way to ensure that it is frozen so that the three reads are returning a consistent set - the values from a single next page exchange.
 SuggestedRemedy
 Specify that reading one of the registers, e.g. 27 causes the other two values to be latched for reading. See the multi-register counters for an example of the text.
 Proposed Response Response Status O

Cl 45 SC 45.2.7.9 P 111 L 14 Comment # 581
 Ilango Ganga Intel
 Comment Type E Comment Status X
 Table 45-123 The AN LD XNP ability register is a three register set (7.25, 7.26, 7.27) which is formatted as lowest number register in higher row in the table. Other multi-register sets in Clause 45(example Table 48-75) is tabulated with lowest numbered register first in the lowest row in the table. To be consistent reformat table 45-122 to read as {7.27, 7.26, 7.25} lowest numbered register in lowest row in table etc.,
 SuggestedRemedy
 To be consistent with other tables in Clause 45 (example Table 48-75) reformat rows in Table 45-123 to read as {7.27, 7.26, 7.25} lowest numbered register in lowest row in table and so on..
 Proposed Response Response Status O

Cl 45 SC 45.5.10.1 P 119 L 38 Comment # 118
 David V James JGG
 Comment Type E Comment Status D
 DVJ-118
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Support
 Proposed Response Response Status O

Cl 45 SC 45.5.10.2 P 120 L 7 Comment # 119
 David V James JGG
 Comment Type E Comment Status D
 DVJ-119
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Support
 Proposed Response Response Status O

Cl 45 SC 45.5.10.3 P 121 L 8 Comment # 120
 David V James JGG
 Comment Type E Comment Status D
 DVJ-120
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Support
 Proposed Response Response Status O

Cl 45 SC 45.5.10.3 P 123 L 40 Comment # 411
 McConnell, Mike KeyEye Communicatio
 Comment Type E Comment Status X
 subclause references are wrong for MM47-MM50
 SuggestedRemedy
 change 45.2.1.11.1 to correct subclause
 Proposed Response Response Status O

Cl 45 SC 45.5.10.6 P 127 L 7 Comment # 408
 McConnell, Mike KeyEye Communicatio
 Comment Type E Comment Status X
 All references to subclause 45.2.1.71
 SuggestedRemedy
 change 45.2.1.71 to 45.2.3
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC 45.5.10.6 P 127 L 7 Comment # 121
 David V James JGG
 Comment Type E Comment Status D
 DVJ-121
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Support
 Proposed Response Response Status O

Cl 45 SC 45.5.10.9 P 132 L 16 Comment # 123
 David V James JGG
 Comment Type E Comment Status D
 DVJ-123
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Support
 Proposed Response Response Status O

Cl 45 SC 45.5.10.8 P 132 L 1 Comment # 574
 Booth, Brad Intel
 Comment Type E Comment Status X
 *AT is not required with *AN.
 SuggestedRemedy
 Delete.
 Proposed Response Response Status O

Cl 45 SC 45.5.10.9 P 135 L 1 Comment # 328
 Dawe, Piers Agilent
 Comment Type E Comment Status D
 Two blank pages
 SuggestedRemedy
 Remove them
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 45 SC 45.5.10.8 P 132 L 8 Comment # 122
 David V James JGG
 Comment Type E Comment Status D
 DVJ-122
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Support
 Proposed Response Response Status O

Cl 45 SC 45.5.8 P 118 L 5 Comment # 116
 David V James JGG
 Comment Type E Comment Status D
 DVJ-116
 The title of this subclause is too long, which forces error-prone manual manipulation during the otherwise automatic TOC generation.
 SuggestedRemedy
 Change the title to:
 55.12 Protocol implementation conformance statement (PICS) proforma for Clause 45
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC 45.5.9.2 P 118 L 40 Comment # 573
 Booth, Brad Intel
 Comment Type E Comment Status X
 Subclause lists 802.3ae-2002 as the referenced specification.
 SuggestedRemedy
 Change to be 802.3an-200x in both locations.
 Proposed Response Response Status O

Cl 45 SC 45-3 P 87 L 46 Comment # 260
 Dove, Daniel HP ProCurve Networki
 Comment Type ER Comment Status D
 THP is an undefined acronym. This might create confusion for a reader of the document.
 SuggestedRemedy
 Define THP (Tomlinson Harashima Precoding) in advance of using it.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 45 SC 45.5.9.3 P 119 L 12 Comment # 409
 McConnell, Mike KeyEye Communicatio
 Comment Type E Comment Status X
 refers to wrong subclause
 SuggestedRemedy
 change subclause reference to 45.2.3
 Proposed Response Response Status O

Cl 45 SC Table 45-8 P 88 L 20 Comment # 622
 Grow, Robert Intel
 Comment Type ER Comment Status X
 Needs a change instruction and an editors note.
 SuggestedRemedy
 45.2.1.6 10G PMA/PMD control 2 register (Register 1.7)
 Change the Table 45-7 as follows:
 Editor's Note (to be removed prior to publication): Table 45-7 is also being modified by P802.3an and P802.3ap. If P802.3an is not published prior to or simultaneous with P802.3ap the line for bits 1.7.3:0 value 1001 should be "Reserved". If P802.3ap is not published prior to or simultaneous with P802.3aq bits 1.7.3:0 values 1011 and 1010 should be "Reserved". Other change markings are against P802.3REVam, and may need to be modified based on publication order of current amendment projects, with edit reference changed to latest amendment.
 Define bits 1.7.3:0 values for 802.3aq (with underline)
 1 0 00 = 10GBASE-KR PMA/PMD type
 Proposed Response Response Status O

Cl 45 SC 45.5.9.3 P 119 L 28 Comment # 410
 McConnell, Mike KeyEye Communicatio
 Comment Type E Comment Status X
 Auto Neg missing from table of capabilities
 SuggestedRemedy
 Add Auto Neg as Optional status with proper subclause
 Proposed Response Response Status O

Cl 45 SC Table 45-1 P 84 L 8 Comment # 620
 Grow, Robert Intel
 Comment Type ER Comment Status X
 Item like this table need a clearer explanation for the publication editor to avoid deletion of changes from other amendments.
 SuggestedRemedy
 Editor's Note (to be removed prior to publication): Table 45-1 is also being modified by P802.3ap. If P802.3an is not published prior to or simultaneous with P802.3ap, the Reserved Device Addresses shown here that are defined by P802.3ap should be preserved in this table
 Insert similar targeted notes also in for Table 45-2, 45-3, etc.
 Proposed Response Response Status O

Cl 45 SC 45.5.9.3 P 119 L 6 Comment # 117
 David V James JGG
 Comment Type E Comment Status D
 DVJ-117
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Support
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC Table 45-119 P 107 L 7 Comment # 483
 Thaler, Pat Agilent Technologies
 Comment Type E Comment Status X
 LD is used here (and LP is used earlier) but they don't appear in the acronym list and don't even appear in parens after the spelled out term.
 SuggestedRemedy
 Add to acronym list and before the first time they are used independently, use put local device (LD) and link partner (LP) in the text.
 Proposed Response Response Status O

Cl 45 SC Table 45-123 P 111 L 18 Comment # 106
 David V James JGG
 Comment Type E Comment Status D
 DVJ-106
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Bit(s), R/W
 Proposed Response Response Status O

Cl 45 SC Table 45-12 P 90 L 11 Comment # 625
 Grow, Robert Intel
 Comment Type ER Comment Status X
 This is Table 45-11 in REVam.
 SuggestedRemedy
 Correct table number.
 Proposed Response Response Status O

Cl 45 SC Table 45-2 P 85 L 10 Comment # 65
 David V James JGG
 Comment Type E Comment Status D
 DVJ-65
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Bit(s), R/W
 Proposed Response Response Status O

Cl 45 SC Table 45-122 P 110 L 47 Comment # 680
 Law, David 3Com
 Comment Type T Comment Status X
 As discussed in my comment against Figure 28-13, the inclusion of the Message Page bit, with a reference to 28.2.3.4 where 0 = Unformatted Page and 1 = Message Page seems odd in the Extended Next Page definition since by definition it is not a Unformatted or Message Page and is capable of carrying both a Message Code and up to two Unformatted Codes.
 The same comment applies to Table 45-123.
 SuggestedRemedy
 Remove the Message Page bit and merge 7.22.13 with 7.22.14 so that both are reserved bits
 Proposed Response Response Status O

Cl 45 SC Table 45-3 P 87 L 44 Comment # 621
 Grow, Robert Intel
 Comment Type TR Comment Status X
 Why the skip to register number 129? The registers start with 0. Why is 802.3ap starting at a decimal register number (150). Let's get some consistency.
 SuggestedRemedy
 If a binary number is desired, then 128 is the place to start.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 45 SC Table 45-50 P L Comment # 254
 Szczepanek, Andre Texas Instruments
 Comment Type E Comment Status D
 In Description column "Link partner setting four" is indicated for all link partner settings
 SuggestedRemedy
 replace four with corresponding number from the name column
 Proposed Response Response Status O

Cl 45 SC Table 45-50 P91 L 34 Comment # 477
 Thaler, Pat Agilent Technologies
 Comment Type E Comment Status X
 All of the bits say "setting four" in the description for the 4 bits for link partner and the 4 bits for PMA
 SuggestedRemedy
 Shouldn't Link Partner THP 3 setting say "setting three" and so on for the other bits?
 Also 7 of the description lines omit "THP" while the others include it. Please insert it for clarity and consistency.
 Proposed Response Response Status O

Cl 45 SC Table 45-8 P 88 L 22 Comment # 623
 Grow, Robert Intel
 Comment Type ER Comment Status X
 This is table 45-7 in REVam and I don't think has changed.
 SuggestedRemedy
 Correct table number.
 Proposed Response Response Status O

Cl 55 SC P L Comment # 14001
 Bennett, Michael LBNL
 Comment Type T Comment Status D D1.4 cabling
 Clause 55 includes alien crosstalk and extended frequency performance for the 10GBASE-T link segment. As with 1000BASE-T, the link segment specification of 55.7 must be supplemented with an Annex addressing the additional cabling considerations for 10GBASE-T to facilitate the end-user deployment.
 SuggestedRemedy

Include in 802.3 an Annex to Clause 55 addressing additional cabling design guidelines for 10GBASE-T; "Annex 55B - Additional cabling design guidelines for 10GBASE-T".
 Boilerplate Proposal:
 Annex 55B: Additional cabling design guidelines:
 This annex provides additional cabling guidelines for 10GBASE-T deployment on balanced copper cabling systems as specified in 55.7.
 These guidelines are intended to supplement those in Clause 55.
 The 10GBASE-T PHY is designed to operate four pairs of balanced cabling, as specified in ISO/IEC 11801 Edition 2 with appropriate augmentation as specified in 55.7. It is recommended that the guidelines (proposed) in ANSI/TIA TSB 155 and ANSI/TIA 568-B.2-10 and ISO/IEC 11801 Edition 2.1 be considered before the installation of 10GBASE-T equipment for any cabling system.

55B.1 Alien crosstalk - coupling between link segments
 55B.1.1 Cabling Topologies
 +++point-to-point
 +++asymmetrical
 +++connector co-location
 55B.1.2 Bundled or hybrid cables
 55B.1.3 Field Testing
 55B.1.4 Mitigation
 +++patch cord
 +++cabling unbundling
 +++connector adjacency
 55B.2 Link segment - extrapolated frequency performance
 55B.2.1 Mitigation
 +++cross-connect versus interconnect
 55B.2.1 Field testing
 Proposed Response Response Status C

This was resubmitted from D1.4 by the editor.
 This will be an informative annex and can be added during working group ballot.

IEEE P802.3an Comments

Cl 55 SC P145 L Comment # 641
 Yagil, Ariel Texas Instruments
 Comment Type E Comment Status X
 Figure 55-4: according to 55.2, the management function interface is specified in clause 45, not 28
 SuggestedRemedy
 Change "(Clause 28)" to "(Clause 45)"
 Proposed Response Response Status O

Cl 55 SC P171 L30 Comment # 664
 Yagil, Ariel Texas Instruments
 Comment Type E Comment Status X
 In Figure 55-14, the label near the transition between state START_TIMER and LFER_TEST_LF ("lfer_test_lf") is not a condition and does not add any information
 SuggestedRemedy
 change the label from "lfer_test_lf" to "UCT"
 Proposed Response Response Status O

Cl 55 SC P172 L Comment # 665
 Yagil, Ariel Texas Instruments
 Comment Type T Comment Status X
 Figure 55-15 describe only a portion of the PHY transmit state machine: the 64B/65B encoder (ENCODE function). It does not include functions such as the aggregation of 50 65B blocks, LDPC encode, effect of tx_mode signal etc. Note the the figure is based on 10GBASE-R spec in which (unlike 10GBASE-T) the ENCODE function is most of the functionality of the PCS transmit process
 SuggestedRemedy
 Either extend the state machine to cover more PCS functionality, or clarify that the the figure cover only the 64B/65B encoding
 Proposed Response Response Status O

Cl 55 SC P173 L Comment # 666
 Yagil, Ariel Texas Instruments
 Comment Type T Comment Status X
 Figure 55-16 describe only a portion of the PHY receive state machine: the 64B/65B decoder (DECODE function). It does not include functions such as the aggregation of 50 65B blocks, LDPC decode, CRC8 check etc. Note the the figure is based on 10GBASE-R spec in which (unlike 10GBASE-T) the DECODE function is most of the functionality of the PCS receive process
 SuggestedRemedy
 Either extend the state machine to cover more PCS functionality, or clarify that the the figure cover only the 64B/65B decoding
 Proposed Response Response Status O

Cl 55 SC P183 L Comment # 445
 Wael William Diab Cisco Systems
 Comment Type E Comment Status X
 Please delete extra pages like 183 and 184.
 SuggestedRemedy
 delete extra pages like 183 and 184.
 Proposed Response Response Status O

Cl 55 SC P194 L Comment # 449
 Wael William Diab Cisco Systems
 Comment Type E Comment Status X
 Please delete extra pages like 194.
 SuggestedRemedy
 delete extra pages like 194.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 1.3.1 P 141 L 13 Comment # 253
 Szczepanek, Andre Texas Instruments
 Comment Type E Comment Status D
 The sentence "1723 bits are encoded using a systematic ... adds 325 LDPC check bits" is out of sequence, and is a fragment of the sentence that starts on line 16 that contains exactly the same text.
 SuggestedRemedy
 remove line 13
 Proposed Response Response Status O

Cl 55 SC 3.17.2.4 P 168 L 40 Comment # 255
 Szczepanek, Andre Texas Instruments
 Comment Type E Comment Status D
 bad reference :
 "The DECODE function shall decode the block as specified in 55.3.16".
 55.3.16 is the side-stream scrambler clause.
 SuggestedRemedy
 "The DECODE function shall decode the block as specified in 55.3.15"
 Proposed Response Response Status O

Cl 55 SC 4.3.1 P 172 L 12 Comment # 14002
 Reviriego, Pedro Agere Systems
 Comment Type TR Comment Status D thp
 The draft specifies a fixed set of both IIR and FIR THP responses. It has been shown by a number of contributors that fixing the precoder response results in a significant performance loss for some channel configurations.
 It also benefits some specific receiver configurations, which is unfair.
 We propose to maintain the present fixed coefficients scheme and, in addition, to include the option to program the precoder from the receiver.
 The receiver could use alternative pre-calculated coefficients or it could dynamically calculate the coefficients.
 SuggestedRemedy
 Adopt a programmable solution as per presentation Kota_1_0305.pdf
 Proposed Response Response Status C

Resubmitted from D1.4 by Editor.

Cl 55 SC 4.3.1 P 172 L 39 Comment # 14003
 Vareljian, Albert KeyEye Communicatio
 Comment Type T Comment Status D D1.4 thp
 Coefficient entries in the THP sets A(1), A(2) and A(3) represent 7-bit values, whereas the 802.3an TF adopted requirement is 8-bit.
 SuggestedRemedy
 Replace coefficient entries in the THP sets A(1), A(2) and A(3) with 8-bit representation as follows:

$$A(1) = [1.78125 \ 1.390625 \ 0.515625 \ -0.203125 \ -0.65625 \ -0.875 \ -0.90625 \ -0.796875 \ 0.609375 \ -0.359375 \ -0.140625 \ -0.03125 \ 0 \ 0 \ 0 \ 0]$$

$$A(2) = [1.265625 \ 0.375 \ -0.4375 \ -0.78125 \ -0.765625 \ -0.5 \ -0.140625 \ 0 \ 0 \ 0 \ 0 \ 0 \ 0 \ 0 \ 0 \ 0]$$

$$A(3) = [0.59375 \ -0.375 \ -0.625 \ -0.515625 \ -0.25 \ 0.09375 \ 0.078125 \ 0 \ 0 \ 0 \ 0 \ 0 \ 0 \ 0 \ 0 \ 0]$$
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Resubmitted by editor from previous meeting

Cl 55 SC 4.3.1 P 178 L 59 Comment # 542
 Zimmerman, George Solarflare Communicat
 Comment Type TR Comment Status X
 Text does not capture the full range of required supported transmit powers agreed to earlier. (0 to 14 dB)
 SuggestedRemedy
 Insert "The transmitter shall be capable of up to at least 14 dB of power backoff in 2 dB steps" in line 1 page 179, after "as shown in Table 55-2".
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 45.2.7.10 P 114 L 514 Comment # 297
 Reviriego, Pedro Agere Systems

Comment Type E Comment Status D
 Bits 7.33.6 and 7.33.5:4 have not been updated to reflect the changes in section 55.4.3.1. The same applies to bits 7.34.5 and 7.34:4:3.

The text in sections 45.7.11.9 through 45.7.11.11 and 45.7.12.1 and 45.7.12.2 has not been updated to reflect the changes in section 55.4.3.1.

SuggestedRemedy

Remove those bits as they are no longer needed.

Remove the text in those sections.

Proposed Response Response Status O

Cl 55 SC 5.2 P 186 L 27 Comment # 540
 Zimmerman, George Solarflare Communicat

Comment Type T Comment Status X
 It is unclear what signal a SLAVE PHY in test mode 3 is loop timing from, and, the text states that test mode 1 puts signal on all 4 pairs, in conflict with figure 55-22.

SuggestedRemedy

Clarify figure 55-22 to include deletion of signal on pair D, (preferred) or redefine test mode 1 on line 28 to indicate that a PMA shall transmit only on pairs A, B, and C.

Specifically call out that a SLAVE PHY in test mode 3 is used with a MASTER in test mode 1. Reference figure 55-22 here.

Proposed Response Response Status O

Cl 55 SC 5.2 P 187 L 3 Comment # 526
 Zimmerman, George Solarflare Communicat

Comment Type E Comment Status X
 Typo: the register referenced is 7.9 whereas it should be 1.132

SuggestedRemedy

Change reference from register 7.9 to 1.132

Proposed Response Response Status O

Cl 55 SC 5.2 P 187 L 9 Comment # 673
 Sandeep, Gupta Teranetics

Comment Type T Comment Status X
 Table 55-4: Two tone testing better than single tone testing for several reasons, so modify the table for just two-tone testing down to low frequencies

SuggestedRemedy

Change the table 55-4 with the single tone entries deleted and the two tone frequencies to be the following 6 pairs for the 6 digital words as given in the table

800e6/1024 * [(13, 17), (47, 53), (101, 103), (179, 181), (277, 281), (397, 401)]

Proposed Response Response Status O

Cl 55 SC 55.1 P 137 L 12 Comment # 329
 Dawe, Piers Agilent

Comment Type ER Comment Status D
 Problem with referring to different versions of ISO/IEC 11801. We refer to them by date, while IEC may use edition numbers. ISO/IEC 11801 Edition 2 and ISO/IEC 11801 Edition 2.1 aren't in 1.4 references

SuggestedRemedy

Sort out. Suggest include the edition numbers in 1.4 but use the dates in 55 if possible, as elsewhere in 802.3.

Proposed Response Response Status O

Cl 55 SC 55.1.1 P 137 L 26 Comment # 425
 Daines, Kevin World Wide Packets

Comment Type E Comment Status X
 The list of objectives has inconsistent punctuation (some have periods, other do not).

SuggestedRemedy

Please make consistent. Suggest no periods.

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.1.1 P 137 L 35 Comment # 503
 Baumer, Howard Broadcom
 Comment Type TR Comment Status X
 What does "at least 55-100m" mean? Is the min distance objective 55 or 100 or something in between? Or isn't this the same as "at least 55m" since if someone can build a 100m cable that meets the specs then they have met "at least 55m" requirement.
 SuggestedRemedy
 change "at least 55-100m" to "55m"
 Proposed Response Response Status O

Cl 55 SC 55.1.1 P 137 L 35 Comment # 250
 Brown, Kevin Broadcom
 Comment Type TR Comment Status D length
 Subclause 55.1.1 Objective f) is imprecisely specified. Specifying "at least 55 m to 100 m" does not make sense.
 The minimum specified distance should be essentially zero distance. If a PHY that works over "at least 55 m" is compliant, then any distance specification is redundant. "at least 55 m to 100 m" has no meaningful difference from "at least 55 m to 90 m" or "at least 55 m to 110 m", if 55 m is the minimum requirement
 SuggestedRemedy
 f) Define a single 10Gb/s PHY that would support links of 0.1 m to 55 m on four pair balanced copper cabling.
 Proposed Response Response Status O

Cl 55 SC 55.1.1 P 137 L 35 Comment # 388
 Beck, Michael Alcatel Bell n.v.
 Comment Type ER Comment Status D
 What exactly is meant by "links of at least 55m to 100m"? Is this an objective that contains a minimum and a maximum reach? Or is it a range of minima, from which a single value must be selected depending on some hidden variable? Similar unclear wording on page 201, line 28.
 SuggestedRemedy
 Clarify: links of at least 55m and at most 100m, or whatever else was intended by the Task Force.
 Proposed Response Response Status O

Cl 55 SC 55.1.1 P 137 L 37 Comment # 426
 Daines, Kevin World Wide Packets
 Comment Type ER Comment Status X
 Not trying to change objectives here, but "MAC Client service Interface" should be "MAC client service interface"
 SuggestedRemedy
 Change per comment
 Proposed Response Response Status O

Cl 55 SC 55.1.1 P 137 L 41 Comment # 376
 Alan Flatman LAN Technologies
 Comment Type E Comment Status D
 "EMC limits" generally relate to outgoing disturbance, rather than immunity tests. "EMC requirements" would more accurately refer to both outgoing disturbance and immunity tests. This would be consistent with the change made in March 2005 to clause 55.9.5, which now refers to EMC rather than RF emission.
 SuggestedRemedy
 Change "EMC limits" to "EMC requirements".
 Proposed Response Response Status O

Cl 55 SC 55.1.1 P 137 L 42 Comment # 331
 Dawe, Piers Agilent
 Comment Type T Comment Status D
 Not a feasible objective!
 SuggestedRemedy
 Change 'Bit Error Rate' to 'bit error ratio'. Add a full stop at the end of the line while we are here.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.1.1 P 137 L 42 Comment # 282
 Reviriego, Pedro Agere Systems
 Comment Type E Comment Status D
 The draft should include the following objective:
 l) Comply with the specifications for the XGMII (Clause 46)
 SuggestedRemedy
 Include the above objective
 Proposed Response Response Status O

Cl 55 SC 55.1.2 P 138 L 5 Comment # 427
 Daines, Kevin World Wide Packets
 Comment Type ER Comment Status X
 I'd hate for the text "connect one Clause 4 Media Access Control (MAC) layer to the medium" to be construed as avoiding or precluding the 4A MAC. Other PHY clauses use different language. See 58.1.2 for an example.
 SuggestedRemedy
 Per comment
 Proposed Response Response Status O

Cl 55 SC 55.1.1 P 137 L 42 Comment # 330
 Dawe, Piers Agilent
 Comment Type ER Comment Status D
 Gratuitous Capital Syndrome
 SuggestedRemedy
 Change 'Bit Error Rate' to 'bit error rate' - but see another comment.
 Proposed Response Response Status O

Cl 55 SC 55.1.2 P 138 L 6 Comment # 126
 David V James JGG
 Comment Type E Comment Status D
 DVJ-126
 Misleading capitalization
 SuggestedRemedy
 Clause 4 Media Access Control (MAC)
 ==>
 Clause 4 Media access control (MAC)
 Proposed Response Response Status O

Cl 55 SC 55.1.2 P 138 L 27 Comment # 283
 Reviriego, Pedro Agere Systems
 Comment Type E Comment Status D
 Change 10GBaseT to 10Gb/s
 SuggestedRemedy
 Include the above change
 Proposed Response Response Status O

Cl 55 SC 55.1.3 P 138 L 42 Comment # 332
 Dawe, Piers Agilent
 Comment Type ER Comment Status D
 No indication of what you mean by hybrid: dictionary definition 'a composite of mixed origin' isn't enough information to understand this use of the word.
 SuggestedRemedy
 Explain, amplify, use another term, or add a definition to 1.4.
 Proposed Response Response Status O

Cl 55 SC 55.1.2 P 138 L 31 Comment # 124
 David V James JGG
 Comment Type E Comment Status D
 DVJ-124
 Callouts can be ALL CAPS or Some caps, but not both.
 SuggestedRemedy
 Eliminate mixture by converting ALL CAPS to lower case.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.1.3 P 138 L 45 Comment # 125
 David V James JGG
 Comment Type E Comment Status D
 DVJ-125
 Be consistent with acronyms.
 SuggestedRemedy
 Double Square
 ==>
 double square
 Proposed Response Response Status O

Cl 55 SC 55.1.3 P 138 L 57 Comment # 428
 Daines, Kevin World Wide Packets
 Comment Type E Comment Status X
 Given the current hyphenation, the term "MAS-TER-SLAVE" is a little awkward.
 SuggestedRemedy
 Change to "MASTER-SLAVE" if possible.
 Proposed Response Response Status O

Cl 55 SC 55.1.3 P 138 L 60 Comment # 429
 Daines, Kevin World Wide Packets
 Comment Type E Comment Status X
 "MASTER-SLAVE" in the first part of the paragraph suddenly changed to "MASTER/SLAVE".
 SuggestedRemedy
 Change to "MASTER-SLAVE"
 Proposed Response Response Status O

Cl 55 SC 55.1.3 P 139 L 16 Comment # 127
 David V James JGG
 Comment Type E Comment Status D
 DVJ-127
 Callouts can be ALL CAPS or Some caps, but not both.
 SuggestedRemedy
 Eliminate mixture by converting HYBRID to lower case.
 Proposed Response Response Status O

Cl 55 SC 55.1.3 P 139 L 3 Comment # 637
 Yagil, Ariel Texas Instruments
 Comment Type E Comment Status X
 The sentence: "If loop timing is not implemented, the SLAVE PHY clocking is identical to the MASTER PHY clocking" is not clear
 SuggestedRemedy
 Replace the sentence with: "If loop timing is not implemented, the SLAVE PHY transmit clocking is identical to the MASTER PHY transmit clocking"
 Proposed Response Response Status O

Cl 55 SC 55.1.3 P 139 L 4 Comment # 262
 Dove, Daniel HP ProCurve Networki
 Comment Type E Comment Status D
 Example for Multiport to single-port device provided, but none provided for single-port to single-port or multiport to multiport.
 SuggestedRemedy
 I would recommend providing all three cases or leave out the example as it is insufficient to address its objective. If I were writing recommendations, I would recommend using auto-negotiation and avoid suggesting otherwise.
 Proposed Response Response Status O

Cl 55 SC 55.1.3 P 140 L Comment # 638
 Yagil, Ariel Texas Instruments
 Comment Type T Comment Status X
 The variable pcs_status is communicated between the PCS and the PMA (see Figures 55-18 and 55-19), but is missing from the "PMA service interface". It is not clear if scr_status and pcs_status are identical.
 SuggestedRemedy
 Either add pcs_status line from "PCS receive" to "PHY control" and "Link status" in Figures 55-3, 55-4, 55-5 and 55-17, or merge the variables pcs_status and scr_status
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.1.3 P 141 L 52 Comment # 361
 Kim, Yong Broadcom

Comment Type TR Comment Status D length

Objectives list (55.1.1) states "f) Define a single 10Gb/s PHY that would support links of at least 55 m to 100 m on four pair balanced copper cabling as specified in 55.7". This intro (55.1.3) states (or implies) 100 m. Well, which is it? Please make it consistent to the objectives.

From Draft: "The PMA couples messages from the PCS service interface onto the balanced cabling physical medium via the Medium Dependent Interface (MDI) and provides the link management and PHY Control functions. The PMA provides full duplex communications at 800 Msymbols/s over four pairs of balanced cabling up to 100 m in length.",

SuggestedRemedy

Change length designation on line 52 page 141 to be consistent with objective f) on page 137. For example, replace "four pairs of balanced cabling up to 100m in length." with "four pairs of balanced cabling of at least 55m in length".

Proposed Response Response Status O

Cl 55 SC 55.1.3.1 P 141 L 13 Comment # 639
 Yagil, Ariel Texas Instruments

Comment Type E Comment Status X

The sentence: "1723 bits are encoded using a systematic LDPC(1723,2048) encoder, which adds 325 LDPC check bits" is repeated two lines below

SuggestedRemedy

Delete the sentence

Proposed Response Response Status O

Cl 55 SC 55.1.3.1 P 141 L 44 Comment # 640
 Yagil, Ariel Texas Instruments

Comment Type E Comment Status X

Paragraph 55.2 describes the PCS service interfaces to the management function and PMA, not XGMII

SuggestedRemedy

Change the sentence: "The PCS Service Interfaces to the XGMII and the PMA are abstract message-passing interfaces specified in 55.2." to "The PCS Service Interfaces to the management function and the PMA are abstract message-passing interfaces specified in 55.2."

Proposed Response Response Status O

Cl 55 SC 55.1.3.1 P 141 L 59 Comment # 264
 Dove, Daniel HP ProCurve Networki

Comment Type ER Comment Status D cleanup

Tomlinson Harishima Precoder (THP) finally gets defined, but the horse is out of the barn long ago.

SuggestedRemedy

Per my other comment, move this definition up before the first instance of THP.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.1.3.1 P 141 L 7 Comment # 263
 Dove, Daniel HP ProCurve Networki

Comment Type ER Comment Status D cleanup

The reference to "normal mode" appears before normal mode is described or defined.

SuggestedRemedy

Move lines 39-41 "In addition...interface." up in front of this paragraph.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.1.3.2 P 141 L 52 Comment # 356
 Ali, Ghiasi Broadcom

Comment Type TR Comment Status D length

It is unclear what the length objective for 10GBAS-T 55 m, 100 m, or take your pick 55-100 m

SuggestedRemedy

Ethernet in the premises wiring is the most entrenched standard. Reducing the length from 100 m to something like take a number will cause significant damage to the Ethernet as a standard. Ethernet in the premises wiring means 100m and 10GBASE-T group should not reduce the reach.

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.1.3.2 P 141 L 54 Comment # 128
 David V James JGG
 Comment Type E Comment Status D
 DVJ-128
 Misleading capitalization
 SuggestedRemedy
 Tomlinson Harashima Precoder
 ==>
 Tomlinson Harashima precoder
 Proposed Response Response Status O

Cl 55 SC 55.1.3.2 P 142 L 2 Comment # 430
 Daines, Kevin World Wide Packets
 Comment Type ER Comment Status X
 "Each DAC outputs" should be "Each DAC output"
 SuggestedRemedy
 As per comment
 Proposed Response Response Status O

Cl 55 SC 55.1.3.2 P 142 L 2 Comment # 256
 Marris, Arthur Cadence
 Comment Type E Comment Status D
 Change "Each DAC" to "The DAC"
 SuggestedRemedy
 Change "Each DAC" to "The DAC"
 Proposed Response Response Status O

Cl 55 SC 55.1.4 P 142 L 26 Comment # 431
 Daines, Kevin World Wide Packets
 Comment Type E Comment Status X
 Change "including" to "including:"
 SuggestedRemedy
 As per comment
 Proposed Response Response Status O

Cl 55 SC 55.1.4 P 142 L 47 Comment # 265
 Dove, Daniel HP ProCurve Networki
 Comment Type E Comment Status D
 Basically, I have a problem with the insertion of the word "basic" in this sentence, since it has no value.
 SuggestedRemedy
 Remove basic from this sentence and do a global search to basically ensure that unnecessary repetition is not used.
 Oh... :)
 Proposed Response Response Status O

Cl 55 SC 55.1.5 P 142 L 56 Comment # 395
 Christopher DiMinico MC Communications
 Comment Type E Comment Status D
 Capitals for 10GBase-T
 SuggestedRemedy
 Change: From: 10GBase-T To: 10GBASE-T PHY
 Proposed Response Response Status O

Cl 55 SC 55.1.5 P 142 L 56 Comment # 389
 Beck, Michael Alcatel Bell n.v.
 Comment Type ER Comment Status D
 10GBase-T should be written in all-uppercase.
 SuggestedRemedy
 "All 10GBASE-T PHY implementations..."
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.1.5 P 142 L 56 Comment # 432
 Daines, Kevin World Wide Packets
 Comment Type ER Comment Status X
 "10GBase-T" should be "10GBASE-T"
 SuggestedRemedy
 As per comment
 Proposed Response Response Status O

Cl 55 SC 55.11 P 216 L 1 Comment # 345
 Dawe, Piers Agilent
 Comment Type E Comment Status D
 Usually the subclause on delay constraints comes immediately after the subclause about the service interface
 SuggestedRemedy
 Consider moving this subclause to a more familiar position
 Proposed Response Response Status O

Cl 55 SC 55.1.6 P 143 L 12 Comment # 337
 Dawe, Piers Agilent
 Comment Type TR Comment Status D tolerance
 This isn't a standard for test equipment, and specifying tolerances of instruments is tantamount to adding defined bands for disagreement to the specifications: For example, if I apply 1 V +- 1% to a resistor under test with spec of 900-1100 ohm, and measure the current with a 1% ammeter, is a 899 ohm resistor compliant? Is a 901 ohm resistor compliant? It's just a mess. These days GHz class instruments may fake or adjust their impedances anyway; network analysers use calibration by look-up to improve their accuracy and the user may not know what the impedance really is. We should just write down what you want each parameter to truly be, and let the implementer and his test equipment work out the tolerances guard bands and so on.

Cl 55 SC 55.11 P 216 L 19 Comment # 209
 David V James JGG
 Comment Type E Comment Status D
 DVJ-209
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 right four columns
 Proposed Response Response Status O

SuggestedRemedy
 Delete the sentence 'The values of all components in test circuits shall be accurate to within + 1% unless otherwise stated.', and the associated PICS.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Clarify that the sentence identified by the commenter does not apply to test instrumentation.

Cl 55 SC 55.11 P 216 L 19 Comment # 364
 Barrass, Hugh Cisco Systems
 Comment Type T Comment Status D
 Editor's note on line 26 records that the delay will vary depending on the relative arrival time of the SFD compared to the LDPC block position.
 This must be remedied by making a definitive and observable requirement.
 SuggestedRemedy
 Change table 55-10
 Add a footnote attached to column heading "Max (bit times)"
 "The delay between the measurement points shall not exceed the maximum for any frame transferred. In order to verify this a long sequence of random length frames may be used to ensure that SFD events occur in all positions relative to the PCS encoder and block boundaries."
 Proposed Response Response Status O

Cl 55 SC 55.10 P 215 L 53 Comment # 591
 Thompson, Geoff Nortel
 Comment Type ER Comment Status X
 The guidance to label the: "Data rate capability in Gb/s" without any indication that units are also required can lead to confusion as the speed label could be the same as that produced by the requirement in 10.8a.
 SuggestedRemedy
 Change to: "Data rate capability and units thereof."
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.11 P 216 L 19-2 Comment # 242
 Shimon Muller Sun Microsystems, Inc.

Comment Type TR Comment Status D delay

See my comment against 44.3.

SuggestedRemedy

See my comment against 44.3.

Proposed Response Response Status W

Delay related comments are numbered:
 236, 242, 369

Cl 55 SC 55.11 P 216 L 20 Comment # 369
 Barrass, Hugh Cisco Systems

Comment Type TR Comment Status D delay

The latency allowed by this clause would make the performance of a 10GBASE-T link unacceptable. The parameter specified would allow the GMII-GMII latency to exceed 10uS.

The time to transfer a 64byte frame using Gigabit Ethernet is only 512nS; a Gigabit link will achieve higher performance than a lightly loaded 10GBASE-T link for all but the longest frames. It should be a goal of 10GBASE-T to exceed the performance of 1000BASE-T in as many situations as possible.

It is understood that the block size chosen for 10GBASE-T puts a theoretical limit on latency at ~400nS and that practical considerations will need multiple block times to achieve reasonable power and gate count tradeoffs. However, a very loose requirement for latency will create massive interoperability problems as performance will drop far below expectations for certain combinations of PHY implementation.

It is proposed that 8 block times would be a reasonable limit for PHY latency. This is equivalent to the frame transmission time for a 320 byte frame at 1Gbps.

SuggestedRemedy

Change "100,352" to "25,600"

Proposed Response Response Status W

Delay related comments are numbered:
 236, 242, 369

Cl 55 SC 55.11 P 216 L 20 Comment # 370
 Barrass, Hugh Cisco Systems

Comment Type TR Comment Status D delay - split

It is not sufficient to specify the latency from XGMII to XGMII. Clearly, any variation in latency for a transmitter will eat into the budget for the connected receiver. If a receiver is qualified using a low latency transmitter and transmitter is qualified using a low latency receiver then the resulting link may not meet the requirement.

Note that this comment assumes the acceptance of the comment requiring a shorter total latency. The latency figures in the remedy may be adjusted to match the currently agreed tota

SuggestedRemedy

Add the word "(informative)" to the first column of the second row of Table 55-10.

Add a row to Table 55-10

XGMII ==> MDI ; SFD coming in on XGMII and exiting the MDI (as a start coded in a 64/65 codeblock) ; 3,100 ; SFD ; S code

Add a row to Table 55-10

MDI ==> XGMII ; Start coded 64/65 codeblock coming in on MDI and exiting the XGMII ; 22,400 ; S code ; SFD

Proposed Response Response Status O

Cl 55 SC 55.12 P 217 L 2 Comment # 212
 David V James JGG

Comment Type E Comment Status D

DVJ-212

The title of this subclause is too long, which forces error-prone manual manipulation during the otherwise automatic TOC generation.

SuggestedRemedy

1) Change the title to:

55.12 Protocol implementation conformance statement (PICS) proforma for Clause 55

2) Update the first sentence in the following paragraph:

The supplier of a protocol implementation that is claimed to conform to this clause shall complete the Protocol Implementation Conformance Statement (PICS) proforma listed in the following subclauses.

==>The supplier of a protocol implementation that is claimed to conform to Clause 55, Physical coding sublayer (PCS), physical medium attachment (PMA) sublayer and baseband medium, type 10GBASE-T shall complete the Protocol Implementation Conformance Statement (PICS) proforma listed in the following subclauses.

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.12.1 P 217-235 L Comment # 375
 George Eisler Solarflare

Comment Type T Comment Status D

The PICS need an editorial scrub, based on the following general guidelines:

1. Each "shall" in the text has a corresponding PICS item.
2. The PICS Item column contains the "shall" statement while the Value/Comment column contains the directed value, bit sequence, etc.
3. The body of the text should be reviewed to eliminate multiple "shall" statements in single paragraphs. Rather, it should be understood that any description of a bit sequence, multiple actions, etc. in a paragraph is covered by a single "shall" and the entire contents are mandatory.

SuggestedRemedy

The Editor and his designee(s) be authorized to edit Cause 55.12 according to the above guidelines at his discretion.

Proposed Response Response Status O

Cl 55 SC 55.12.10 P 235 L 6 Comment # 231
 David V James JGG

Comment Type E Comment Status D

DVJ-231
 Small values are supposed to be centered.

SuggestedRemedy

Center the following columns:
 Item, Subclause, Status, Support

Proposed Response Response Status O

Cl 55 SC 55.12.11 P 235 L 33 Comment # 232
 David V James JGG

Comment Type E Comment Status D

DVJ-232
 Small values are supposed to be centered.

SuggestedRemedy

Center the following columns:
 Item, Subclause, Status, Support

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Will be done by the professional IEEE editorial staff.

Cl 55 SC 55.12.11 P 237 L 12 Comment # 234
 David V James JGG

Comment Type E Comment Status D

DVJ-234
 Typos.

SuggestedRemedy

Hb_Gb_matrices.zip)).
 ==>
 Hb_Gb_matrices.zip).

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 55 SC 55.12.11 P 237 L 18 Comment # 233
 David V James JGG

Comment Type E Comment Status D

DVJ-233
 All references belong in the references or bibliography clauses.

SuggestedRemedy

Move this Gallager reference to the Bibliography, with a cross-reference here.

Proposed Response Response Status W

PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 55 SC 55.12.11 P 237 L 7 Comment # 235
 David V James JGG
 Comment Type E Comment Status D
 DVJ-235
 Misleading capitalization
 SuggestedRemedy
 The Parity Check Matrix
 ==>
 The parity check matrix
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.12.2 P 217 L 46 Comment # 211
 David V James JGG
 Comment Type E Comment Status D
 DVJ-211
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Support
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Will be done by the professional IEEE editorial staff.

Cl 55 SC 55.12.2 P 217 L 52 Comment # 210
 David V James JGG
 Comment Type E Comment Status D
 DVJ-210
 The bottom line of a table that is continued should be very-thin. This is particularly true when tables have no titles, as its hard to tell what is a continued table.
 SuggestedRemedy
 Any of:
 a) Force a page break before 55.12.4.1
 b) Fix you templates
 c) Manually fix this problem.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Will be done by the professional IEEE editorial staff.

Cl 55 SC 55.12.2 P 218 L 7 Comment # 213
 David V James JGG
 Comment Type E Comment Status D
 DVJ-213
 Extraneous blank row
 SuggestedRemedy
 Eliminate them.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.12.4 P 219 L 17 Comment # 215
 David V James JGG
 Comment Type E Comment Status D
 DVJ-215
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Support
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Will be done by the professional IEEE editorial staff.

Cl 55 SC 55.12.4 P 219 L 54 Comment # 214
 David V James JGG
 Comment Type E Comment Status D
 DVJ-214
 The bottom line of a table that is continued should be very-thin. This is particularly true when tables have no titles, as its hard to tell what is a continued table.
 SuggestedRemedy
 Any of:
 a) Fix you templates
 b) Manually fix this problem.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Will be done by the professional IEEE editorial staff.

IEEE P802.3an Comments

Cl 55 SC 55.12.4.1 P 219 L 48 Comment # 467
 McClellan, Brett Solarflare

Comment Type T Comment Status X

"In no case shall the scrambler state be initialized to all zeros." This is an untestable requirement. Furthermore, all zeros is a valid initial state.

SuggestedRemedy

Remove the PIC.
 Change text in 55.3.6 pg 160 ln1 from:
 "The initial seed value for the Master and Slave are left to the implementor. In no case shall the scrambler state be initialized to all zeros."
 To:
 "The initial seed value for the Master and Slave are left to the implementor."

Proposed Response Response Status O

Cl 55 SC 55.12.4.1 P 220 L 45 Comment # 217
 David V James JGG

Comment Type E Comment Status D

DVJ-217
 Small values are supposed to be centered.

SuggestedRemedy

Center the following columns:
 Item, Subclause, Status, Support

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Will be done by the professional IEEE editorial staff.

Cl 55 SC 55.12.4.1 P 220 L 55 Comment # 216
 David V James JGG

Comment Type E Comment Status D

DVJ-216
 The bottom line of a table that is continued should be very-thin. This is particularly true when tables have no titles, as its hard to tell what is a continued table.

SuggestedRemedy

Any of:
 a) Force a page break before 55.12.4.1
 b) Fix you templates
 c) Manually fix this problem.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Will be done by the professional IEEE editorial staff.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general

COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn

SORT ORDER: Clause, Subclause, page, line

Cl 55 SC 55.12.4.1 P 221 L 13 Comment # 466
 McClellan, Brett Solarflare

Comment Type E Comment Status X

Typo: "self-synchronizer state" should be "self-synchronizing descrambler state"

SuggestedRemedy

Change text to:
 "self-synchronizing descrambler state"

Proposed Response Response Status O

Cl 55 SC 55.12.4.2 P 221 L 32 Comment # 218
 David V James JGG

Comment Type E Comment Status D

DVJ-218
 Small values are supposed to be centered.

SuggestedRemedy

Center the following columns:
 Item, Subclause, Status, Support

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Will be done by the professional IEEE editorial staff.

Cl 55 SC 55.12.5 P 222 L 54 Comment # 219
 David V James JGG

Comment Type E Comment Status D

DVJ-219
 The bottom line of a table that is continued should be very-thin. This is particularly true when tables have no titles, as its hard to tell what is a continued table.

SuggestedRemedy

Fix you templates or manually fix this problem.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Will be done by the professional IEEE editorial staff.

IEEE P802.3an Comments

Cl 55 SC 55.12.5 P 222 L 6 Comment # 220
 David V James JGG
 Comment Type E Comment Status D
 DVJ-220
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Support
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Will be done by the professional IEEE editorial staff.

Cl 55 SC 55.12.6.1 P 225 L 17 Comment # 222
 David V James JGG
 Comment Type E Comment Status D
 DVJ-222
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Support
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Will be done by the professional IEEE editorial staff.

Cl 55 SC 55.12.6 P 224 L 9 Comment # 221
 David V James JGG
 Comment Type E Comment Status D
 DVJ-221
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Support
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Will be done by the professional IEEE editorial staff.

Cl 55 SC 55.12.6.1 P 225 L 19 Comment # 294
 Reviriego, Pedro Agere Systems
 Comment Type E Comment Status D
 The value comment seems to be void for AN1
 SuggestedRemedy
 Fill it appropriately
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.12.6.1 P 225 L 14 Comment # 223
 David V James JGG
 Comment Type E Comment Status D
 DVJ-223
 Misleading capitalization
 SuggestedRemedy
 10GBASE-T Specific Auto-Negotiation Requirements
 ==>
 10GBASE-T specific auto-negotiation requirements
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.12.7 P 226 L 52 Comment # 295
 Reviriego, Pedro Agere Systems
 Comment Type E Comment Status D
 The test GMII seems to be incorrect
 SuggestedRemedy
 Change GMII to XGMII
 Proposed Response Response Status W
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 55 SC 55.12.7 P 226 L 7 Comment # 224
 David V James JGG
 Comment Type E Comment Status D
 DVJ-224
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Support
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Will be done by the professional IEEE editorial staff.

Cl 55 SC 55.12.8 P 231 L 8 Comment # 226
 David V James JGG
 Comment Type E Comment Status D
 DVJ-226
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Support
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Will be done by the professional IEEE editorial staff.

Cl 55 SC 55.12.7 P 230 L 11 Comment # 225
 David V James JGG
 Comment Type E Comment Status D
 DVJ-225
 Wrong font size on:
 "Properly receive..."
 SuggestedRemedy
 Fix it.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Font size error not clear but there is repeated text which shall be deleted.

Cl 55 SC 55.12.9 P 233 L 27 Comment # 399
 Christopher DiMinico MC Communications
 Comment Type T Comment Status D cabling
 The reference to Category 6 is ANSI/TIA/EIA-568-B.2-1-2002.
 SuggestedRemedy
 Change: ANSI/TIA/EIA-568-B.2:2002
 To: ANSI/TIA/EIA-568-B.2-1-2002
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.12.7 P 230 L 28 Comment # 296
 Reviriego, Pedro Agere Systems
 Comment Type E Comment Status D
 The text 'the four noise source...' is incorrect
 The value comment for PME 44 (and also PME 41) is in two font sizes, use one for all comment/values. This same problem occurs in 55.12.8 LKS18 and in 55.12.9 in MDI9.
 SuggestedRemedy
 Change it to the 'the four noise sources ...'
 Review the font size to ensure consistency in sections 55.12.7 through 55.12.9
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.12.9 P 233 L 44 Comment # 228
 David V James JGG
 Comment Type E Comment Status D
 DVJ-228
 Wrong font size.
 SuggestedRemedy
 Apply standard font size to right column.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 55 SC 55.12.9 P 233 L 8 Comment # 227
 David V James JGG
 Comment Type E Comment Status D
 DVJ-227
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Item, Subclause, Status, Support
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Will be done by the professional IEEE editorial staff.

Cl 55 SC 55.2 P 143 L 16 Comment # 129
 David V James JGG
 Comment Type E Comment Status D
 DVJ-129
 Misleading capitalization
 SuggestedRemedy
 10GBASE-T Service Primitives and Interfaces
 ==>
 10GBASE-T Service primitives and interfaces
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.12.9 P 234 L 15 Comment # 230
 David V James JGG
 Comment Type T Comment Status D pics format
 DVJ-230
 The continuation of the feature cell test in the Value/Comment cell is highly irregular and confusing.
 Also, the capitalization in the right column obfuscates even this too subtle usage.
 SuggestedRemedy
 Decouple these two portions of a sentence, in MDI13.
 Also, check and correct throughout.
 Proposed Response Response Status W
 PROPOSED REJECT.
 Not clear what is wrong

Cl 55 SC 55.2 P 143 L 23 Comment # 130
 David V James JGG
 Comment Type E Comment Status D
 DVJ-130
 Misleading capitalization
 SuggestedRemedy
 Medium Dependent Interface (MDI)
 ==>
 Medium dependent interface (MDI)
 As per 802.3REV acronyms
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.12.9 P 234 L 23 Comment # 229
 David V James JGG
 Comment Type T Comment Status D pics MDI
 DVJ-229
 What does PME?? mean.
 SuggestedRemedy
 Correct this.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Replace question marks

Cl 55 SC 55.2.2 P 140 L 27 Comment # 333
 Dawe, Piers Agilent
 Comment Type ER Comment Status D
 I think the rest of 802.3 has changed the mix of X.indicate and X.indication to be all X.indication, in line with another international standard.
 SuggestedRemedy
 Change PMA_UNITDATA.indicate to PMA_UNITDATA.indication, and similar changes.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.2.2 P 140 L 28 Comment # 334
 Dawe, Piers Agilent
 Comment Type E Comment Status D
 If PMA_UNITDATA.indicate (rx_symb_vector) is the function PMA_UNITDATA.indicate of the variable rx_symb_vector, there wouldn't be a space before the '. See 52.1.1 for other examples.
 SuggestedRemedy
 Either explain what parts of speech these things are, or remove this and similar spaces.
 Proposed Response Response Status O

Cl 55 SC 55.2.3 P 145 L 45 Comment # 642
 Yagil, Ariel Texas Instruments
 Comment Type E Comment Status X
 This is a sub-paragraph of 55.2.2, therefore the numbering should be 55.2.2.1, not 55.2.3. This applies to all sub-paragraphs related to PMA service interface
 SuggestedRemedy
 Change numbering of all sub paragraphs between 55.2.3 to 55.2.10.2 (to 55.2.2.1 to 55.2.2.8.2, respectively)
 Proposed Response Response Status O

Cl 55 SC 55.2.2 P 144 L 49 Comment # 433
 Daines, Kevin World Wide Packets
 Comment Type ER Comment Status X
 Shouldn't "PMA_TXMODE.indicate(tx_mode)" be "PMA_TXMODE.indication(tx_mode)"?
 SuggestedRemedy
 As per comment.
 In addition, change each of the other ".indicate" service primitives to ".indication"
 Proposed Response Response Status O

Cl 55 SC 55.2.6.1 P 147 L 42 Comment # 643
 Yagil, Ariel Texas Instruments
 Comment Type T Comment Status X
 In order to achieve the required BER, rx_symb_vector should include not only the receiver's best estimate of the symbols that were sent by the remote transmitter, but also a reliability measure for each symbol
 SuggestedRemedy
 Change: "A vector of the four 1-D symbols that is the receiver's best estimate of the symbols that were sent by the remote transmitter across the four pairs" to "A vector of the four 1-D symbols that is the receiver's best estimate of the symbols that were sent by the remote transmitter across the four pairs with reliability measures for each symbol"
 Proposed Response Response Status O

Cl 55 SC 55.2.2 P 145 L 35 Comment # 131
 David V James JGG
 Comment Type E Comment Status D
 DVJ-131
 Don't mix ALL CAPS and Some caps conventions in one figure.
 SuggestedRemedy
 MEDIUM DEPENDENT INTERFACE
 ==>
 Medium dependent interface
 (and similar changes for nonspecial words)
 Proposed Response Response Status W
 PROPOSED REJECT.

Cl 55 SC 55.2.6.1 P 147 L 44 Comment # 435
 Daines, Kevin World Wide Packets
 Comment Type E Comment Status X
 Hanging indent needs to be fixed.
 SuggestedRemedy
 As per comment
 Proposed Response Response Status O

IEEE P802.3an Comments

CI 55 SC 55.3 P 149 L 51 Comment # 371
 Barrass, Hugh Cisco Systems

Comment Type E Comment Status D

The PCS section is not divided or organized logically. The sections need to be re-ordered and re-numbered.

Note that other comments will assume that this breakdown (or similar) is made.

SuggestedRemedy

Without changing the contents, reorder and renumber the sections as follows:

- 55.3 Physical Coding Sublayer (PCS)
 - 55.3.1 PCS service interface (XGMII)
 - 55.3.2 PCS functions
 - 55.3.2.1 PCS Reset function
 - 55.3.2.2 PCS Transmit function
 - 55.3.2.2.1 Use of blocks (was 55.3.3)
 - 55.3.2.2.3 65B-LDPC transmission code (was 55.3.4)
 - 55.3.2.2.4 Transmit process (was 55.3.5)
 - 55.3.2.2.5 PCS Scrambler (was 55.3.6)
 - 55.3.2.2.6 CRC8 (was 55.3.7)
 - 55.3.2.2.7 LDPC Encoder (was 55.3.8)
 - 55.3.2.2.8 DSQ128 bit mapping (was 55.3.9)
 - 55.3.2.2.9 DSQ128 to 4D-1DSQ128 (was 55.3.10)
 - 55.3.2.2.10 65B-LDPC Framer (was 55.3.11)
 - 55.3.2.3 PCS Receive function (was 55.3.15)
 - 55.3.2.3.1 Frame and Block synchronization (was 55.3.13)
 - 55.3.2.3.2 PCS Descrambler (was 55.3.14)
 - 55.3.3 Test-pattern generators (was 55.3.12)
 - 55.3.4 PMA Training Side-stream scrambler polynomials (was 55.3.16)
 - 55.3.5 Detailed functions and state diagrams (was 55.3.17)

55.3.6 PCS Management (was 55.3.18)
 Proposed Response Response Status O

CI 55 SC 55.3.11 P 162 L 58 Comment # 651
 Yagil, Ariel Texas Instruments

Comment Type E Comment Status X

Change "The 65B-LDPC adapts..." to "The 65B-LDPC framer adapts..."

SuggestedRemedy

Change as suggested

Proposed Response Response Status O

CI 55 SC 55.3.12 P 163 L Comment # 652
 Yagil, Ariel Texas Instruments

Comment Type E Comment Status X

Clarify that the test pattern is used in test mode 7

SuggestedRemedy

Add the following sentence at the end of the paragraph: "This test pattern is used in test mode 7 (see Table 55-7)"

Proposed Response Response Status O

CI 55 SC 55.3.12 P 163 L 13 Comment # 465
 McClellan, Brett Solarflare

Comment Type T Comment Status X

This clause describes the test pattern generator mode, but doesn't define the register setting to enable this mode. The register setting is defined in clause 55.5.2

SuggestedRemedy

Add text:
 This mode is further described as Test Mode 7 in 55.5.2.

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.3.12 P 163 L 13 Comment # 374
 Barrass, Hugh Cisco Systems

Comment Type TR Comment Status D pcsma - testing

Additional test patterns are required:

It will be prohibitively difficult to test the quality of LDPC implementations in a receiver as it will be exceedingly difficult to ensure the the test channel genuinely produces the worst signa degradation and noise ingress to fully exercise the error correction function in a deterministic manner. Therefore we should define an error inserting test pattern generator that can exercis the LDPC decode on a good quality and quiet link.

Also,we need a mechanism of forcing a parity error in the CRC8 so that the function can be tested in the receiver.

SuggestedRemedy

At the end of clause 55.3.12, add:

The transmit function shall have the ability to inject pseudo random bit errors into the coded bits of a 65BLDPC frame. In order to test the receiver LDPC error correction function, a transmitter and receiver pair shall be connected by a short,high quality link. The SNR margin at the receiver shall be greater than 10dB. The transmitter injects a pseudo random error pattern into the coded bits of the egress 65BLDPC frames equivalent to a BER of 1/100. The receiver shall correct the errors to achieve a resultant BER less than 10^-12. (TBD : does the injected error pattern need to be distributed across the DSQ128 coding?)

The transmit function shall have the ability to inject random false parity codes in the CRC8 function. On a short, high quality link, with a receive SNR margin greater than 10dB, the receiver shall detect but not correct the injected CRC errors (invalidating the XGMII data as defined in 55.3.15)

Proposed Response Response Status O

Cl 55 SC 55.3.15 P 163 L 31 Comment # 372
 Barrass, Hugh Cisco Systems

Comment Type T Comment Status D pcsma

The section for PCS receive function is incomplete.

SuggestedRemedy

Rewrite the main section of this subclause as follows:

The PCS Receive function shall conform to the PCS Receive state diagram in Figure 55-16 including compliance with the associated state variables as specified in 55.3.17.

The PCS Receive function accepts received code-groups provided by the PMA Receive function via the parameter rx_symb_vector. The PCS receiver uses knowledge of the encoding rules to correctly align the 65BLDPC frames. The received 65BLDPC frames are decoded with error correction; the CRC 8 and framing is checked; the 64B/65B ordered sets are converted to 64 bit data blocks to obtain the signals RXD<31:0> and RXC<3:0> for transmission to the XGMII. Two XGMII data transfers are decoded from each block. Where the XGMII and PMA sublayer data rates are not synchronized to a 25:64 ratio, the receive process will insert idles, delete idles, or delete sequence ordered sets to adapt between rates

During training mode, PCS Receive checks the received framing and signals the reliable acquisition of the descrambler state by setting the parameter scr_status to OK.

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.3.15 P 163 L 31 Comment # 373
 Barrass, Hugh Cisco Systems

Comment Type TR Comment Status D pcsma - testing

The PCS receive specification lacks any definitive treatment of the CRC decode function.

Note alsothat the CRC8 function must be independant of the LDPC convergence for the MTTFPA analysis to be valid, therefore the use of the CRC8 parity bits for LDPC convergence must be prohibited.

SuggestedRemedy

Add a subclause under PCS receive function. The new subclause should be between Frame and Block synchronization (was 55.3.13) and PCS Descrambler (was 55.3.14).

CRC8 receive function

The PCS receive function shall check the integrity of the CRC8 parity bits defined in 55.3.7. If the parity check fails, the receiver shall assert RX_ER during the transfer of all the codeblock contained in the 65BLDPC frame across the XGMII. On receipt of a failed CRC8 parity check, the PCS receiver shall increment the counter lf_fail_CRC8 (see 55.3.17.2.5).

The PCS receive function may decode and check the CRC8 parity bits simultaneously to resolving the LDPC error correction function. The PCS receiver shall not use the CRC8 parity check code to assist the LDPC convergence.

Also, add a corresponding counter in 55.3.17.2.5

lf_fail_CRC8

Count of the number of LDPC frames failing CRC8 parity check within the current 64 LDPC frame window.

Proposed Response Response Status O

Cl 55 SC 55.3.15 P 163 L 35 Comment # 154
 David V James JGG

Comment Type E Comment Status D

DVJ-154
 Unneeded hyphen.

SuggestedRemedy

65-bits
 ==>
 65 bits

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 55 SC 55.3.16 P 158 L 9 Comment # 441
 Ungerboeck, Gottfried Broadcom

Comment Type T Comment Status X g.ungerboeck@bluewin.ch

Section 55.3.16 and its subsections lack conciseness and rigor of specification. Specifically, the periodic initialization with seed values of the PN generator providing the main PN sequence { Scrn[0] } may be misinterpreted because in Figure 55 13 on page 159 the signals Scrn[x], x=0,1,..32, are not clearly associated with signal lines, but are written above the delay elements with selectable inputs. Further, the role of the auxiliary generating (=generator) polynomial g(x) is not immediately clear. The statement "The associated delays are all large and different ..." is not entirely accurate. The four sequences { Syn[1] } = { Scrn[0] }, { Syn[2] } { Syn[3] } are pairwise (i.e., (0,1), (1,2), (2,3)) offset by the same unknown, presumably large delay.

SuggestedRemedy

Follow description given in slide "Unambiguous generation of PMA training sequences" offered for presentation by the commenter .

Proposed Response Response Status O

Cl 55 SC 55.3.16 P 158 L 9 Comment # 440
 Ungerboeck, Gottfried Broadcom

Comment Type T Comment Status X g.ungerboeck@bluewin.ch

Section 55.3.16 and its subsections lack conciseness and rigor of specification. Specifically, the periodic initialization with seed values of the PN generator providing the main PN sequence { Scrn[0] } may be misinterpreted because in Figure 55 13 on page 159 the signals Scrn[x], x=0,1,..32, are not clearly associated with signal lines, but are written above the delay elements with selectable inputs. Further, the role of the auxiliary generating (=generator) polynomial g(x) is not immediately clear. The statement "The associated delays are all large and different ..." is not entirely accurate. The four sequences { Syn[1] } = { Scrn[0] }, { Syn[2] } { Syn[3] } are pairwise (i.e., (0,1), (1,2), (2,3)) offset by the same unknown, presumably large delay.

SuggestedRemedy

Follow description given in slide "Unambiguous generation of PMA training sequences" offered for presentation by the commenter .

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.3.16 P 158 L 9 Comment # 439
 Ungerboeck, Gottfried Broadcom

Comment Type T Comment Status X g.ungerboeck@bluewin.ch

Section 55.3.16 and its subsections lack conciseness and rigor of specification. Specifically, the periodic initialization with seed values of the PN generator providing the main PN sequence { Scrn[0] } may be misinterpreted because in Figure 55 13 on page 159 the signals Scrn[x], x=0,1,..32, are not clearly associated with signal lines, but are written above the delay elements with selectable inputs. Further, the role of the auxiliary generating (=generator) polynomial g(x) is not immediately clear. The statement "The associated delays are all large and different ..." is not entirely accurate. The four sequences { Syn[1] } = { Scrn[0] }, { Syn[2] } { Syn[3] } are pairwise (i.e., (0,1), (1,2), (2,3)) offset by the same unknown, presumably large delay.

SuggestedRemedy

Follow description given in slide "Unambiguous generation of PMA training sequences" offered for presentation by the commenter .

Proposed Response Response Status O

Cl 55 SC 55.3.16 P 164 L 15 Comment # 157
 David V James JGG

Comment Type E Comment Status D

DVJ-157
 Misleading capitalization

SuggestedRemedy

Serial Data Output
 ==>
 Serial data output

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 55 SC 55.3.16 P 164 L 21 Comment # 155
 David V James JGG

Comment Type E Comment Status D

DVJ-155
 Misleading capitalization

SuggestedRemedy

Scrambled Data Input
 ==>
 Scrambled data input

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 55 SC 55.3.16 P 164 L 30 Comment # 158
 David V James JGG

Comment Type E Comment Status D

DVJ-158
 Misleading capitalization

SuggestedRemedy

Serial Data Output
 ==>
 Serial data output

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 55 SC 55.3.16 P 164 L 32 Comment # 159
 David V James JGG

Comment Type E Comment Status D

DVJ-159
 Misleading capitalization

SuggestedRemedy

Master and Slave PCS Descramblers
 ==>
 Master and slave PCS descramblers

Proposed Response Response Status O

Cl 55 SC 55.3.16 P 164 L 47 Comment # 393
 Christopher DiMinico MC Communications

Comment Type E Comment Status D

remove space "re initialize"

SuggestedRemedy

Proposed Response Response Status W

PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 55 SC 55.3.16 P 164 L 48 Comment # 160
 David V James JGG
 Comment Type E Comment Status D
 DVJ-160
 Editorial.
 Missing hyphen
 SuggestedRemedy
 ==> 33-bit hexadecimal...
 and use a nonbreaking hyphen.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.3.16 P 164 L 7 Comment # 156
 David V James JGG
 Comment Type E Comment Status D
 DVJ-156
 Misleading capitalization
 SuggestedRemedy
 Scrambled Data Input
 ==>
 Scrambled data input
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.3.16 P 165 L 9 Comment # 594
 Tellado, Jose Teranetics
 Comment Type TR Comment Status X
 The (re)initialization of the PMA scrambler is not clear. If the seed[32:0] is inserted at time n=0, it will appear at Scr_n[0] at n=1, since there is a delay of T
 SuggestedRemedy
 Make it clear that the seed value is reset at time n=0 at the output Scr_n[0] for n=0.
 Proposed Response Response Status O

Cl 55 SC 55.3.16.2 P 166 L 21 Comment # 285
 Reviriego, Pedro Agere Systems
 Comment Type E Comment Status D
 When printed in paper 'lFn,' can be confused for 'lfw'
 SuggestedRemedy
 Put a space between 'lFn' and ',' to avoid confusion
 Proposed Response Response Status O

Cl 55 SC 55.3.16.2 P 166 L 40 Comment # 286
 Reviriego, Pedro Agere Systems
 Comment Type E Comment Status D
 The text 'three settings of THP and Power Backoff and ...' is not very clear
 SuggestedRemedy
 Change to:
 'settings of THP and Power Backoff and ...'
 The specific of those settings are then fully detailed in the corresponding section of the draft.
 Proposed Response Response Status O

Cl 55 SC 55.3.17.2.2 P 167 L 55 Comment # 287
 Reviriego, Pedro Agere Systems
 Comment Type E Comment Status D
 The value TRUE is not aligned with the above text.
 SuggestedRemedy
 Align the text
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.3.17.2.2 P 168 L 10 Comment # 655
 Yagil, Ariel Texas Instruments
 Comment Type T Comment Status X
 Specification of valid LDPC frame is not clear (it is mentioned in the PCS introduction in 55.3.2.2)
 SuggestedRemedy
 Add the following sentence to the definition of If_valid:
 "LDPC frame is valid if:
 a. All parity check of coded bits are satisfied.
 b. CRC8 field is valid"
 Proposed Response Response Status O

Cl 55 SC 55.3.17.2.4 P 168 L 36 Comment # 653
 Yagil, Ariel Texas Instruments
 Comment Type E Comment Status X
 The DECODE function specified in this text is not consistent with the DECODE function used in Figure 55-16. In the text, the argument of this function is a vector of 256 (soft) values of rx_symb_vector. The function returns 50 72-bit rx_raw vector. In the Figure, the function's argument is 65-bit rx_coded vector and the function returns a single 72-bit rx_raw vector
 SuggestedRemedy
 Change the text according to the Figure:
 "DECODE(rx_coded<64:0>)
 In the PCS Receive process, this function takes as its argument 65-bit rx_coded<64:0> from the LDPC decoder and decodes the 65B-LDPC bit vector returning a vector rx_raw<71:0> which is sent to the XGMII. The DECODE function shall decode the block based on code specified in 55.3.4"
 Proposed Response Response Status O

Cl 55 SC 55.3.17.2.4 P 168 L 44 Comment # 654
 Yagil, Ariel Texas Instruments
 Comment Type T Comment Status X
 The ENCODE function specified in this text is not consistent with the ENCODE function used in Figure 55-15. In the text, the function returns 256 values of tx_symb_vector. In the Figure, the function returns a 65-bit rx_coded vector
 SuggestedRemedy
 Change the text according to the Figure:
 "ENCODE(tx_raw<71:0>)
 Encodes the 72-bit vector received from the XGMII, returning 65-bit vector tx_coded. The ENCODE function shall encode the block as specified in 55.3.4."
 Proposed Response Response Status O

Cl 55 SC 55.3.17.2.4 P 168 L 52 Comment # 657
 Yagil, Ariel Texas Instruments
 Comment Type E Comment Status X
 The term "sync header" is used instead of "data/ctrl header" in the definitions of C,S,T & D.
 SuggestedRemedy
 Change the four occurrences of "sync header" to "data/ctrl header"
 Proposed Response Response Status O

Cl 55 SC 55.3.17.2.4 P 169 L 7 Comment # 658
 Yagil, Ariel Texas Instruments
 Comment Type T Comment Status X
 There are no 10GBASE-R control codes specified in Table 55-1
 SuggestedRemedy
 Change "10GBASE-R" to "10GBASE-T"
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.3.17.2.5 P 169 L 53 Comment # 660
 Yagil, Ariel Texas Instruments
 Comment Type T Comment Status X
 The counters lf_cnt and lf_invalid_cnt are never used in the state machines (or elsewhere)
 SuggestedRemedy
 Eliminate these counters
 Proposed Response Response Status O

Cl 55 SC 55.3.17.2.5 P 169 L 7 Comment # 659
 Yagil, Ariel Texas Instruments
 Comment Type T Comment Status X
 It is not clear if the reserved 10GBASE-T control codes in Table 55-1 should be considered as valid or non valid
 SuggestedRemedy
 Add the following sentence: "The reserved 10GBASE-T control codes in Table 55-1 shall be considered as valid"
 Proposed Response Response Status O

Cl 55 SC 55.3.17.2.5 P 170 L 12 Comment # 661
 Yagil, Ariel Texas Instruments
 Comment Type E Comment Status X
 The aliases PUDI and PUDR are never used
 SuggestedRemedy
 Eliminate these aliases
 Proposed Response Response Status O

Cl 55 SC 55.3.18.1 P 170 L 44 Comment # 662
 Yagil, Ariel Texas Instruments
 Comment Type T Comment Status X
 PCS_status is used only for PCS management but also as a message to the PMA (see Figures 55-18 and 55-19)
 SuggestedRemedy
 Add PCS_status also to the list of messages in 55.3.17.3.
 Proposed Response Response Status O

Cl 55 SC 55.3.18.2 P 171 L 6 Comment # 663
 Yagil, Ariel Texas Instruments
 Comment Type T Comment Status X
 It seems that the value of lfer_count is always identical to lfer_cnt
 SuggestedRemedy
 Clarify that lfer_count and lfer_cnt are identical (or clarify the difference). Consider renaming lfer_count to lfer_cnt.
 Proposed Response Response Status O

Cl 55 SC 55.3.18.3 P 174 L 5 Comment # 685
 Law, David 3Com
 Comment Type T Comment Status X
 The text states that 'the PCS shall transmit a continuous stream of 65B-LDPC encoded 1DSQ128 symbols to the PMA sublayer,' therefore it seems any stream of 5B-LDPC encoded 1DSQ128 symbols is acceptable and it doesn't have to bear any relation to that data being presented on the transmit path of the XGMII.
 SuggestedRemedy
 If this is correct then no change is require, but if not change to specify what is required to be transmitted.
 Proposed Response Response Status O

Cl 55 SC 55.3.2 P 150 L 35 Comment # 132
 David V James JGG
 Comment Type E Comment Status D
 DVJ-132
 Callouts can be ALL CAPS or Some caps, but not both.
 SuggestedRemedy
 Eliminate mixture by converting ALL CAPS to lower case.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.3.2.2 P 151 L 19 Comment # 644
 Yagil, Ariel Texas Instruments
 Comment Type E Comment Status X
 The sentence "...is processed by a Low Density Parity Check (LDPC) and then..." should be changes to "...is processed by a Low Density Parity Check (LDPC) encoder and then..."
 SuggestedRemedy
 Change as above
 Proposed Response Response Status O

Cl 55 SC 55.3.2.2 P 151 L 24 Comment # 645
 Yagil, Ariel Texas Instruments
 Comment Type E Comment Status X
 The two paragraphs starting at line 24 describe the PCS receive function. Therefore, they belong to 55.3.15
 SuggestedRemedy
 Move the paragraphs to 55.3.15
 Proposed Response Response Status O

Cl 55 SC 55.3.2.2 P 151 L 19 Comment # 134
 David V James JGG
 Comment Type E Comment Status D
 DVJ-134
 Be consistent with acronyms.
 SuggestedRemedy
 Low Density Parity Check (LDPC)
 ==>
 low density parity check (LDPC)
 Proposed Response Response Status O

Cl 55 SC 55.3.2.2 P 151 L 29 Comment # 646
 Yagil, Ariel Texas Instruments
 Comment Type E Comment Status X
 The sentence: "When the PCS Synchronization process is synchronized to the PMA Training 1 bit pattern on pair A every 256 PAM2 symbols which is aligned with the PCS PHY frame boundary, block_lock is asserted" is not clear
 SuggestedRemedy
 Replace with the following sentence: "PMA Training sequence includes 1 bit pattern on pair A every 256 PAM2 symbols, which is aligned with the PCS PHY frame boundary. When the PCS Synchronization process is synchronized to this pattern, block_lock is asserted."
 Proposed Response Response Status O

Cl 55 SC 55.3.2.2 P 151 L 20 Comment # 133
 David V James JGG
 Comment Type E Comment Status D
 DVJ-133
 Be consistent with acronyms.
 SuggestedRemedy
 DSQ (Double Square)
 ==>
 double square (DSQ)
 Proposed Response Response Status O

Cl 55 SC 55.3.2.2 P 151 L 59 Comment # 647
 Yagil, Ariel Texas Instruments
 Comment Type E Comment Status X
 InfoField is not only used for indicating the receive status to the link partner, but also to make requests for remote transmitter settings.
 SuggestedRemedy
 Add at the end of the paragraph " and makes requests for remote transmitter settings. See 55.4.2.4"
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.3.4.1 P 152 L 37 Comment # 392
 Beck, Michael Alcatel Bell n.v.

Comment Type ER Comment Status D

The Task Force seems to have chosen the name "64B/65B" for the encapsulation mode used by the 10GBASE-T PCS. This name could cause some confusion, because:
 -the name "64B/65B" was used in early drafts of the 802.3ah "Ethernet in the First Mile" standard to designate the PCS now known as "64/65-octet encapsulation";
 -a different bitwise coding scheme called "64B/65B" is already defined as part of the GFP-T encapsulation in ITU-T Recommendation G.7041/Y.1303.

SuggestedRemedy

Abandon the naming "64B/65B". As the name "64B/65B" is not used very often in the draft, it may be possible to paraphrase the occurrences, thus avoiding the need for a new name.

Proposed Response Response Status O

Cl 55 SC 55.3.4.1 P 152 L 46 Comment # 135
 David V James JGG

Comment Type T Comment Status D pcpma

DVJ-135
 This bit-swap for a bit-swap definition is highly confusing.

SuggestedRemedy

from left to right as 01111000.
 ==>
 from right-to-left as 00011110.

Proposed Response Response Status W

PROPOSED REJECT.

The change will not make it any clearer

Cl 55 SC 55.3.4.2 P 153 L 39 Comment # 350
 Dawe, Piers Agilent

Comment Type E Comment Status D

'unc' not a word

SuggestedRemedy

Change to 'uncoded'

Proposed Response Response Status O

Cl 55 SC 55.3.4.2 P 153 L 42 Comment # 593
 Tellado, Jose Teranetics

Comment Type T Comment Status X

The indexes for the 512 DSQ128 should span 0 to 511

SuggestedRemedy

Change the indexes 252, 253, 254 and 255 to 508, 509, 510, 511

Proposed Response Response Status O

Cl 55 SC 55.3.4.2 P 155 L Comment # 443
 Wael William Diab Cisco Systems

Comment Type ER Comment Status X

Please remove any color from Figure 55-8.

SuggestedRemedy

Ensure that the figure is drawn in Frame without color.

Proposed Response Response Status O

Cl 55 SC 55.3.4.2 P 155 L 1 Comment # 266
 Dove, Daniel HP ProCurve Networki

Comment Type E Comment Status D colors

Funky colors are not necessarily improving the information value of this illustration.

SuggestedRemedy

Is there a better way to do this without the coloring?

Proposed Response Response Status O

Cl 55 SC 55.3.4.2 P 155 L 10 Comment # 137
 David V James JGG

Comment Type E Comment Status D colors

DVJ-137
 Not supposed to use color in IEEE docs.

SuggestedRemedy

Change illustration to black and white. Also, eliminate cross-hatching in favor of shading.

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.3.4.2 P 155 L 30 Comment # 136
 David V James JGG
 Comment Type E Comment Status D
 DVJ-136
 Misleading capitalization
 SuggestedRemedy
 PCS Detailed Transmit Bit Ordering
 ==>
 PCS detailed transmit bit ordering
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.3.4.2 P 155 L 7 Comment # 352
 Dawe, Piers Agilent
 Comment Type ER Comment Status D color
 Gratuitous color - would trigger unnecessary expense if printed copies were still made, orange and blue are not distinguishable on a black-and-white printer. Orange in diagram doesn't match orange square in key.
 SuggestedRemedy
 Remove the cyan and grey shading. Can you use white, light grey, dark grey and black (with white lettering) for the other shadings?
 Proposed Response Response Status O

Cl 55 SC 55.3.4.2 P 155 L 7 Comment # 353
 Dawe, Piers Agilent
 Comment Type E Comment Status D
 Scram. Not the right word, gratuitous capitals.
 SuggestedRemedy
 Change to 'Self-synchronous scrambler'.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.3.4.3 P 155 L 59 Comment # 351
 Dawe, Piers Agilent
 Comment Type ER Comment Status D
 In the sentence 'Hexadecimal numbers are shown in normal hexadecimal.', 'normal' seems to be a matter of personal preference. As far as I know, this notation is C. It's not the notation I learnt as a schoolboy.
 SuggestedRemedy
 Preferably, change to 'Hexadecimal numbers are shown with the least significant digit on the right'; remove the several '0x's from the draft, use a combination of subscript 16 and a footnote to table 55-9 to remove confusion with decimal numbers. Or if that's too much, change this sentence to 'Hexadecimal numbers are shown prepended with '0x', and with the least significant digit on the right (see 1.2.5)'.
 Proposed Response Response Status O

Cl 55 SC 55.3.4.4 P 156 L Comment # 648
 Yagil, Ariel Texas Instruments
 Comment Type T Comment Status X
 In Figure 55-9 the term "Data/Ctrl header" should be used instead of "Data/Ctrl bit" for consistency with the text (e.g. the first sentence of 55.3.4.3)
 SuggestedRemedy
 Change "bit" to "header"
 Proposed Response Response Status O

Cl 55 SC 55.3.4.4 P 156 L 19 Comment # 138
 David V James JGG
 Comment Type E Comment Status D
 DVJ-138
 Misleading capitalization
 SuggestedRemedy
 Input Data==>
 Input data
 Proposed Response Response Status W
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 55 SC 55.3.4.4 P 156 L 20 Comment # 139
 David V James JGG
 Comment Type E Comment Status D
 DVJ-139
 Misleading capitalization
 SuggestedRemedy
 Block Payload
 ==>
 Block payload
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.3.4.4 P 156 L 23 Comment # 141
 David V James JGG
 Comment Type E Comment Status D
 DVJ-141
 Misleading capitalization
 SuggestedRemedy
 Bit Position:
 ==>
 Bit position:
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.3.4.4 P 156 L 24 Comment # 140
 David V James JGG
 Comment Type E Comment Status D
 DVJ-140
 Misleading capitalization
 SuggestedRemedy
 Data Block Format:
 ==>
 Data block format
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.3.4.4 P 156 L 25 Comment # 144
 David V James JGG
 Comment Type E Comment Status D
 DVJ-144
 Nonstandard table lines.
 SuggestedRemedy
 Thin on the outside.
 Very-thin on the inside.
 Proposed Response Response Status W
 PROPOSED REJECT.
 Leave it to the professional IEEE editorial staff.

Cl 55 SC 55.3.4.4 P 156 L 26 Comment # 142
 David V James JGG
 Comment Type E Comment Status D
 DVJ-142
 Misleading capitalization
 SuggestedRemedy
 Control Block Formats:
 ==>
 Control block formats
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.3.4.4 P 156 L 28 Comment # 145
 David V James JGG
 Comment Type T Comment Status D capitalization
 DVJ-145
 This document uses both lower-case and upper-case hex codes. Must use only one.
 SuggestedRemedy
 I prefer to use upper case, as in 0x2D.
 Whatever you do, add a notation clause so that this is done consistently in the future.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

IEEE P802.3an Comments

Cl 55 SC 55.3.4.4 P 156 L 49 Comment # 143
 David V James JGG
 Comment Type E Comment Status D
 DVJ-143
 Misleading capitalization
 SuggestedRemedy
 64B/65B Block Formats
 ==>
 64B/65B Block formats
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.3.4.6 P 157 L 21 Comment # 284
 Reviriego, Pedro Agere Systems
 Comment Type E Comment Status D
 Clarify point e)
 SuggestedRemedy
 e) The block contains the payload of an invalid PHY frame.
 Proposed Response Response Status O

Cl 55 SC 55.3.4.7 P 157 L 26 Comment # 575
 Booth, Brad Intel
 Comment Type E Comment Status X
 Paragraph is split across pages.
 SuggestedRemedy
 Change Table 55-1 anchor so it doesn't split the paragraph.
 Also applies to 55.5.2.
 Proposed Response Response Status O

Cl 55 SC 55.3.4.7 P 158 L 13 Comment # 151
 David V James JGG
 Comment Type E Comment Status D
 DVJ-151
 Nonstandard table lines.
 SuggestedRemedy
 Thin on the outside.
 Very-thin on the inside.
 Proposed Response Response Status W
 PROPOSED REJECT.
 Leave it to the professional IEEE editorial staff.

Cl 55 SC 55.3.4.7 P 158 L 9 Comment # 150
 David V James JGG
 Comment Type E Comment Status D
 DVJ-150
 Misleading capitalization
 SuggestedRemedy
 8B/10B Code
 ==>
 8B/10B code
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.3.4.7 P 158 L 9 Comment # 146
 David V James JGG
 Comment Type E Comment Status D
 DVJ-146
 Misleading capitalization
 SuggestedRemedy
 Control Character
 ==>
 Control character
 Proposed Response Response Status W
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 55 SC 55.3.4.7 P 158 L 9 Comment # 147
 David V James JGG
 Comment Type E Comment Status D
 DVJ-147
 Misleading capitalization
 SuggestedRemedy
 XGMII Control Code
 ==>
 XGMII control code
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.3.4.7 P 158 L 9 Comment # 148
 David V James JGG
 Comment Type E Comment Status D
 DVJ-148
 Misleading capitalization
 SuggestedRemedy
 10GBASE-T Control Code
 ==>
 10GBASE-T control code
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.3.4.7 P 158 L 9 Comment # 149
 David V James JGG
 Comment Type E Comment Status D
 DVJ-149
 Misleading capitalization
 SuggestedRemedy
 10GBASE-T O Code
 ==>
 10GBASE-T O code
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.3.6 P 159 L 53 Comment # 267
 Dove, Daniel HP ProCurve Networki
 Comment Type TR Comment Status D scrambler
 The use of a self-synchronizing scrambler has its value, but it also allows propagation of errors.
 SuggestedRemedy
 Change to a stream cypher or direct me to the analysis that shows the propagation of errors is acceptable.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Will direct you to the analysis.

Cl 55 SC 55.3.7 P 160 L 44 Comment # 656
 Yagil, Ariel Texas Instruments
 Comment Type T Comment Status X
 It is not completely clear if the Aux bit participates in CRC8. The text implies that it is not. However, since since Aux bit is an uncoded bit, I believe it should participate (although the aux bit has currently no use and is a-priori known, this may change in futre drafts)
 SuggestedRemedy
 Change the first sentence to: "The aggregated 50 65B blocks and the Aux bit shall be used to calculate..."
 Proposed Response Response Status O

Cl 55 SC 55.3.7 P 160 L 47 Comment # 576
 Booth, Brad Intel
 Comment Type E Comment Status X
 Insert equation number.
 SuggestedRemedy
 As per comment. Also applies to equations in 55.3.16 and 55.3.16.1
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.3.7 P 161 L 11 Comment # 153
 David V James JGG
 Comment Type E Comment Status D
 DVJ-153
 Misleading capitalization
 SuggestedRemedy
 CRC8 Output
 ==>
 CRC8 output
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.3.7 P 161 L 12 Comment # 152
 David V James JGG
 Comment Type E Comment Status D
 DVJ-152
 Misleading capitalization
 SuggestedRemedy
 Serial Data Input
 ==>
 Serial data input
 or
 serial data input
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.3.8 P 161 L Comment # 650
 Yagil, Ariel Texas Instruments
 Comment Type T Comment Status X
 There is no text specifying exactly how the 3259 bits are divided into coded and uncoded bits.
 This is only implied in Figure 55-8
 SuggestedRemedy
 Add text or equations that specify the partitioning inot coded and uncoded bits.
 Proposed Response Response Status O

Cl 55 SC 55.3.8 P 161 L 22 Comment # 596
 Tellado, Jose Teranetics
 Comment Type T Comment Status X
 Aux bit is unused
 SuggestedRemedy
 Set to zero
 Proposed Response Response Status O

Cl 55 SC 55.3.8 P 161 L 22 Comment # 649
 Yagil, Ariel Texas Instruments
 Comment Type T Comment Status X
 Aux bit value is never specified
 SuggestedRemedy
 Specify to set Aux bit value to zero
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.3.8 P 161 L 26 Comment # 365
 Barrass, Hugh Cisco Systems

Comment Type E Comment Status D

It is a bad idea to put the references for the matrix generator in this position and in Annex 55A

Following the example of other complex annexes (such as 61B), it is better to make a normative annex with all of the matrix generator information.

Note that this comment must be taken in conjunction with the following comment to insert the information in Annex 55A.

SuggestedRemedy

Replace the following:

"The file http://www.ieee802.org/3/an/private/gen_802.3an.txt contains a representation of G. gen_802.3an.txt contains 1723 rows, one for each row of G. Each row has numbers ranging from 0 to 2047 separated by spaces. Each number represents the column index of the "1" entries in the specific row. All other entries of G are "0". G can also be constructed from P, which is available in PDF format online at <https://www.ieee802.org/3/an/private/????.pdf>. Annex 55A is an informative annex that describes how G was obtained from a sparse parity check matrix."

With:

"The definition and origin of G and P are described in Annex 55A."

Remove the editor's note on line 34

Proposed Response Response Status O

Cl 55 SC 55.3.9 P 161 L Comment # 387
 Juan M. Jover Phytel Technologies, I

Comment Type TR Comment Status D linecode

I disagree with the appropriateness of the 128 DSQ line code for this problem.

Issues:

a) Total noise budget is too low.

b) Unprotected bits by the LDPC code present problems with noise events as described in Rao_1_1104.pdf, slide 23.

SuggestedRemedy

Change line code.

Proposed Response Response Status W

PROPOSED REJECT.

Cl 55 SC 55.3.9 P 162 L 4 Comment # 390
 Beck, Michael Alcatel Bell n.v.

Comment Type ER Comment Status D

Most of this page consists of bit mapping rules, formatted as text paragraphs. Format these rules either as equations (indented paragraphs, variables in italics, equation number flush-right) or as code (fixed-width font), whichever is deemed appropriate.

SuggestedRemedy

Format the rules either as equations (indented paragraphs, variables in italics, equation number flush-right) or as code (fixed-width font), whichever is deemed appropriate.

Proposed Response Response Status O

Cl 55 SC 55.4 P 3 L 58 Comment # 322
 Dawe, Piers Agilent

Comment Type TR Comment Status D

The draft seems to say that a Tomlinson-Harashima precoder is used but I didn't find any information or specification for it in the draft.

SuggestedRemedy

Add the necessary information, specifications and/or references.

Proposed Response Response Status W

Cl 55 SC 55.4.2.2 P 175 L 42 Comment # 667
 Yagil, Ariel Texas Instruments

Comment Type E Comment Status X

The sentence: "If loop timing is not implemented, the SLAVE PHY clocking is identical to the MASTER PHY clocking." is not clear.

SuggestedRemedy

Replace sentence with: If loop timing is not implemented, the SLAVE PHY transmit clocking is identical to the MASTER PHY transmit clocking.

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.4.2.3 P 175 L 57 Comment # 668
 Yagil, Ariel Texas Instruments

Comment Type T Comment Status X

The meaning of "equivalent LFER" in the sentence "The PMA shall translate the signals received on pairs BI_DA, BI_DB, BI_DC, and BI_DD into the PMA_UNITDATA.indicate parameter rx_symb_vector with equivalent LFER of less than 3.2*10-9 over a channel meeting the requirements of 55.7." is not clear. Note that the above LFER is achieved after LDPC decoding, which is done in the PCS.

SuggestedRemedy

Change the sentence to: "The PMA shall translate the signals received on pairs BI_DA, BI_DB, BI_DC, and BI_DD into the PMA_UNITDATA.indicate parameter rx_symb_vector. The quality of these symbols shall allow LFER of less than 3.2*10-9 after LDPC decoding, over a channel meeting the requirements of 55.7."

Proposed Response Response Status O

Cl 55 SC 55.4.2.3 P 176 L 9 Comment # 403
 Barrass, Hugh Cisco Systems

Comment Type T Comment Status X

The objectives in 55.1.4 include:

- Ability to automatically detect and correct for pair swapping and unexpected crossover connections.
- Ability to automatically detect and correct for incorrect polarity in the connections.
- Ability to automatically correct for differential delay variations across the wire-pairs.

These should be captured in this section.

SuggestedRemedy

Add the following paragraph:

The receiver uses the sequence of symbols during the training sequence to detect and correct for pair swaps and unexpected crossovers. The receiver pairs BI_DA, BI_DB, BI_DC and BI_DD might be connected to any arbitrary manner to the corresponding transmit pairs. The receiver also detects and corrects for polarity mismatches on any pairs and corrects for differential delay variations across the wire-pairs.

Proposed Response Response Status O

Cl 55 SC 55.4.2.4 P 176 L Comment # 669
 Yagil, Ariel Texas Instruments

Comment Type T Comment Status X

Specification of the usage and fields of the InfoField is not clear. For example, it is not clear if in the Message Field more than 1 bit is allowed to be 1. Relations with Figure 55-18 are not. For example, are PBOintM/S and THPinitS/M equal to the requested PBO and THP by the remote device?

SuggestedRemedy

Clarify the specification of the fields of InfoField and their relation to Figure 55-18

Proposed Response Response Status O

Cl 55 SC 55.4.2.4 P 176 L 31 Comment # 472
 McClellan, Brett Solarflare

Comment Type T Comment Status X

In the current Info Field definition there is no defined way to denote that the current values for "Next transmitter setting" and "Requested remote transmitter setting" are not yet valid.

SuggestedRemedy

Change the unused bits (bit 7) in the those bytes to denote a "Valid" setting.

Proposed Response Response Status O

Cl 55 SC 55.4.2.4 P 176 L 46 Comment # 468
 McClellan, Brett Solarflare

Comment Type T Comment Status X

The CRC16 described in this section does not have an implementation diagram. To avoid confusion, it should also be noted that the bits in the diagram are transmitted MSB first.

SuggestedRemedy

Add a CRC implementation diagram similar to Fig 55-11. Additionally, there should be a note: "The CRC16 bits shown in Fig 55-xx are transmitted MSB first." "After 10 octets have been processed, the switch is disconnected (setting CRCout) and the 16 values stored in the delay elements are transmitted in the order illustrated, first S15, followed by S14, and so on until the final value S0.

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.4.2.4 P 176 L 51 Comment # 688
 Powell, Scott Broadcom
 Comment Type T Comment Status X
 Power backoff levels in text do not match power backoff levels in table 55 2.
 SuggestedRemedy
 Either change text to match table or just reference table 55 2 for levels.
 Proposed Response Response Status O

Cl 55 SC 55.4.2.4 P 181 L 30 Comment # 595
 Tellado, Jose Teranetics
 Comment Type TR Comment Status X
 The PHY control state diagram, Figure 55-18 does not allow the Master to select the THP_s setting that is best for the Master rx design and noise/xtalk. Moreover during 'PMA training Init S' the Master rx does not know what THPinitS the Slave has selected.
 SuggestedRemedy
 Allow the Master to select the THP_s with IF_M (i.e. THP_s <= THP IF_M)
 Since the Master will pick the desired THP_s, during PMA Training Init S the Slave should use the same THP_incr the Master is using to simplify the Master rx Training Init training.
 Proposed Response Response Status O

Cl 55 SC 55.4.3.1 P 172 L 15 Comment # 14004
 Sailesh Rao Phyten Technologies, I
 Comment Type TR Comment Status D D1.4 removethp
 There is no need for a THP Bypass mode during normal operation in the standard.
 1. The THP Bypass mode is not needed for noise margin purposes for 0m operation.
 2. If a THP Bypass mode is made available during normal operation, then implementers who are building PHYs based on just the THP Bypass mode will gain a competitive advantage if the specified THP coefficients are all unusable. At present, in Draft D1.3, the THP filters specified are all unusable if 1000BASE-T Alien FEXT/NEXT are the dominant noise sources in the cable plant.

SuggestedRemedy
 Delete the THP Bypass mode and free up the address space for useful purposes.
 Proposed Response Response Status W
 PROPOSED REJECT.
 The task force has agreed that the bypass THP is desirable for very short channels.

This comment was resubmitted from D1.4 by the editor.

An identical comment has been resubmitted by the commenter. See response to comment 384

Cl 55 SC 55.4.3.1 P 178 L Comment # 671
 Yagil, Ariel Texas Instruments
 Comment Type TR Comment Status X
 I believe that a mode with THP coefficients programmed by the remote device should be mandatory for the following reasons:
 1. In my opinion, the coverage of the measured channels used by the TF is not sufficient to guarantee that any complaint channel will provide sufficient SNR margin with a set of 3 fixed THP coefficients.
 2. The high tolerance of the transmit PSD (>6dB amplitude tolerance, no phase requirements) also contributes to the uncertainty of the overall channel
 3. Programmable THP would reduce the risk. It would also allow more freedom in the design of the receiver analog front end.
 SuggestedRemedy
 Add programmable THP mode
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.4.3.1 P 178 L 1 Comment # 473
 McClellan, Brett Solarflare

Comment Type T Comment Status X

Previous contributions have shown that programmable THP coefficients provide SNR improvements over the fixed THP sets. We are proposing mandatory support for a programmable 16-tap THP. This will require an exchange of 16 coefficients per cable pair with up to 8-bits per coefficient. See presentation.

SuggestedRemedy

Change text to reflect the programmable THP proposal.

Proposed Response Response Status O

Cl 55 SC 55.4.3.1 P 178 L 20 Comment # 701
 Powell, Scott Broadcom

Comment Type TR Comment Status X

Loosely constrained transmit PSD mask makes predetermined fixed set of precoding functions impractical.

SuggestedRemedy

Add requirement for transmitters to support programmable precoder with FIR precoding polynomial. See ungerboeck_1_0505.pdf for details.

Proposed Response Response Status O

Cl 55 SC 55.4.3.1 P 178 L 20 Comment # 452
 Healey, Adam Agere Systems

Comment Type TR Comment Status X

The THP as currently specified will result in major interoperability problems that will jeopardize the success of 10GBaseT.

- First, two alternative precoders structures IIR or FIR are supported by the standard thus requiring for each PHY interoperability with a remote PHY that implements IIR or FIR.

- The proposed coefficients for IIR include a zero at $F_s/2$ to support TIS. But the FIR set does not include that zero. This will lead to interoperability issues for PHYs that implement TIS.

- It has been shown by a number of contributors that fixing the precoder response results in a significant performance loss for some channel configurations. It also benefits some specific receiver configurations, which is unfair.

SuggestedRemedy

Remove the IIR precoders from the standard.

Adopt programmable THP during startup using the Info Fields as per kota_1_0305.pdf

The coefficients for the FIR will be exchanged during startup using the Info Fields. The PHY Control state machine will also be changed so that independent settings for THP are allowed at both ends of the link.

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.4.3.1 P 178 L 2060 Comment # 298
 Reviriego, Pedro Agere Systems

Comment Type T Comment Status D thp - programmable

The THP as currently specified will result in major interoperability problems that will jeopardize the success of 10GBaseT.

- First, two alternative precoders structures IIR or FIR are supported by the standard thus requiring for each PHY interoperability with a remote PHY that implements IIR or FIR.
- The proposed coefficients for IIR include a zero at $F_s/2$ to support TIS. But the FIR set does not include that zero. This will lead to interoperability issues for PHYs that implement TIS.
- It has been shown by a number of contributors that fixing the precoder response results in a significant performance loss for some channel configurations. It also benefits some specific receiver configurations, which is unfair.

SuggestedRemedy

Remove the IIR precoders from the standard.

Adopt programmable THP during startup using the Info Fields as per kota_1_0305.pdf

The coefficients for the FIR will be exchanged during startup using the Info Fields. The PHY Control state machine will also be changed so that independent settings for THP are allowed at both ends of the link.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment is identical to comment 385. See response to comment 385

Cl 55 SC 55.4.3.1 P 178 L 20-6 Comment # 385
 Robert Brink Agere Systems

Comment Type TR Comment Status D thp - programmable

The THP as currently specified will result in major interoperability problems that will jeopardize the success of 10GBaseT.

- First, two alternative precoders structures IIR or FIR are supported by the standard thus requiring for each PHY interoperability with a remote PHY that implements IIR or FIR.
- The proposed coefficients for IIR include a zero at $F_s/2$ to support TIS. But the FIR set does not include that zero. This will lead to interoperability issues for PHYs that implement TIS.
- It has been shown by a number of contributors that fixing the precoder response results in a significant performance loss for some channel configurations. It also benefits some specific receiver configurations, which is unfair.

SuggestedRemedy

Remove the IIR precoders from the standard.

Adopt programmable THP during startup using the Info Fields as per kota_1_0305.pdf

The coefficients for the FIR will be exchanged during startup using the Info Fields. The PHY Control state machine will also be changed so that independent settings for THP are allowed at both ends of the link.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.4.3.1 P 178 L 24 Comment # 384
 Sailesh Rao Phytent Technologies, I

Comment Type TR Comment Status D

- There is no need for a THP Bypass mode during normal operation in the standard.
1. The THP Bypass mode is not needed for noise margin purposes for 0m operation.
 2. If a THP Bypass mode is made available during normal operation, then implementers who are building PHYs based on just the THP Bypass mode will gain a competitive advantage if the specified THP coefficients are all unusable. At present, in Draft D2.0, the THP filters specified are all unusable if 1000BASE-T Alien FEXT/NEXT are the dominant noise sources in the cable plant.

SuggestedRemedy

Delete the THP Bypass mode and free up the address space for useful purposes.

Proposed Response Response Status W

PROPOSED REJECT.

The task force has agreed that the bypass THP is desirable for very short channels.

This comment identical to one that was resubmitted from D1.4 by the editor (14004)

IEEE P802.3an Comments

Cl 55 SC 55.4.3.1 P 178 L 58 Comment # 300
 Puneet, Agarwal Braodcom

Comment Type T Comment Status D powerbackoff

It is not clear why you need the power backoff. What is the goal and the expected performance? What are we trying to prevent here: interference with other cables, power saving, something else??

SuggestedRemedy

Please state the problem being addressed, how this map into the need for power backoff and how well does the proposed method satisfies these requirements. Essentially specify the objective(s), the requirements derived from these objects and how the proposed backoff scheme satisfies these requirements

Proposed Response Response Status W

PROPOSED REJECT.

Power backoff is a commonly used technique in communication systems. Editor understands commenter is requesting a tutorial on the subject of power backoff but there is no room for that in the draft.

Cl 55 SC 55.4.3.1 P 179 L 1 Comment # 689
 Powell, Scott Broadcom

Comment Type TR Comment Status X

Sentence unclear: "The estimation of the received signal power (dBm) at the MDI, must be computed assuming the remote TX is at nominal power." What is meant by the "nominal power" of the remote TX when it will be variable according to the same power backoff schedule referenced to the "nominal power" of the local TX ?

SuggestedRemedy

Define "nominal power" and clarify how TX and RX power levels are resolved.

Proposed Response Response Status O

Cl 55 SC 55.4.3.1 P 179 L 1 Comment # 357
 Ali, Ghiasi Broadcom

Comment Type TR Comment Status D powerbackoff

Power backoff scheme is unclear. It appears that the power of the remote TX can vary depending on it's own received power which is the function of the local TX. However the power of the local TX can vary depending on it's own RX power which is a function of the remote TX

SuggestedRemedy

It is not clear how one uses the received power can used to deterministically set power backoff levels

Proposed Response Response Status O

Cl 55 SC 55.4.3.1 P 179 L 1 Comment # 674
 Telang, Vivek Broadcom Corp.

Comment Type TR Comment Status X

Much of the received signal power will be comprised of return loss from the local transmitter. Does the "received signal power" of table 55 2 assume the echo, NEXT, and FEXT have been subtracted prior to measuring the level ? If so, does this imply some sort of blind algorithm is necessary to perform the cancellation since power backoff is set prior to receiving valid data ?

SuggestedRemedy

Replace "received power" with a more appropriate metric for power backoff, such as decision point SNR, or simply leave it as a function of estimated cable length.

Proposed Response Response Status O

Cl 55 SC 55.4.3.1 P 179 L 8 Comment # 694
 Powell, Scott Broadcom

Comment Type TR Comment Status X

(Resubmission of comment 23 from last meeting deferred by task force) Power backoff schedule designed without consideration of susceptibility to external interference. Accepted resolution to comment 23 last meeting: "The power backoff levels chosen are subject to further study for EMI susceptibility."

SuggestedRemedy

Sufficient analysis/data should be presented to the task force to permit the addition of the following statement in the standard "back off levels are chosen to allow sufficient margin to comply with common local and national codes for EMI susceptibility."

Proposed Response Response Status O

Cl 55 SC 55.4.3.1 P 179 L 9 Comment # 161
 David V James JGG

Comment Type E Comment Status D

DVJ-161
 Misleading capitalization

SuggestedRemedy

Length(m) (Reference)
 ==>
 Length(m) (reference)

Proposed Response Response Status W

PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 55 SC 55.4.3.1 P 179 L 9 Comment # 162
 David V James JGG
 Comment Type E Comment Status D
 DVJ-162
 Misleading capitalization
 SuggestedRemedy
 Minimum Power Backoff
 ==>
 Minimum power backoff
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.4.4 P 179 L 49 Comment # 268
 Dove, Daniel HP ProCurve Networki
 Comment Type ER Comment Status D cleanup
 #Crossref# appears in the text
 SuggestedRemedy
 Fix it.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 This clean up will be done later. The #Crossref# is there explicitly to enable IEEE editorial staff to spot it and fix it.

Cl 55 SC 55.4.4 P 179 L 50 Comment # 404
 Barrass, Hugh Cisco Systems
 Comment Type T Comment Status X
 This clause is incomplete according to the objectives in 55.1.4
 SuggestedRemedy
 Append to the final sentence "noting that the function is mandatory"
 Add a second paragraph:
 Having established MDI/MDI-X configuration, the receiver shall detect and correct for pair swaps; unexpected crossovers and polarity swaps. The receiver pairs BI_DA, BI_DB, BI_DC and BI_DD might be connected to any arbitrary manner to the corresponding transmit pairs with arbitrary polarity. The receiver shall correct for differential delay variations of up to 50nS across the wire-pairs.
 Proposed Response Response Status O

Cl 55 SC 55.4.5.1 P 180 L 8 Comment # 698
 Powell, Scott Broadcom
 Comment Type T Comment Status X
 Values for power backoff are not consistent with table 55 2.
 SuggestedRemedy
 Reference table 55 2 rather than list values.
 Proposed Response Response Status O

Cl 55 SC 55.4.5.1 P 181 L Comment # 670
 Yagil, Ariel Texas Instruments
 Comment Type T Comment Status X
 Figure 55-18 is not clear. For example:
 1. The variable THPm and THPs are not defined
 2. The values PBO_incr, THP_incr, PBOinit, PBOinitS, THPinitS, PBOinitM and THPinitM are not defined
 3. It is not clear what happens if the MASTER does not receive IFs when in PMA Training Init M state. In this case there is no value for transition_count, and the device is stuck in this state
 4. The text to the right of PMA Training Init M state is not clear
 5. Failure of PCS status it seems that startup is not reinitiated when pcs_status or scr_status become not ok.
 SuggestedRemedy
 Clarify the state diagram
 Proposed Response Response Status O

Cl 55 SC 55.4.5.2 P 180 L 45 Comment # 699
 Powell, Scott Broadcom
 Comment Type T Comment Status X
 PBO values in text on line 45 and in figure 55 18 do not coincide with table 55 2.
 SuggestedRemedy
 Reference PBO variable value (ie: 1 to 8) rather than actual dB backoff level.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.4.5.2 P 180 L 46 Comment # 469
 McClellan, Brett Solarflare

Comment Type T Comment Status X

In the PMA Training Init M state, the master must transition to the next PBO setting even if the slave responds with a training pattern but the master has not yet decoded the IF_s. I propose that the "maxincr_timer" be changed such that it does not timeout when the master detects a response (training pattern) from the slave.

SuggestedRemedy

Change text to:
 The timer shall not expire while PBO = -6 or when the master has detected a training pattern transmitted by the slave.

Proposed Response Response Status O

Cl 55 SC 55.4.6 P 181 L 1 Comment # 470
 McClellan, Brett Solarflare

Comment Type T Comment Status X

In the PMA Training Init M & S states, both the master and slave are waiting for a transition announcement from the other device before going to the PMA Training Update M & S states. Furthermore, "transition_count" has no defined min/max values. In the worst case, one device can announce a transition change with a counter value of 0. I propose that the master initiates the transition count with "trans_to_Training_Update" flag and a minimum counter value of 2^9 (10ms) and maximum of 2^12 - 1, and that the slave responds prior to the counter reaching 2^64 (1ms) with the same flag and a count value matching the master. Then both PHY's will transition simultaneously to PMA Training Update.

SuggestedRemedy

Add text to the "transition_count" definition on page 180.
 "The master initiates the transition count with "trans_to_Training_Update" flag and a minimum counter value of 2^9 (10ms) and maximum of 2^12 - 1.
 The slave responds prior to the counter reaching 2^64 (1ms) with the same flag and a count value matching the master. Then both PHY's will transition simultaneously to PMA Training Update.

Proposed Response Response Status O

Cl 55 SC 55.4.6.1 P 181 L 1 Comment # 700
 Powell, Scott Broadcom

Comment Type TR Comment Status X

Further definition required for an interoperable start-up procedure.

SuggestedRemedy

Further definition has been submitted in a supporting presentation (powell_1_0505.pdf).

Proposed Response Response Status O

Cl 55 SC 55.4.6.1 P 181 L 25 Comment # 471
 McClellan, Brett Solarflare

Comment Type T Comment Status X

According to the current state machine in "PMA Training Init S", the master may end up transmitting with PBO = -6 for a long time, but the slave is allowed to respond with any PBO setting (including PBO=-14). This would require the master to train and reliably decode the Info Fields from the slave in the presence of a 8dB larger Echo and NEXT vs the far end signal. There needs to be a limitation on the PBO setting used by the slave at this point. I propose that the slave respond with the exact same PBO used by the master (PBO_m). The master and slave may both request an adjustment to the PBO settings in the transition to "PMA Training Update".

Additionally, at this same point the slave may choose to respond to PBO setting from the master that does not have sufficient margin for both the master and slave to reliably train and decode the Info Fields.

SuggestedRemedy

Change text in "PMA Training Init S" to:
 "PBO_s <= PBO_m"

Add an informative note that the slave should respond to a PBO setting from the master that provides sufficient margin for reliable decoding Info Field for both the master and slave.

Proposed Response Response Status O

IEEE P802.3an Comments

CI 55 SC 55.4.6.1 P 181 L 6 Comment # 453
 Healey, Adam Agere Systems

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

The Phy Control in figure 55-18 assumes:

- Fix THP precoders
- Same THP settings for both the local and the remote PHY

Fixing the precoders has serious drawback as stated in a separate comment.

As the noise environment can be different at both ends of the link and so can be the PHYs and therefore the receivers using the same settings at both ends can result in significant performance loss.

SuggestedRemedy
 Adopt programmable THP as per kota_1_0305.pdf

This includes a change in the PHY Control state machine so that independent settings for THP are allowed at both ends of the link.

Proposed Response Response Status **O**

CI 55 SC 55.4.6.1 P 181 L 6-60 Comment # 386
 Robert Brink Agere Systems

Comment Type **TR** Comment Status **D** *thp - programmable*

The Phy control in figure 55-18 assumes:

- Fix THP precoders
- Same THP settings for both the local and the remote PHY

Fixing the precoders has serious drawback as stated in a previous comment

As the noise environment can be different at both ends of the link and so can be the PHYs and therefore the receivers using the same settings at both ends can result in significant performance loss.

SuggestedRemedy
 Adopt programmable THP as per kota_1_0305.pdf

This includes a change in the PHY Control state machine so that independent settings for THP are allowed at both ends of the link.

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

CI 55 SC 55.4.6.1 P 181 L 660 Comment # 299
 Reviriego, Pedro Agere Systems

Comment Type **T** Comment Status **D** *thp - programmable*

The Phy control in figure 55-18 assumes:

- Fix THP precoders
- Same THP settings for both the local and the remote PHY

Fixing the precoders has serious drawback as stated in a previous comment

As the noise environment can be different at both ends of the link and so can be the PHYs and therefore the receivers using the same settings at both ends can result in significant performance loss.

SuggestedRemedy
 Adopt programmable THP as per kota_1_0305.pdf

This includes a change in the PHY Control state machine so that independent settings for THP are allowed at both ends of the link.

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

This comment is identical to comment 386 which is TR. See response to comment 386

CI 55 SC 55.4.6.2 P 182 L 10 Comment # 163
 David V James JGG

Comment Type **T** Comment Status **D** *statemachine notation*

DVJ-163
 State machines in the base document sometimes use underscores, sometimes not.

SuggestedRemedy
 Use underscores in the state names, so that they can be more easily parsed when used elsewhere.
 Do this everywhere.

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

CI 55 SC 55.4.6.2 P 183 L 1 Comment # 577
 Booth, Brad Intel

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

Remove empty pages.

SuggestedRemedy
 As per comment.

Proposed Response Response Status **O**

IEEE P802.3an Comments

Cl 55 SC 55.4.6.2 P 183 L 1 Comment # 335
 Dawe, Piers Agilent
 Comment Type E Comment Status D
 Two blank pages
 SuggestedRemedy
 Remove them
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 This is an artifact of editing and will be cleaned up in the end.

Cl 55 SC 55.5 P 175-194 L Comment # 288
 Reviriego, Pedro Agere Systems
 Comment Type E Comment Status D
 The header for this section is Draft 1.4
 SuggestedRemedy
 change test to 'Draft 2.0'
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Where is the 1.4 showing up?

Cl 55 SC 55.5.2 P 185 L 26 Comment # 396
 Christopher DiMinico MC Communications
 Comment Type T Comment Status D pmaelec
 The note is not in context as it precedes the usage of Fs. Avoid introducing a subclause with a note.
 SuggestedRemedy
 Delete Note: Fs equals 800 MHz ± 50ppm. Later in the text, when a specific tolerance on the symbol rate is not specified, it is assumed to be this.
 Change: From:When test mode 4 is enabled, the PHY shall transmit, with the THP turned off transmitted symbols, timed from an Fs clock in the MASTER timing mode, defined by the bits 7.9.12:10 and Table 55-4.
 To: When test mode 4 is enabled, the PHY shall transmit, with the THP turned off, transmitted symbols, timed from a transmit clock (as specified in 55.5.3.5) in the MASTER timing mode, defined by the bits 7.9.12:10 and Table 55-4.
 Proposed Response Response Status O

Cl 55 SC 55.5.2 P 186 L 23 Comment # 489
 Chris, Pagnanelli Solarflare Communicat
 Comment Type E Comment Status X
 In Table 55-3, use of the word "mandatory" in the description of test mode 7 may be misinterpreted as meaning only test mode 7 is mandatory.
 SuggestedRemedy
 Delete the word "mandatory" from the text describing test mode 7 in Table 55-3 (table row 9, table column 4).
 Proposed Response Response Status O

Cl 55 SC 55.5.2 P 186 L 27 Comment # 490
 Chris, Pagnanelli Solarflare Communicat
 Comment Type T Comment Status X
 The description of test mode 1 incorrectly states that the PHY shall transmit the PMA training pattern from all four transmitters. The SLAVE jitter test requires that, in test mode 1, the PHY transmit the PMA training pattern on transmitters A, B, and C, and transmit silence on pair D (see subclause 55.5.3.3).
 Also, in the description of test mode 1, identifying the PMA training pattern as "PRBS 33" may be misinterpreted as meaning a training pattern different from the training pattern defined in subclause 55.3.16.2 with respect to the Sync Bit being on or off.
 SuggestedRemedy

Change the description of test mode 1 to read: "When test mode 1 is enabled, the PHY shall transmit the PMA training pattern, as defined in clause 55.3.16.2, continually on pairs A, B, and C. The PHY shall transmit silence on pair D."
 Proposed Response Response Status O

Cl 55 SC 55.5.2 P 186 L 6 Comment # 464
 McClellan, Brett Solarflare
 Comment Type E Comment Status X
 Typo: 1.132.9.13 should be 1.132.13
 SuggestedRemedy
 Change text to:
 1.132.13
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.5.2 P 186 L 9 Comment # 164
 David V James JGG
 Comment Type E Comment Status D
 DVJ-164
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 1.132.15m 1.132.14, 1.132..13
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Will be done later by the professional editorial staff of the IEEE

Cl 55 SC 55.5.2 P 187 L 25 Comment # 491
 Chris, Pagnanelli Solarflare Communicat
 Comment Type T Comment Status X
 The description of the peak to peak levels does not specify the relative amplitudes of the two sine waves generated for the dual tone transmitter linearity test.
 SuggestedRemedy
 Change the text to read: "The peak to peak levels used in this test, for both single and dual frequency tones, shall correspond to the +/- 16 symbol levels. For dual frequency tones, the relative amplitudes of each tone shall be equal."
 Proposed Response Response Status O

Cl 55 SC 55.5.2 P 187 L 9 Comment # 165
 David V James JGG
 Comment Type E Comment Status D
 DVJ-165
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 1.132.12, 1.132.11, 1.132.10
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Will be done later by the professional editorial staff of the IEEE

Cl 55 SC 55.5.2 P 189 L 4 Comment # 493
 Chris, Pagnanelli Solarflare Communicat
 Comment Type T Comment Status X
 Tolerances are not specified for the center frequency and noise bandwidth of the bandpass filter shown in Figure 55-22. Tolerances of +/-200 kHz result in jitter measurement errors of less than +/- 0.25 ps.
 SuggestedRemedy
 Add text to Figure 55-22 indicating that the BPF center frequency (Fc) is 200 MHz +/- 200 kHz; and the BPF noise bandwidth (Bn) is 2 MHz +/- 200kHz.
 Proposed Response Response Status O

Cl 55 SC 55.5.2.1 P 188 L 10 Comment # 169
 David V James JGG
 Comment Type E Comment Status D
 DVJ-169
 Misleading capitalization
 SuggestedRemedy
 Transmitter Under Test
 ==>
 Transmitter under test
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.5.2.1 P 188 L 15 Comment # 168
 David V James JGG
 Comment Type E Comment Status D
 DVJ-168
 Misleading capitalization
 SuggestedRemedy
 High Impedance Differential Probe,
 ==>
 High impedance differential probe
 Proposed Response Response Status W
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 55 SC 55.5.2.1 P 188 L 18 Comment # 166
 David V James JGG
 Comment Type E Comment Status D
 DVJ-166
 Misleading capitalization
 SuggestedRemedy
 Digital Oscilloscope or Data Acquisition Module
 ==>Digital oscilloscope or data acquisition module
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.5.2.1 P 188 L 23 Comment # 167
 David V James JGG
 Comment Type E Comment Status D
 DVJ-167
 Misleading capitalization
 SuggestedRemedy
 Transmitter test fixture 1 for Transmitter droop measurement
 ==>
 Transmitter test fixture 1 for transmitter droop measurement
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.5.2.1 P 188 L 30 Comment # 173
 David V James JGG
 Comment Type E Comment Status D
 DVJ-173
 Inconsistent figure fonts.
 SuggestedRemedy
 Use 8-point Arial.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.5.2.1 P 188 L 32 Comment # 170
 David V James JGG
 Comment Type E Comment Status D
 DVJ-170
 Misleading capitalization
 SuggestedRemedy
 Transmitter Under Test
 ==>
 Transmitter under test
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.5.2.1 P 188 L 32 Comment # 171
 David V James JGG
 Comment Type E Comment Status D
 DVJ-171
 Misleading capitalization
 SuggestedRemedy
 Spectrum Analyzer
 ==>
 Spectrum analyzer
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.5.2.1 P 188 L 7 Comment # 492
 Chris, Pagnanelli Solarflare Communicat
 Comment Type T Comment Status X
 The electrical characteristics of the high impedance probe shown in Figure 55-20 are not properly defined.
 SuggestedRemedy
 Add text to Figure 55-20 indicating that the high impedance probe shall have resistance > 10 kohm and capacitance < 1 pF.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.5.2.1 P 188 L 8 Comment # 172
 David V James JGG
 Comment Type E Comment Status D
 DVJ-172
 Inconsistent figure fonts.
 SuggestedRemedy
 Use 8-point Arial.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.5.2.1 P 189 L Comment # 446
 Wael William Diab Cisco Systems
 Comment Type ER Comment Status X
 Please remove any color from Figure 55-22.
 SuggestedRemedy
 Ensure that the figure is drawn in Frame without color.
 Proposed Response Response Status O

Cl 55 SC 55.5.2.1 P 189 L 13 Comment # 175
 David V James JGG
 Comment Type E Comment Status D
 DVJ-175
 Misleading capitalization
 SuggestedRemedy
 Transceiver under test (Configured to transmit 200 MHz signal)
 ==>
 Transceiver under test (configured to transmit 200 MHz signal)
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.5.2.1 P 189 L 21 Comment # 176
 David V James JGG
 Comment Type E Comment Status D
 DVJ-176
 Misleading capitalization
 SuggestedRemedy
 Bandlimited Jitter Analyzer
 ==>
 Bandlimited jitter analyzer
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.5.2.1 P 189 L 6 Comment # 177
 David V James JGG
 Comment Type E Comment Status D
 DVJ-177
 Inconsistent figure fonts.
 SuggestedRemedy
 Use 8-point Arial.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.5.2.1 P 189 L 6 Comment # 174
 David V James JGG
 Comment Type E Comment Status D
 DVJ-174
 Misleading capitalization
 SuggestedRemedy
 Transceiver in Test
 ==>
 Transceiver in test
 Proposed Response Response Status W
 PROPOSED ACCEPT.

IEEE P802.3an Comments

CI 55 SC 55.5.3.1 P 189 L 38 Comment # 269

Dove, Daniel HP ProCurve Networki

Comment Type TR Comment Status D pmaelec droop

To be honest, I can not figure out what this says. It is not clear.

SuggestedRemedy

Please reword this so it is understandable, or provide an illustration with the text to improve readability.

Specifically, I have trouble with the part "over a period of .08uS measured after a settling time of 10nS after the zero crossing shall be less than 10% of the initial value."

Why use .08uS in one part, and 10nS in the other? Why not use 80nS and 10nS?

Are you saying that relative to the zero crossing in time, the difference between the voltage at 10nS and the voltage at 90nS shall be within 10% of each other?

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change .08microsec to 80ns for consistency.

Dan's interpretation is correct. Discuss need for adding illustration.

CI 55 SC 55.5.3.1 P 189 L 39 Comment # 494

Chris, Pagnanelli Solarflare Communicat

Comment Type E Comment Status X

The description of the droop test is worded in a way that makes the location of the initial and final measurement points confusing.

SuggestedRemedy

Change text to read: "With the transmitter in test mode 6 and using the transmitter test fixture 1, the magnitude of both the positive and negative droop shall be less than 10%, measured with respect to an initial value at 0.01 usec after the zero crossing and a final value at 0.09 usec after the zero crossing."

Proposed Response Response Status O

CI 55 SC 55.5.3.1 P 189 L 40 Comment # 336

Dawe, Piers Agilent

Comment Type E Comment Status D

Use proper abbreviations

SuggestedRemedy

Change 'usec' to 'us' here, 'msec' to 'ms' in 55.5.3.3 (twice).

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

CI 55 SC 55.5.3.2 P 189 L 50 Comment # 475

Thaler, Pat Agilent Technologies

Comment Type TR Comment Status X

SFDR is not in the acronyms list and is not defined

SuggestedRemedy

Define SFDR and, if appropriate, add to acronym list.

Proposed Response Response Status O

CI 55 SC 55.5.3.2 P 189 L 54 Comment # 270

Dove, Daniel HP ProCurve Networki

Comment Type ER Comment Status D pmaelec sfdr

SFDR.. what does this stand for? "Simply Fabulous Data Rate"?

SuggestedRemedy

Please define all acronyms prior to using them.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Text on page 190 top currently reads:

The SFDR of the transmitter, for dual tone inputs, producing output with peak to peak transmi amplitude, shall meet the requirement that:

SFDR >= (2.5+ min(52, 58-20xlog10(f/25)) (55-7)

where f is in MHz and SFDR is in dB and the spurs are the intermodulation products in the frequency range of 1 to 400MHz.

Change to:

IEEE P802.3an Comments

Cl 55 SC 55.5.3.2 P 190 L Comment # 579
 Babanezhad, Joseph Plato Networks

Comment Type TR Comment Status X
 In section 55.5.3.2 (page 190) Eq. (55-7) currently would require lower linearity with increasing frequency. With two tone test and because of nonlinearity we can have intermodulation terms that fall in lower frequencies.

SuggestedRemedy
 For those cases the linearity requirement should be specified not based on the two tone frequency but the frequency of the resulting intermodulation term.

Proposed Response Response Status O

Cl 55 SC 55.5.3.2 P 190 L 8 Comment # 495
 Chris, Pagnanelli Solarflare Communicat

Comment Type T Comment Status X
 Two-tone SFDR is not precisely defined.

SuggestedRemedy
 Change text starting on line 8 of page 190 to read "where f is in MHz (maximum frequency of the two tones) and SFDR is the ratio in dB of the minimum RMS value of either input tone to the RMS value of the worst intermodulation product in the frequency range of 1 to 400 MHz."

Proposed Response Response Status O

Cl 55 SC 55.5.3.3 P 190 L 17 Comment # 271
 Dove, Daniel HP ProCurve Networki

Comment Type TR Comment Status D pmaelec jitter
 "the transmitter output shall..."

SuggestedRemedy
 Change the word "shall" to "will" as it is not necessary to define it this strictly in the text. Also change the "shall" on line 28 and do a global review of the term "shall" to make sure you are not unnecessarily using the term.

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Make specific changes identified from "shall" to "will" and review usage of "shall" globally.

Cl 55 SC 55.5.3.3 P 190 L 30 Comment # 496
 Chris, Pagnanelli Solarflare Communicat

Comment Type T Comment Status X
 Absolute RMS jitter is not precisely defined.

SuggestedRemedy
 Add the following text at the end of subclause 55.5.3.3: "Absolute RMS jitter over an integration time interval of 1 msec +/- 10%, shall be defined as the root mean square period difference from the average period (T-Tavg), accumulated over a sample size of 200,000 +/- 20,000:

$$\text{jitter} = \sqrt{\text{sum}[(T-T\text{avg})^2]/\text{SampleSize}}."$$

Proposed Response Response Status O

Cl 55 SC 55.5.3.4 P 190 L 32 Comment # 497
 Chris, Pagnanelli Solarflare Communicat

Comment Type T Comment Status X
 The 5 MHz lower frequency of the lower PSD mask is not consistent with the intent of the transmitter droop requirement of subclause 55.5.3.1. The 5 MHz lower frequency allows use of a digital high pass filter during normal operation that causes excessive transmitter droop. This filter can be bypassed during droop testing.

SuggestedRemedy
 Change the lower frequency of the lower PSD mask from 5 MHz to 1 MHz.

Proposed Response Response Status O

Cl 55 SC 55.5.3.4 P 190 L 41 Comment # 592
 Tellado, Jose Teranetics

Comment Type TR Comment Status X
 Upper PSD mask is too high (integrates to almost 8dBm of tx power)

SuggestedRemedy
 Reduce upper PSD limit but at least 1dB at low frequencies and more between 200-600MHz to reduce the amount of worst case ANEXT

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.5.3.4 P 190 L 46 Comment # 690
 Powell, Scott Broadcom
 Comment Type **TR** Comment Status **X**
 Transmitter PSD mask does not indicate known zero at DC and permits arbitrary energy between DC and 1MHz.
 SuggestedRemedy
 Specify lower PSD mask for frequencies less than 5MHz. Suggestion: Upper PSD(0) <- 116dbm, Upper PSD(dc<f<5MHz) <-78dBm
 Proposed Response Response Status **O**

Cl 55 SC 55.5.3.4 P 190 L 46 Comment # 696
 Powell, Scott Broadcom
 Comment Type **TR** Comment Status **X**
 (Resubmission of comment 37 from last meeting deferred by task force.) The transmit PSD mask is defined too loosely. Accepted resolution: "The zero excess bandwidth concept should be discussed by the task force."
 SuggestedRemedy
 Transmit PSD mask should specify a zero at 400MHz. See presentation ungerboeck_1_0505.pdf to lead discussion.
 Proposed Response Response Status **O**

Cl 55 SC 55.5.3.4 P 191 L Comment # 447
 Wael William Diab Cisco Systems
 Comment Type **ER** Comment Status **X**
 Please remove any color from Figure 55-23.
 SuggestedRemedy
 Ensure that the figure is drawn in Frame without color.
 Proposed Response Response Status **O**

Cl 55 SC 55.5.3.4 P 191 L Comment # 672
 Yagil, Ariel Texas Instruments
 Comment Type **T** Comment Status **X**
 Tx PSD tolerance (>6dB) is to high and may create interoperability issues. It is desired that it would be possible to implement the transmitter such that the peak to peak voltage at the DAC will not be greater than 2V (the required ptp voltage of 100BASE-T and 1GBASE-T). Therefore, I believe that the Tx PSD tolerance should be reduced to its lower range.
 SuggestedRemedy
 Change Tx PSD limits to the lower 2-3dB of teh current limits
 Proposed Response Response Status **O**

Cl 55 SC 55.5.3.4 P 191 L 1 Comment # 691
 Powell, Scott Broadcom
 Comment Type **TR** Comment Status **X**
 Transmitter PSD mask permits a 6dB ripple up to 50MHz an -8dB ripple up to 200MHz, and > 8dB ripple from 200 to 400MHz. Equalization and precoding requirements differ for a smooth spectrum vs a spectrum with ripples.
 SuggestedRemedy
 Add a TBD ripple specification to the PSD mask.
 Proposed Response Response Status **O**

Cl 55 SC 55.5.3.4 P 191 L 1 Comment # 692
 Powell, Scott Broadcom
 Comment Type **TR** Comment Status **X**
 Analysis has not been presented to indicate a fixed set of TH precoders can properly equalize a channel with the large variation of transmit filtering permitted by the spectral mask of figure 55 23.
 SuggestedRemedy
 Show analysis to validate fixed precoders can be used in an environment with such a loosely defined transmit PSD -or- tighten PSD mask -or- abandon fixed precoders in favor of a programmable precoder (see ungerboeck_1_0505.pdf).
 Proposed Response Response Status **O**

IEEE P802.3an Comments

Cl 55 SC 55.5.3.4 P 191 L 35 Comment # 178
 David V James JGG
 Comment Type E Comment Status D
 DVJ-178
 Inconsistent figure fonts.
 SuggestedRemedy
 Use 8-point Arial.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.5.3.5 P 191 L 49 Comment # 397
 Christopher DiMinico MC Communications
 Comment Type T Comment Status D pmaelec
 Specify the transmit clock not the symbol.
 The symbol transmission rate on each pair of the master PHY shall be Fs which is 800MHz ± 50ppm.
 SuggestedRemedy
 Change: From: The symbol transmission rate on each pair of the master PHY shall be Fs which is 800MHz ± 50ppm.
 To: The symbol transmission rate on each pair of the master PHY shall be 800MHz ± 50ppm
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.5.3.5 P 191 L 49 Comment # 273
 Dove, Daniel HP ProCurve Networki
 Comment Type E Comment Status D pmaelec
 This sentence is highly redundant with 55.5.2's Note.
 SuggestedRemedy
 Remove the note or accept the redundancy.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.5.4.1 P 192 L 1 Comment # 498
 Chris, Pagnanelli Solarflare Communicat
 Comment Type T Comment Status X
 LDPC frame error rate cannot be impartially verified at the MAC interface using commercial Ethernet link analyzers. The receiver requirements specified in subclauses 55.5.4.1, 55.5.4.3 and 55.5.4.4 are based on LDPC frame error rate. LDPC frame error rate can be replaced with Ethernet frame error rate if the Ethernet frame size is large enough to prevent an LDPC frame from spanning more than 1 Ethernet frame, and if the current assumption of 1 bit error per 1 frame error is maintained.
 SuggestedRemedy

In subclauses 55.5.4.1, 55.5.4.3, and 55.5.4.4, change the text specifying an "LDPC frame error rate less than 3.2e-9" to text specifying an "Ethernet frame error rate less than 6.4e-9 for 800 octet frames."
 Proposed Response Response Status O

Cl 55 SC 55.5.4.2 P 192 L 11 Comment # 499
 Chris, Pagnanelli Solarflare Communicat
 Comment Type T Comment Status X
 The term "properly receive" is not precisely defined as it relates to the receiver frequency tolerance requirement.
 SuggestedRemedy
 Change text to read: "The receive feature shall properly receive incoming data, per the requirements of 55.5.4.1, with a symbol rate within the range 800MHz +/- 50ppm."
 Proposed Response Response Status O

Cl 55 SC 55.5.4.3 P 192 L 14 Comment # 693
 Powell, Scott Broadcom
 Comment Type TR Comment Status X
 Data has been presented to the task force indicating the presence of impulsive noise in actual installations (see reflector post from Dan Dove 7/22/04). There is no test to cover impulsive noise or required performance in the presence of impulsive noise specified.
 SuggestedRemedy
 Specify tolerable impulsive noise levels, and operational requirements in the presence of impulsive noise. Include validation test.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.5.4.3 P192 L14 Comment # 500
Chris, Pagnanelli Solarflare Communicat

Comment Type T Comment Status X

The common-mode voltage rejection requirement does not accurately reflect the superior conducted EMI immunity of Class E, Class F, and Augmented Category 6 cabling compared to Category 5e cabling. Also, the common-mode voltage is incorrectly specified as <= 2 V peak to peak instead of >= 2 V peak to peak in two places.

SuggestedRemedy

Change the common-mode voltage requirement to reflect actual cable susceptibility performance as determined by measurement.

Proposed Response Response Status O

Cl 55 SC 55.5.4.3 P192 L20 Comment # 363
Walter Hurwitz Broadcom

Comment Type TR Comment Status D pmaelec - cmnr

The common mode noise rejection test is not clear

SuggestedRemedy

Specify where the common mode voltage is to be measured. Is the noise signal a single tone swept frequency of wideband noise? Clearly specify if a 10GBASE-T PHY is required to pass the test referenced in 40.6.1.3.3 or note that it is only a recommendation. Alternatively, specify that the internationally recognized test procedures and levels for noise immunity shall be used by referencing EN61000-4-6 and EN61000-4-3 for the test method and CISPR 24 (or EN55024) for required legal levels.

Proposed Response Response Status O

Cl 55 SC 55.5.4.3 P192 L21 Comment # 702
Powell, Scott Broadcom

Comment Type TR Comment Status X

Common-mode test methodology, setup, and equipment needs further definition. Reference cable clamp only valid up to 250MHz. Goals for this test are not clear.

SuggestedRemedy

Clearly indicate how noise is to be added and measured. Is the cable clamp required? If so, how is compliance validated beyond 250MHz? Is the noise wideband? Specify which noise immunity standards a PHY which passes this test is expected to satisfy.

Proposed Response Response Status O

Cl 55 SC 55.5.4.3 P192 L21 Comment # 274
Dove, Daniel HP ProCurve Networki

Comment Type TR Comment Status D pmaelec - cmnr

What kind of common-mode voltage? This is too vague.

SuggestedRemedy

Insert the word "sinusoidal" before "common mode voltage" and I will be satisfied.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 55 SC 55.5.4.3 P192 L21 Comment # 421
Cobb, Terry Systemax

Comment Type T Comment Status X

The correct operating voltage and frequency should be defined. Also, there is no international standard that requires this level of performance, and this does not have anything to do with interoperability.

SuggestedRemedy

Change last paragraph to read:

The common-mode noise can be simulated using the cable clamp test defined in Sec 40.6.1.3.3. A 6 dBm sine wave signal from 80 MHz to 1000 MHz can be used to simulate an external electromagnetic field. Operation of the transceiver during the test is determined by the manufacture.

Proposed Response Response Status O

Cl 55 SC 55.5.4.3 P192 L21 Comment # 394
Christopher DiMinico MC Communications

Comment Type E Comment Status D pmaelec - check

Use symbols (e.g., ≤).

SuggestedRemedy

Change: From: The transceiver shall maintain an LDPC frame error rate less than 3.2x10-9, while being subject to a common mode voltage <= 2 V peak to peak for f ε (1, 80] MHz, and <= 2*80/f V peak to peak for f ε (80,500) MHz

To: The transceiver shall maintain an LDPC frame error rate less than 3.2x10-9, while being subject to a common mode voltage ≤ 2 V peak to peak for (f :1 ≤f ≤ 80) MHz, and ≤(2*80/f) Vpp for (f :80 < f ≤ 500) MHz.

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.5.4.3 P 192 L 25 Comment # 354
 Ali, Abaye Broadcom
 Comment Type T Comment Status D pmaelec - cmnr
 The cable clamp of 40.6.1.3.3 is only validated for proper operation up to 250MHz (see 40B.1). This section requires valid operation up to 500MHz.
 SuggestedRemedy
 Expand compliance test of annex 40B to wider frequency or add additional annex
 Proposed Response Response Status O

Cl 55 SC 55.5.4.4 P 192 L 21 Comment # 339
 Dawe, Piers Agilent
 Comment Type E Comment Status D
 Gauss was a person.
 SuggestedRemedy
 Change 'gaussian' to 'Gaussian'.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.5.4.4 P 192 L 2737 Comment # 289
 Reviriego, Pedro Agere Systems
 Comment Type T Comment Status D pmaelec - 1ginjectior.
 The alien crosstalk noise rejection does not cover the case of a 1G ANEXt noise source which will be the most common noise source for some time.
 SuggestedRemedy
 Include a test that injects a 1G alien crosstalk source. The procedure may be similar to that used in 40.6.1.3.4 with the appropriate noise level.
 Proposed Response Response Status O

Cl 55 SC 55.5.4.4 P 192 L 33 Comment # 275
 Dove, Daniel HP ProCurve Networki
 Comment Type TR Comment Status D pmaelec - alien
 Is the word "shall" appropriate here? If so, I think the location is not appropriate.
 SuggestedRemedy
 Remove the word "shall" and replace with "should".
 Define the coupler more clearly. Simply saying it does not significantly alter the link segment characteristics is a bit too fuzzy.
 Also, I question if a flat response is realistic. Typically, noise sources on UTP have a frequency dependent gain function consistent with the balance characteristics of UTP cable.
 Perhaps a better approach would be to define a 1000T spectrum run through a 1st order high pass filter?
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 1) replace "shall" with "should"
 2) Coupler definition needs to be clarified
 3) See jones_1_0305.pdf for justification for using a flat noise source. This noise represents the sum of different noise sources. The decision to use flat was approved by the group - see motion ??

Cl 55 SC 55.5.4.4 P 192 L 39 Comment # 448
 Wael William Diab Cisco Systems
 Comment Type T Comment Status X
 The Editor's note contains technical information that is relevant to the text. Either this is informative or normative but the way it is captured as an editor's note is confusing. Is the intent that this would be deleted at publication.
 SuggestedRemedy
 If the intent of the alien noise sources model description is to be removed at publication please state that. Otherwise, please incorporate the comment into the text as normative or informative, whichever is appropriate.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.5.4.4 P 193 L 3 Comment # 179
 David V James JGG
 Comment Type E Comment Status D
 DVJ-179
 Misleading capitalization
 SuggestedRemedy
 Link Segment
 ==>
 Link segment
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.6 P 195 L 1 Comment # 578
 Booth, Brad Intel
 Comment Type E Comment Status X
 55.6 should follow into the previous text and not start on a new page with a blank page in between.
 SuggestedRemedy
 As per comment. Also applies to 55.7 and 55.8. Most likely applies throughout the Clause 55, but should be corrected.
 Proposed Response Response Status O

Cl 55 SC 55.6 P 195-200 L Comment # 290
 Reviriego, Pedro Agere Systems
 Comment Type E Comment Status D
 The header is 'Draft 2.02.0'
 SuggestedRemedy
 Change to 'Draft 2.0'
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Will change to Draft 2.1 in next draft

Cl 55 SC 55.6.1.1 P 195 L 29 Comment # 340
 Dawe, Piers Agilent
 Comment Type E Comment Status D
 Gratuitous capitals
 SuggestedRemedy
 Change 'Registers' to 'registers', at foot of table change 'Read Only' to 'Read only' or 'read only', and so on.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.6.1.1 P 195 L 30 Comment # 180
 David V James JGG
 Comment Type E Comment Status D
 DVJ-180
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Register, Bit, Type
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Will be done later by the professional editorial staff of the IEEE

Cl 55 SC 55.6.1.2 P 196 L 25 Comment # 181
 David V James JGG
 Comment Type E Comment Status D
 DVJ-181
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 Bit
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Will be done later by the professional editorial staff of the IEEE

IEEE P802.3an Comments

Cl 55 SC 55.6.1.2 P 196 L 5060 Comment # 291
 Reviriego, Pedro Agere Systems
 Comment Type E Comment Status D management
 The Bits U23,U22 and U21 have not been updated to reflect the changes in section 55.4.3.1.
 SuggestedRemedy
 Remove those bits as they are no longer needed.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Mark as reserved

Cl 55 SC 55.6.2 P 199 L 13 Comment # 341
 Dawe, Piers Agilent
 Comment Type ER Comment Status D
 This is the first mention of 'SEED value' (part in capitals). I found 'Seed Bits' in table 55-6, 'MASTER-SLAVE seed bits' in Table 45-124, and 'MASTER-SLAVE seed value bits' in 45.2.7.10.5. I don't believe that capitalisation should carry meaning (too subtle for us readers!), but this variety of phrases for the same thing makes it hard to discern what's going on.
 SuggestedRemedy
 Remove the gratuitous capitals, decide on a name for these things, and use it consistently throughout.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.6.2 P 199 L 26 Comment # 342
 Dawe, Piers Agilent
 Comment Type E Comment Status D management
 This sentence 'The rationale for the hierarchy illustrated in Table 55-7 is straightforward.' is obviously copied from another clause where it made more sense. Here, some of the choices in the table are just arbitrary - not much 'rationale'. All the sentence does now is patronise the reader.
 SuggestedRemedy
 Remove this sentence.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.6.2 P 199 L 26 Comment # 343
 Dawe, Piers Agilent
 Comment Type T Comment Status D management
 Not clear what this means: 'otherwise, it is assumed to have passed this condition'. What is 'it'? The first noun here is 'arbitration'. What is 'this condition'? What is the effect of assuming that it has passed? Sentence lacks its full stop.
 SuggestedRemedy
 Rewrite this note.
 Proposed Response Response Status O

Cl 55 SC 55.7 P L Comment # 521
 Baumer, Howard Broadcom
 Comment Type TR Comment Status X
 There appears to be a desire for a length dependent or a variable set of link segment characteristics. This dependency is very confusing and unclear as to its intent and specification. Several possible intents for the link segment specifications could be:
 1) one set of link segment specifications that any and all compliant link segments must meet?
 2) Two sets of link segment specifications that a link segment gets to choose from to meet, one equivalent to 55m length and the other to 100m
 3) an infinite set of link segment specifications that a link segment can choose from to meet where one end is equivalent to 55m and the other to 100m and anything inbetween.
 4) one set of link segment specifications that any and all compliant link segments must meet where the NEXT, ELFEXT, ANEXT, AELFEXT specifications are dependent upon the measured insertion loss of the link segment.

It is also unclear as to whether the link segment specifications are tied to a measured length or not. If they are tied to a measured length how is that length measured?
 SuggestedRemedy
 Clearly state what the intent of the link segment specification is. One possible clarification of intent is:
 Any compliant link segment shall meet the specified insertion loss of Eq 55-10. A give link segment's NEXT, ELFEXT, ANEXT AELFEXT limits are set by its measured insertion loss. Put in a sub-clause that describes how that insertion loss is to be measured and how each dependent specification is calculated from that measured insertion loss.
 This is a huge rewrite of 54.7 and as such the whole sub-clause should then be left open for comments on the next recirculation ballot.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.7 P 201 L Multi Comment # 241
 Shimon Muller Sun Microsystems, Inc.

Comment Type TR Comment Status D cabling -cat5

This sub-clause does not mention Cat-5e cabling, which is the vast majority of the installed cabling today. In my opinion, no compelling technical case has been made in the Task Force as to why 10GBASE-T would not work over this type of cabling at ANY link distance. It is also my opinion, that without support for at least some portion of the installed cabling infrastructure, this technology will take a very long time to achieve widespread adoption in the marketplace.

SuggestedRemedy

Add text that describes how Cat-5e cabling is supported, as appropriate.

Proposed Response Response Status O

Cl 55 SC 55.7.1 P 201 L 21 Comment # 583
 Thompson, Geoff Nortel

Comment Type TR Comment Status X

The statement:
 "10GBASE-T uses a star topology with Class E or Class F balanced cabling used to connect PHY entities."
 is technically incorrect. 10GBASE-T like all higher speed Ethernet media (except PON) uses a point-to-point topology. The elements (e.g. MACs and a switch) that bind it into a star have nothing to do with 10GBASE-T.

SuggestedRemedy

Change text to read: "10GBASE-T uses a point-to-point topology with Class E or Class F balanced cabling used to connect PHY entities."

Proposed Response Response Status O

Cl 55 SC 55.7.2 P 201 L 28 Comment # 420
 Kasturia, Sanjay Teranetics

Comment Type E Comment Status X

The text:
 A 10GBASE-T link segment consisting of at least 55 to 100 meters of Class E or up to 100 meters of Class F which meets the transmission parameters of this subclause will provide a reliable medium.

is unclear to a number of readers. Clarify what medium the 55m refers to and what medium the 100m refers to.

SuggestedRemedy

Change text to:
 A 10GBASE-T link segment consisting of up to 100 meters of balanced 4-pair structured cabling which meets the transmission parameters of this subclause will provide a reliable medium.

Add an informative note saying:
 100 meters of CAT 6A or CAT 7 is expected to meet the requirements of 55.7. 100 meters of other structured cabling may not meet the requirements and should be qualified by testing or analysis. Lengths shorter than 100 meters of other structured cabling may meet the requirements for 55.7.

Proposed Response Response Status O

Cl 55 SC 55.7.2 P 201 L 28 Comment # 251
 Brown, Kevin Broadcom

Comment Type TR Comment Status D length

The first sentence is not technically accurate. "At least 55 meters" of cable is not required to provide a reliable medium. Any distance less than 55 meters should provide a reliable medium.

SuggestedRemedy

A 10GBASE-T link segment consisting of at least 0.1 meters to at most 55 meters of Class E, or at least 0.1 meters to at most 100 meters of Class F which meet the transmission parameters of this subclause will provide a reliable medium.

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.7.2 P 201 L 35 Comment # 504
 Baumer, Howard Broadcom
 Comment Type TR Comment Status X
 There is no tolerance specified with the load impedance.
 SuggestedRemedy
 Change: ".. of 100 ohm" to ".. of 100 ohm +/- 10%" or ".. of 100 ohm with a tolerance of 20dB
 Proposed Response Response Status O

Cl 55 SC 55.7.2 P 201 L 35 Comment # 377
 Alan Flatman LAN Technologies
 Comment Type T Comment Status D cabling
 Link segment testing appears to be mandatory, according to the way this sentence is constructed. I don't think that this is the intention however we did agree to recommend testing (George Eisler comment as I recall). Also, the impedance requires a tolerance.
 SuggestedRemedy
 Change the sentence to read "Link segment testing is recommended and shall be conducted using source and load impedances of 100 ohm + 1%."
 Proposed Response Response Status O

Cl 55 SC 55.7.2 P 201 L 37 Comment # 584
 Thompson, Geoff Nortel
 Comment Type TR Comment Status X
 The text:
 "The link segment transmission parameters of insertion loss and ELFEXT loss specified are ISO/IEC 11801 Class E specifications extended by extrapolating the formulas to a frequency up to 500 MHz with appropriate adjustments for length when applicable."
 ...is not acceptable. We are not a cabling standards group and not an appropriate forum for whether such extrapolations are appropriate or justified.
 SuggestedRemedy
 Change text to stay within the boundaries of performance laid out by established standards appropriate for reference by an international standard. Delay approval until such approved reference is available.
 Proposed Response Response Status O

Cl 55 SC 55.7.2 P 201 L 37 Comment # 362
 Kim, Yong Broadcom
 Comment Type TR Comment Status D cabling
 May be a naive concern, but nevertheless a concern. The two paragraphs in 55.7.2 below indicates to me that we do not have realistic 10GBase-T segment model (or installed Class E and F cabling data) to evaluate the specification (or implimentation). Also, the note says IF available, then WILL reference, and MAY replace the reference in the draft. How could we vote on this?

"The link segment transmission parameters of insertion loss and ELFEXT loss specified are ISO/IEC 11801 Class E specifications extended by extrapolating the formulas to a frequency up to 500 MHz with appropriate adjustments for length when applicable. The link segment transmission parameters of NEXT loss, MDNEXT loss and Return Loss specified are ISO/IEC 11801 Class E specifications extended beyond 250 MHz by utilizing the equations referenced in TIA/EIA TSB-155 D1.3.
 Editor's note: ISO/IEC TR-24750: Assessment of installed Class E and Class F cabling beyond their maximum specified frequencies, should be available before 802.3an is approved. In which case, 802.3an will reference both and may replace the above reference to TIA/EIA TSB-155."

SuggestedRemedy
 Please provide reasonable evidence of agreement among the technical experts that the adopted extrapolation plus Table 55-8 provide a segment requirement that allows interoperable specification. Between the clause text and the note, I am not getting that impression.

Please re-draft the note, since the note is dictating future changes to the draft in auto-pilot (unless you meant it).
 Proposed Response Response Status O

Cl 55 SC 55.7.2.1 P 201 L 58 Comment # 378
 Alan Flatman LAN Technologies
 Comment Type T Comment Status D cabling
 Reference is made to "attenuation" rather than "insertion loss".
 SuggestedRemedy
 Change "attenuation" to "insertion loss".
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.7.2.1 P 201 L 60 Comment # 505
 Baumer, Howard Broadcom
 Comment Type TR Comment Status X
 Frequency domain specifications are defined with respect to a reference impedance.
 SuggestedRemedy
 Replace "terminated in" with "referenced to".
 Proposed Response Response Status O

Cl 55 SC 55.7.2.1 P 202 L 1 Comment # 585
 Thompson, Geoff Nortel
 Comment Type E Comment Status X
 Comma needed at the end of line 1
 SuggestedRemedy
 Insert comma (or reverse the clauses).
 Proposed Response Response Status O

Cl 55 SC 55.7.2.2 P 202 L 7 Comment # 506
 Baumer, Howard Broadcom
 Comment Type T Comment Status X
 The characteristic impedance of the cabling should be a requirement. The statement: "... is 100 ohm .." makes this informative.
 SuggestedRemedy
 Change "... is 100 ohm .." to "... shall be 100 ohms .."
 Proposed Response Response Status O

Cl 55 SC 55.7.2.3 P 202 L 12 Comment # 507
 Baumer, Howard Broadcom
 Comment Type E Comment Status X
 The equation reference could be confusing as no specifically referenced equation number is use
 SuggestedRemedy
 replace ".. the following equation" with ".. equation 55.11" with the appropriate link to equation 55.11
 Proposed Response Response Status O

Cl 55 SC 55.7.2.4.1 P 202 L 44 Comment # 244
 Koeman, Henricus Fluke Networks
 Comment Type TR Comment Status D cabling
 ISO/IEC and TIA cabling standards include a maximum value (65 dB for PP NEXT), mainly to assure reliable measurements. Without this change, supporting cabling standards are not in full agreement with IEEE 802.3an 10GBASE-T.
 SuggestedRemedy
 Add the same maximum value as in relevant cabling standards, following equation 55-12:

"65 dB max".
 Proposed Response Response Status O

Cl 55 SC 55.7.2.4.1 P 202 L 47 Comment # 508
 Baumer, Howard Broadcom
 Comment Type ER Comment Status X
 The wording from lines 47-56 doesn't seem to explicitly tie the frequency ranges to the specification. The "where"s should be replaced with "for"s and the two equations tied together with an "and".

SuggestedRemedy
 replace "where f is the frequency" with "for" on line 47
 replace the sentence on line 49 with "and"
 and on line 56 replace "where f is the frequency" with "for".
 Proposed Response Response Status O

Cl 55 SC 55.7.2.4.2 P 203 L 13 Comment # 245
 Koeman, Henricus Fluke Networks
 Comment Type TR Comment Status D cabling
 ISO/IEC and TIA cabling standards include a maximum value (62 dB for PS NEXT), mainly to assure reliable measurements. Without this change, supporting cabling standards are not in full agreement with IEEE 802.3an 10GBASE-T.
 SuggestedRemedy
 Add the same maximum value as in relevant cabling standards, following equation 55-14.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.7.2.4.2 P 203 L 16 Comment # 509
 Baumer, Howard Broadcom
 Comment Type ER Comment Status X
 The wording from lines 16-22 doesn't seem to explicitly tie the frequency ranges to the specification. The "where's should be replaced with "for's and the two equations tied together with an "and".
 SuggestedRemedy
 replace "where f is the frequency" with "for" on line 16
 add "and" between line 16 and eq. 55-15
 and on line 22 replace "where f is the frequency" with "for".
 Proposed Response Response Status O

Cl 55 SC 55.7.2.4.3 P 203 L 27 Comment # 510
 Baumer, Howard Broadcom
 Comment Type T Comment Status X
 Is this means for calculating PSNEXT loss a recommendation or a requiremet? If it is a requiremet then "shall" needs to be used instead of "is".
 SuggestedRemedy
 Relpace "is" with "shall"
 Proposed Response Response Status O

Cl 55 SC 55.7.2.4.2 P 203 L 2 Comment # 182
 David V James JGG
 Comment Type E Comment Status D cabling
 DVJ-182
 Misleading capitalization
 SuggestedRemedy
 Multiple Disturber Near-End Crosstalk (MDNEXT) loss
 ==>
 Multiple disturber near-end crosstalk (MDNEXT) loss
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.7.2.4.3 P 203 L 44 Comment # 511
 Baumer, Howard Broadcom
 Comment Type T Comment Status X
 "n" is not specified and is therefore open ended, specify what "n" should be.
 SuggestedRemedy
 Specify n=3
 Proposed Response Response Status O

Cl 55 SC 55.7.2.4.3 P 203 L 24 Comment # 183
 David V James JGG
 Comment Type E Comment Status D cabling
 DVJ-183
 Misleading capitalization
 SuggestedRemedy
 Multiple-Disturber Power Sum Near-End Crosstalk (PS NEXT) loss
 ==>
 Multiple-disturber power sum near-end crosstalk (PS NEXT) loss
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.7.2.4.4 P 203 L 42 Comment # 184
 David V James JGG
 Comment Type E Comment Status D cabling
 DVJ-184
 Misleading capitalization
 SuggestedRemedy
 Equal Level Far-End Crosstalk (ELFEXT) loss
 ==>
 Equal level far-end crosstalk (ELFEXT) loss
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

IEEE P802.3an Comments

Cl 55 SC 55.7.2.4.4 P 203 L 45 Comment # 185
 David V James JGG
 Comment Type E Comment Status D cabling
 DVJ-185
 Misleading capitalization
 SuggestedRemedy
 Far-End Crosstalk
 ==>
 Far-end crosstalk
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.7.2.4.5 P 204 L 38 Comment # 186
 David V James JGG
 Comment Type E Comment Status D cabling
 DVJ-186
 Misleading capitalization
 SuggestedRemedy
 Multiple Disturber Equal Level Far-End Crosstalk (MDELTEXT) loss
 ==>
 Multiple disturber equal level far-end crosstalk (MDELTEXT) loss
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.7.2.4.6 P 205 L 16 Comment # 512
 Baumer, Howard Broadcom
 Comment Type T Comment Status X
 "n" is not specified and is therefore open ended, specify what "n" should be.
 SuggestedRemedy
 Specify n=3
 Proposed Response Response Status O

Cl 55 SC 55.7.2.4.6 P 205 L 2 Comment # 187
 David V James JGG
 Comment Type E Comment Status D cabling
 DVJ-187
 Misleading capitalization
 SuggestedRemedy
 Multiple-Disturber Power Sum Equal Level Far-End Crosstalk (PS ELFEXT) loss
 ==>
 Multiple-disturber power sum equal level far-end crosstalk (PS ELFEXT) loss
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.7.2.5 P 205 L 20 Comment # 513
 Baumer, Howard Broadcom
 Comment Type T Comment Status X
 Incnsistant use of frequency range for multiple specifications. Cable specs use a frequency range from 1Mhz - 500MHz, whereas the delay specs use 2MHz - 500Hz
 SuggestedRemedy
 Use 1MHz - 500MHz for all specifications
 Proposed Response Response Status O

Cl 55 SC 55.7.2.6 P 205 L 26 Comment # 514
 Baumer, Howard Broadcom
 Comment Type T Comment Status X
 Incnsistant use of frequency range for multiple specifications. Cable specs use a frequency range from 1Mhz - 500MHz, whereas the delay specs use 2MHz - 500Hz
 SuggestedRemedy
 Use 1MHz - 500MHz for all specifications
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.7.3 P 205 L 31 Comment # 277
 Dove, Daniel HP ProCurve Networki
 Comment Type E Comment Status D cabling
 This paragraph has a few editorial problems.
 It says the "loss is limited" but isn't it the ANEXT and AFEXT that are limited? (symanctic) and on line 36 you should change ..."MDANEXT) and multiple" to "(MDANEXT) loss and multiple' and change "is specified" to "are specified".
 SuggestedRemedy
 Please make suggested changes.
 Proposed Response Response Status O

Cl 55 SC 55.7.3 P 205 L 31 Comment # 278
 Dove, Daniel HP ProCurve Networki
 Comment Type TR Comment Status D cabling
 Coupling Parameters between link segments...
 I have a hard time with the whole concept of defining this because it is not something that customers can readily measure, control, or predict.
 I believe it is essential to define a standard that *works* in the general sense with the cable systems that are measureable and controllable.
 As I understand it, if a customer has cable installed and measures AFEXT, MDAFEXT, ANEXT or MDANEXT and concludes that their cable does not meet specifications, there is no readily available method for resolving the problem. They would be instructed to re-configure their cable plant, cross their fingers, and hope it passed the test when re-tested.
 SuggestedRemedy
 Define the solution in a way that allows customers to define their cable solution, have it installed, measured, and certified to work with 10GBASE-T such that when they purchase and install equipment, it works.
 For example, there is no need to specify ANEXT for Category 7 cables. (Class F)
 If this means reducing the length of UTP supported, to a point that 9x% (pick a number) of the cable guarantees operation, fine. If it means removing UTP from the list of supported cables and mandating a foil/shield on the cable to ensure ANEXT is below tolerable limits, please do this.
 It is just not fair to a customer to put them into a wild-goose expedition to get their cabling to support a new technology.
 Proposed Response Response Status O

Cl 55 SC 55.7.3 P 205 L 35 Comment # 515
 Baumer, Howard Broadcom
 Comment Type E Comment Status X
 "MDANEXT" is seperated across lines
 SuggestedRemedy
 Fix it such that "MDANEXT" is kept together
 Proposed Response Response Status O

Cl 55 SC 55.7.3.1 P 205 L 37 Comment # 188
 David V James JGG
 Comment Type E Comment Status D cabling
 DVJ-188
 Misleading capitalization
 SuggestedRemedy
 Multiple Disturber Alien Near-End Crosstalk (MDANEXT) loss
 ==>
 Multiple disturber alien near-end crosstalk (MDANEXT) loss
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.7.3.1 P 205 L 40 Comment # 189
 David V James JGG
 Comment Type E Comment Status D cabling
 DVJ-189
 Misleading capitalization
 SuggestedRemedy
 Near-End Crosstalk (NEXT) loss
 ==>
 Near-end crosstalk (NEXT) loss
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

IEEE P802.3an Comments

Cl 55 SC 55.7.3.1 P 206 L 15 Comment # 697
 Powell, Scott Broadcom
 Comment Type TR Comment Status X
 Equation (55 24) does not specify length dependence of ANEXT.
 SuggestedRemedy
 Include well-known equation for length dependence of ANEXT (see ungerboeck_1_0305.pdf) or add sentence indicating that the given equation applies to all cable lengths.
 Proposed Response Response Status O

Cl 55 SC 55.7.3.1.1 P 205 L 14 Comment # 246
 Koeman, Henriecus Fluke Networks
 Comment Type TR Comment Status D cabling
 Depending on the number of disturber links measured, there is a need to raise the lower end of the test frequency range.
 Assuming a 100 dB measurement floor for each PS AXtalk measurement, for each doubling of the number of disturber links, the measurement floor declines by 3 dB. At 1 MHz, the pass/fail limit may be at 82 dB for Class E cabling and 82 dB for Augmented Class E cabling. Just the measurement floor without any PS AXtalk reaches the pass/fail limit with 64 disturber measurements. Likely one needs at least a 10 - 12 dB measurement floor above the stated pass/fail limit. Assuming a maximum 64 disturber link measurement, this translates into a lower 10 MHz test frequency. Without this change, verification of performance at low frequencies becomes practically impossible.
 SuggestedRemedy
 Change the lower frequency of the PS ANEXT requirement to 10 MHz in equation 55.24.
 Proposed Response Response Status O

Cl 55 SC 55.7.3.1.1 P 205 L 45 Comment # 190
 David V James JGG
 Comment Type E Comment Status D cabling
 DVJ-190
 Misleading capitalization
 SuggestedRemedy
 Multiple-Disturber Power Sum Near-End Crosstalk (PS ANEXT) loss
 ==>
 Multiple-disturber power sum near-end crosstalk (PS ANEXT) loss
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.7.3.1.1 P 205 L 49 Comment # 516
 Baumer, Howard Broadcom
 Comment Type ER Comment Status X
 MDANEXT specification is structured differently than MDNEXT and MDELNEXT. For consistency sake structure this section the same as the MDNEXT and MDELNEXT sections.
 SuggestedRemedy
 Change the structure of the MDANEXT specification section such that it is the same as the MDNEXT and MDELNEXT section having the same sub-clauses, same / similar titles, etc.
 Proposed Response Response Status O

Cl 55 SC 55.7.3.1.1 P 206 L 19 Comment # 518
 Baumer, Howard Broadcom
 Comment Type E Comment Status X
 "intercept" is the value at 0 not at f=100MHz
 SuggestedRemedy
 Replace "intercept" with "value"
 Proposed Response Response Status O

Cl 55 SC 55.7.3.1.1 P 206 L 27 Comment # 247
 Koeman, Henriecus Fluke Networks
 Comment Type TR Comment Status D cabling
 Refer to previous comment. Without this change, verification of performance at low frequencies becomes practically impossible.
 SuggestedRemedy
 Change the lower frequency of the PS ANEXT requirement to 10 MHz in equation 55.25.
 Proposed Response Response Status O

Cl 55 SC 55.7.3.1.1 P 206 L 32 Comment # 519
 Baumer, Howard Broadcom
 Comment Type E Comment Status X
 "intercept" is the value at 0 not at f=100MHz
 SuggestedRemedy
 Replace "intercept" with "value"
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.7.3.1.1 P 206 L 8 Comment # 517
 Baumer, Howard Broadcom
 Comment Type TR Comment Status X
 "n" is not specified and is therefore open ended, specify what "n" should be.
 SuggestedRemedy
 Specify "n".
 Proposed Response Response Status O

Cl 55 SC 55.7.3.1.2 P 207 L 14 Comment # 588
 Thompson, Geoff Nortel
 Comment Type E Comment Status X
 The text has an extra leading period.
 SuggestedRemedy
 Change: ".Table 55-8 lists the calculated..."
 To: "Table 55-8 lists the calculated..."
 Proposed Response Response Status O

Cl 55 SC 55.7.3.1.2 P 207 L 15 Comment # 191
 David V James JGG
 Comment Type E Comment Status D cabling
 DVJ-191
 Misleading capitalization
 SuggestedRemedy
 Cabling types, distance and PS ANEXT Constants
 ==>
 Cabling types, distance and PS ANEXT constants
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.7.3.1.2 P 207 L 18 Comment # 192
 David V James JGG
 Comment Type E Comment Status D cabling
 DVJ-192
 Misleading capitalization
 SuggestedRemedy
 Insertion Loss at 250 MHz
 ==>
 Insertion loss at 250 MHz
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.7.3.1.2 P 207 L 21 Comment # 195
 David V James JGG
 Comment Type E Comment Status D cabling
 DVJ-195
 Nonstandard table lines.
 SuggestedRemedy
 Thin on the outside.
 Very-thin on the inside.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Will be done later by the professional editorial staff of the IEEE

Cl 55 SC 55.7.3.1.2 P 207 L 22 Comment # 196
 David V James JGG
 Comment Type E Comment Status D cabling
 DVJ-196
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 right three columns
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Will be done later by the professional editorial staff of the IEEE

IEEE P802.3an Comments

Cl 55 SC 55.7.3.2 P 207 L 43 Comment # 193
 David V James JGG
 Comment Type E Comment Status D cabling
 DVJ-193
 Misleading capitalization
 SuggestedRemedy
 Multiple Disturber Alien Far-End Crosstalk (MDAFEXT) loss
 ==>
 Multiple disturber alien far-end crosstalk (MDAFEXT) loss
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.7.3.2.1 P 207 L 51 Comment # 194
 David V James JGG
 Comment Type E Comment Status D cabling
 DVJ-194
 Misleading capitalization
 SuggestedRemedy
 Multiple-Disturber Power Sum Alien Equal Level Far-End Crosstalk (PS AELFEXT) loss
 ==>
 Multiple-disturber power sum alien equal level far-end crosstalk (PS AELFEXT) loss
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.7.3.2.1 P 208 L 26 Comment # 249
 Koeman, Henricus Fluke Networks
 Comment Type TR Comment Status D cabling
 See previous comments. Without this change, verification of performance at low frequencies becomes practically impossible.
 SuggestedRemedy
 Change the lower frequency of the PS AELFEXT requirement to 10 MHz in equation 55.30.
 Proposed Response Response Status O

Cl 55 SC 55.7.3.2.1 P 208 L 9 Comment # 197
 David V James JGG
 Comment Type T Comment Status D cabling
 DVJ-197
 Nonstandard math. EL(f)i looks like a product of two numbers.
 SuggestedRemedy
 EL(f)i
 ==>
 ELi(f)
 OR
 EL(f,i)
 Proposed Response Response Status O

Cl 55 SC 55.7.3.2.2 P 209 L 10 Comment # 589
 Thompson, Geoff Nortel
 Comment Type E Comment Status X
 The text has an extra leading period.
 SuggestedRemedy
 Change: ".Table 55-9 lists the calculated..."
 To: "Table 55-9 lists the calculated..."
 Proposed Response Response Status O

Cl 55 SC 55.7.3.2.2 P 209 L 10 Comment # 201
 David V James JGG
 Comment Type E Comment Status D cabling
 DVJ-201
 Extraneous period.
 SuggestedRemedy
 .Table
 ==>
 Table
 Proposed Response Response Status W
 PROPOSED ACCEPT.
 Same as comment 391

IEEE P802.3an Comments

Cl 55 SC 55.7.3.2.2 P 209 L 10 Comment # 391
 Beck, Michael Alcatel Bell n.v.
 Comment Type ER Comment Status D
 This line starts with a period.
 SuggestedRemedy
 Remove period.
 Proposed Response Response Status W
 PROPOSED ACCEPT.
 Same as comment 201

Cl 55 SC 55.7.3.2.2 P 209 L 12 Comment # 198
 David V James JGG
 Comment Type E Comment Status D cabling
 DVJ-198
 Misleading capitalization
 SuggestedRemedy
 Cabling types, distances and PS AELFEXT Constants
 ==>
 Cabling types, distances and PS AELFEXT constants
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.7.3.2.2 P 209 L 15 Comment # 199
 David V James JGG
 Comment Type E Comment Status D cabling
 DVJ-199
 Misleading capitalization
 SuggestedRemedy
 Insertion Loss at 250 MHz
 ==>
 Insertion loss at 250 MHz
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.7.3.2.2 P 209 L 18 Comment # 202
 David V James JGG
 Comment Type E Comment Status D cabling
 DVJ-202
 Small values are supposed to be centered.
 SuggestedRemedy
 Center the following columns:
 right three columns
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Will be done later by the professional editorial staff of the IEEE

Cl 55 SC 55.7.3h P 205 L 34 Comment # 586
 Thompson, Geoff Nortel
 Comment Type E Comment Status X
 The text: "...crosstalk noise.To ensure..."
 is missing a space.
 SuggestedRemedy
 Change to: "...crosstalk noise. To ensure..."
 Proposed Response Response Status O

Cl 55 SC 55.7.4 P 209 L 41 Comment # 520
 Baumer, Howard Broadcom
 Comment Type ER Comment Status X
 This section does not appear to add to the specification as it is purely informative to help a
 potential vendor implement a transceiver.
 SuggestedRemedy
 This is more suited to be included as an Informative Annex.
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.7.4 P 209 L 41 Comment # 419
 Kasturia, Sanjay Teranetics

Comment Type E Comment Status X

55.7.2 specifies the cabling parameters for a viable 10GBASE-T link segment.
 55.7.3 specified the coupling parameters covering coupling between link segments. 55.7.4 specifies the noise environment. I think the noise environment should come after 55.7.2 so that 55.7.2 and the new 55.7.3 will completely specify the operating channel for a PHY.

What is now 55.7.3 (Coupling parameters) will now become 55.7.4 and should provide detailed justification of the noise environment.

SuggestedRemedy

Move 'Noise environment' from after 55.7.3 to before 55.7.3. Include in it the net effect of all the noise due the coupling between links.

Proposed Response Response Status O

Cl 55 SC 55.7.4 P 209 L 53 Comment # 200
 David V James JGG

Comment Type E Comment Status D cabling

DVJ-200
 Misleading capitalization

SuggestedRemedy

Near-End Crosstalk
 ==>
 Near-end crosstalk

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.7.4 P 210 L 5 Comment # 203
 David V James JGG

Comment Type E Comment Status D cabling

DVJ-203
 Misleading capitalization

SuggestedRemedy

Far-End Crosstalk
 ==>
 Far-end crosstalk

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.7.4 P 210 L 8 Comment # 204
 David V James JGG

Comment Type E Comment Status D cabling

DVJ-204
 Misleading capitalization

SuggestedRemedy

Inter-Symbol Interference
 ==>
 Inter-symbol interference

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.8.1 P 211 L 39 Comment # 205
 David V James JGG

Comment Type E Comment Status D

DVJ-205
 Small values are supposed to be centered.

SuggestedRemedy

Center the following columns:
 All columns

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Will be done later by the professional editorial staff of the IEEE

Cl 55 SC 55.8.2 P 211 L 57 Comment # 590
 Thompson, Geoff Nortel

Comment Type TR Comment Status X

I don't understand this clause and especially the note. Is the intent to require automatic implementation of the cross-over function without regard to whether or a straight or cross-over cable is used? If so the wording does not indicate this. If not, then I don't understand the intent.

The absolute requirement (for that is how it is stated) for the jack to be marked with an "X" means that the same jack can not be used in multiple speed implementations.

SuggestedRemedy

I'm not sure. Once I know the intent perhaps I can help work out the wording.

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.8.2 P 212 L 16 Comment # 450
 Wael William Diab Cisco Systems

Comment Type T Comment Status X

The Editor's note contains technical information that is relevant to the text. Either this is informative or normative but the way it is captured as an editor's note is confusing. Is the intent that this would be deleted at publication?

SuggestedRemedy

If the intent is that the editor's note will be removed at publication please state that. Otherwise, please incorporate the comment into the text as normative or informative, whichever is appropriate. In this case I think the mandatory language would be explicit with a shall that is associated with a PICS entry.

Proposed Response Response Status O

Cl 55 SC 55.8.3 P 212 L 23 Comment # 398
 Christopher DiMinico MC Communications

Comment Type T Comment Status D cabling

The reference to Category 6 is ANSI/TIA/EIA-568-B.2-1-2002.

SuggestedRemedy

Change: ANSI/TIA/EIA-568-B.2:2002

To: ANSI/TIA/EIA-568-B.2-1-2002

Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.8.3.1 P 204 L 38 Comment # 14005
 Powell, Scott Broadcom

Comment Type T Comment Status D D1.4 return loss

Not necessary to specify RL to 500MHz with a 400MHz signal.

SuggestedRemedy

Change upper limit from 500MHz to 400MHz to ease transformer/connector implementation.

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Change the upper end of the specification on the RL but there will be no substantive change to the requirements below 400MHz

Editor will resubmit to working group ballot

Cl 55 SC 55.8.3.1 P 212 L 38 Comment # 695
 Powell, Scott Broadcom

Comment Type TR Comment Status X

(Resubmission of comment 34 from last meeting deferred by task force.) Not necessary to specify RL to 500MHz with a 400MHz signal. Accepted resolution to comment 34 last meeting: "Editor will resubmit to working group ballot"

SuggestedRemedy

Change upper limit from 500MHz to 400MHz.

Proposed Response Response Status O

Cl 55 SC 55.8.3.2 P 212 L 48 Comment # 422
 Cobb, Terry Systemax

Comment Type T Comment Status X

The balance will not meet the latest magnetics measurements that are posted on our web.

SuggestedRemedy

See contribution from tcobb

Proposed Response Response Status O

Cl 55 SC 55.8.3.2 P 213 L 10 Comment # 206
 David V James JGG

Comment Type E Comment Status D

DVJ-206
 Misleading capitalization

SuggestedRemedy

DEVICE UNDER TEST
 ==>
 Device under test

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

IEEE P802.3an Comments

Cl 55 SC 55.8.3.2 P 213 L 21 Comment # 451
 Wael William Diab Cisco Systems

Comment Type E Comment Status X
 It looks like this would be deleted at publication. Also it would be more helpful to reference a presentation rather than a specific company name.

SuggestedRemedy
 Please state that the editor's note will be removed at publication. Please reference a presentation or information if this is to be arried forward in D2.1

Proposed Response Response Status O

Cl 55 SC 55.8.3.3 P 213 L 27 Comment # 501
 Chris, Pagnanelli Solarflare Communicat

Comment Type T Comment Status X
 The common-mode output voltage requirement was changed from 50 mV peak-to-peak to 15 mV peak-to-peak without final feedback from the task force.

SuggestedRemedy
 Change the common-mode output voltage requirement to 50 mV peak-to-peak, pending final feedback from the task force.

Proposed Response Response Status O

Cl 55 SC 55.8.3.3 P 213 L 28 Comment # 423
 Cobb, Terry Systimax

Comment Type T Comment Status X
 The common-mode voltage needs only to be specified at frequencies greater than 30 MHz. Also change to dBm to be consistent with other specifications.

SuggestedRemedy
 Change text after less than to:
 -32.5 dBm for all frequencies greater than 30 MHz.

Proposed Response Response Status O

Cl 55 SC 55.8.3.3 P 213 L 28 Comment # 355
 Siavash Fallahi Broadcom

Comment Type TR Comment Status D mdi - common mode
 A single peak-to-peak voltage measurement of the common mode output may not be a sufficient predictor of EMI compliance. Additionally, data has not been presented to motivate the choice of 15mVpp.

SuggestedRemedy
 A common mode PSD mask (maximum common mode dBm/Hz vs frequency) should be specified along with experimental data validating that a compliant cabling system driven with such a signal can meet CISPR/FCC Class A EMI emissions limits.

Proposed Response Response Status O

Cl 55 SC 55.8.3.3 P 213 L 29 Comment # 279
 Dove, Daniel HP ProCurve Networki

Comment Type TR Comment Status D mdi - common mode
 15mV is an impractical and unnecessary limit.

EMI compliance is not directly related to the common-mode voltage on the MDI, but rather, to the frequency/amplitude vector and is outside the scope of this standard.

SuggestedRemedy
 Change to 50mV to remain consistent with earlier standards.

Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.8.3.3 P 213 L 34 Comment # 207
 David V James JGG

Comment Type E Comment Status D
 DVJ-207
 Misleading capitalization

SuggestedRemedy
 DEVICE UNDER TEST
 ==>
 Device under test

Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

IEEE P802.3an Comments

Cl 55 SC 55.8.3.4 P 214 L 19 Comment # 208
 David V James JGG
 Comment Type E Comment Status D
 DVJ-208
 Misleading capitalization
 SuggestedRemedy
 DEVICE UNDER TEST
 ==>
 Device under test
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.8.3.4 P 214 L 9 Comment # 292
 Reviriego, Pedro Agere Systems
 Comment Type E Comment Status D
 The test 'A powered MDI will not disrupt 10GBaseT and vice versa' is not clear.
 SuggestedRemedy
 Include a reference to relevant PoE standards.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.9.2 P 215 L 5 Comment # 293
 Reviriego, Pedro Agere Systems
 Comment Type E Comment Status D
 The editor's note is not underlined.
 SuggestedRemedy
 Underlined it for consistency.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55.9.3 P 215 L 10 Comment # 344
 Dawe, Piers Agilent
 Comment Type TR Comment Status D installation
 Our normative references need to be specific, version-controlled, available, reasonable and relevant. The variety of codes and regulations that might apply to IT equipment and cable installation through the near 200 countries of the world is none of these. Such local codes may include restrictions on qualifications, years of apprenticeship, gender, religion, membership of political party, pricing, ... We cannot mandate these varied and possibly unsuitable requirements. Recent PMD clauses have omitted this subclause altogether or downgraded it to a recommendation. It remains so obvious that one has to obey the law that we don't need to say that.
 SuggestedRemedy

For preference, remove the sentence 'It is a mandatory requirement that sound installation practice, as defined by applicable local codes and regulations, be followed in every instance in which such practice is applicable.', and the associated PICS. Or, if some guidance is necessary, write down specifically what to look out for, and remove the PICS. Or, less desirable, change to 'It is recommended that {proper|sound} installation practice(s), as defined by applicable local codes and regulation(s), be followed in every instance in which such practice(s) are applicable.', and remove the PICS. (Options in last sentence for info, representing the differences between .3an/D2.2 55.9.3 and 58.8.3.)
 Proposed Response Response Status W
 PROPOSED ACCEPT.

Cl 55 SC 55-14 P 203 L 13 Comment # 276
 Dove, Daniel HP ProCurve Networki
 Comment Type E Comment Status D
 I noticed the fonts are different on some equations than on others
 SuggestedRemedy
 Use a consistent font on all equations, tables, etc.
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.

IEEE P802.3an Comments

CI 55 SC 55-2 P 179 L 13 Comment # 541
 Zimmerman, George Solarflare Communicat

Comment Type TR Comment Status X

Two editorial/transcription errors in power backoff table:
 line length (m) (reference) column was not updated per the agreement at the last meeting -
 see zimmerman_2_0305.pdf. received MDI power numbers are unchanged.

Also, power backoff column should be positive values, not negative

SuggestedRemedy

"Length (m) (Reference)" Column should read as in zimmerman_2_0305.pdf, slide 8, as
 agreed:

- 0-25
- 25-35
- 45-55
- 55-65
- 65-75
- 75-85
- >85

"Minimum Power Backoff (dB)" Column should read:

- 10
- 10
- 8
- 6
- 4
- 2
- 0
- 0

Proposed Response Response Status O

CI 55 SC 55-23 P 191 L 20 Comment # 272
 Dove, Daniel HP ProCurve Networki

Comment Type TR Comment Status D pmaelec psa

The range of allowable PSD seems extraordinarily wide open. from -86dBm to -77dBm at
 0Hz and getting wider. Why?

SuggestedRemedy

Either tighten up the spec or provide a pointer to the analysis that this is reasonable and will
 still meet system functional/BER requirements.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.
 The range actually is -84 to -78 at low frequencies.

The output power constraint imposes a tighter requirement than PSD

CI 55 SC 7 P 201 L 33 Comment # 416
 Vaden, Sterling Superior Modular Prod

Comment Type E Comment Status X

replace is with are the subject is "requirements"

"segments are specified"

SuggestedRemedy

"segments are specified"

Proposed Response Response Status O

CI 55 SC 7 P 201 L 35 Comment # 417
 Vaden, Sterling Superior Modular Prod

Comment Type T Comment Status X

Load impedances of 100 Ohm add "differential, or odd mode and 50 Ohm common, or even
 mode on all duplex channels of the link segment at the near end and far end."

This is to more accurately specify the terminations under test conditions.

SuggestedRemedy

Proposed Response Response Status O

CI 55 SC 7 P 201 L 60 Comment # 418
 Vaden, Sterling Superior Modular Prod

Comment Type T Comment Status X

add "differential, or odd mode and 50 Ohm common, or even mode on all duplex channels of
 the link segment at the near end and far end."

This is to more accurately specify the terminations under test conditions.

SuggestedRemedy

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 7 P 208 L 17 Comment # 458
 Mei, Richard SYSTIMAX Solutions
 Comment Type T Comment Status X
 PSAELFEXT is calculated based on IL and PSAFEXT. For a 100-meter channel, PSAFEXT value is close to the noise floor at high frequency. From the PHY point of view, it is negligible
 SuggestedRemedy
 Please find the contribution rmei_0505.pdf
 Proposed Response Response Status O

Cl 55 SC 7.2 P 201 L 28 Comment # 243
 Muth, Jim Broadcom
 Comment Type TR Comment Status D length
 SuggestedRemedy
 (C): "At least 55m to 100m of Class E" is too ambiguous for a specification. Additionally, other parts of section 55.7 imply cable class and length are not sufficient parameters to guarantee 10G operation.
 (R): Replace first sentence of 55.7.2 with "A 10GBASE-T link segment consisting of at least 55m of Class E or at least 100m of Class F which also meets the additional transmission parameters of this subclause will provide a reliable medium."
 Proposed Response Response Status O

Cl 55 SC 7.2 P 201 L 28 Comment # 525
 Zimmerman, George Solarflare Communicat
 Comment Type E Comment Status X
 Wording "A 10GBASE-T link segment consisting of at least 55 to 100 meters ..." implies the minimum distance is 55m.
 SuggestedRemedy
 Change wording to "A 10GBASE-T link segment consisting of UP TO at least 55 to 100m..." (change shown in CAPS).
 Proposed Response Response Status O

Cl 55 SC 7.3.2.2 P 209 L 10 Comment # 528
 Zimmerman, George Solarflare Communicat
 Comment Type E Comment Status X
 Typo: AELFEXT_consants
 SuggestedRemedy
 change to AELFEXT_constants
 Proposed Response Response Status O

Cl 55 SC 8.1 P 211 L 9 Comment # 532
 Zimmerman, George Solarflare Communicat
 Comment Type E Comment Status X
 Typo in reference: IEC 60603-7: 1995 should be IEC 60603-7: 1996
 SuggestedRemedy
 Correct to IEC 60603-7: 1996 on page 211 line 9
 Correct to IEC 60603-7: 1996 on page 233 line 8
 Proposed Response Response Status O

Cl 55 SC 8.2 P 212 L 6 Comment # 523
 Zimmerman, George Solarflare Communicat
 Comment Type T Comment Status X
 Recommendation to implement the crossover in the PHY local to the multiport device is not compatible with mandatory MDI crossover, considering the crossover is determined before the autonegotiation process.
 SuggestedRemedy
 Remove recommendation to implement crossover in the PHY local to the multiport devices
 Proposed Response Response Status O

Cl 55 SC 8.3 P 212 L 23 Comment # 533
 Zimmerman, George Solarflare Communicat
 Comment Type E Comment Status X
 Reference to ANSI/TIA/EIA-568-B:2:2002 should be reference to ...B2-1:2002
 SuggestedRemedy
 Correct reference as above.
 Proposed Response Response Status O

IEEE P802.3an Comments

CI 55 SC 8.3.2 P 212 L 44 Comment # 456
 Cohen, Larry Independent
 Comment Type T Comment Status X
 The impedance balance test circuit shown in Figure 55-31 is not practical to the specified bandwidth of 500 MHz. Note the component impedance, which includes the fabrication parasitics as well as the nominal resistance, must be matched to the necessary tolerance. Also the given test circuit provides 96 Ohms instead of 100 Ohms differential termination.
SuggestedRemedy
 Use a balun based test circuit. Example off-the-shelf test balun BH Electronics 040-0092 provides a minimum of 50 dB balance to 650 MHz.
 Proposed Response Response Status O

CI 55 SC 8.3.3 P 213 L 27 Comment # 457
 Cohen, Larry Independent
 Comment Type T Comment Status X
 The common-mode output signal measured on a single pair may have a partial return path through phantom circuit coupling and hence is not the true common-mode output applicable to potential radiated emission. Emission limits are frequency dependent so a single wideband peak-to-peak specification limit is not applicable to emissions compliance. Finally, the common-mode output voltage test circuit shown in Figure 55-32 is not practical to the specified bandwidth. Note the component impedance, which includes the fabrication parasitics as well as the nominal resistance value, must be matched to the necessary tolerance.
SuggestedRemedy
 An antenna current measurement performed with a clamp-on current probe over the entire cable (all four pairs at once) would provide the true common-mode output. Change the single pair common-mode voltage measurement to an antenna current (current probe) measurement. Change the peak-to-peak specification to a frequency dependent limit mask whereby the current is measured over a specific bandwidth (e.g. 100 kHz.).
 However, if the task force chooses to remain with a single-pair common-mode voltage measurement, replace the test circuit in Figure 55-32 with a balun based test circuit. Example off-the-shelf test balun BH Electronics 040-0092 provides a minimum of 50 dB balance to 650 MHz.
 Proposed Response Response Status O

CI 55 SC 8.3.4 P 214 L 9 Comment # 534
 Zimmerman, George Solarflare Communicat
 Comment Type T Comment Status X
 The requirement "A powered MDI will not disrupt 10GBASE-T and vice versa." is not applicable because there is no 10GBASE-T link to which one can apply power. It seems that the intent was to assure that when a 10GBASE-T PHY is connected to a powered MDI as a link partner, no damage is caused to either the 10GBASE-T PHY or the powered MDI.
SuggestedRemedy
 Reword to "A 10GBASE-T PHY shall be able to sustain, without damage, connection to a powered MDI, and shall not cause damage to the powered MDI".
 Proposed Response Response Status O

CI 55 SC 9 P 215 L 4 Comment # 524
 Zimmerman, George Solarflare Communicat
 Comment Type E Comment Status X
 The editors note appears to be a fragment out of place. It is not clear what is the application of the frequency range of interest and what the equations are.
SuggestedRemedy
 Delete or clarify
 Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC A11 P A11 L A11 Comment # 383
 Sailesh Rao Phytan Technologies, I

Comment Type TR Comment Status D linecode

It is not feasible to implement a robust receiver for 100m Cat-6E (Model 3) line length operation using the 128 Double Square line coding scheme documented in Draft 2.0, for two main reasons:

1. Even assuming all noise sources are perfectly Gaussian, the input-referred rms noise budget for the receiver is 650 microvolts, using an optimum MMSE implementation (ref. vareljian_1_1104.pdf). This is the noise budget that must be allocated to overcome
 - a) residual Echo
 - b) residual NEXT
 - c) residual FEXT
 - d) A/D quantization noise
 - e) sampling jitter noise
 - f) circuit thermal noise
 - g) finite precision implementation noise, etc.

This total noise budget is inadequate and it is, in fact, 7.0dB lower than just the thermal noise budget used in the 802.3ap task force models (altnann_01_1104.pdf, slide 5).

2. Three out of seven bits in the 128DSQ line code are not protected by the LDPC code.

These unprotected bits are vulnerable to isolated noise events on the order of a few millivolts (ref. rao_1_1104.pdf, slide 23).

SuggestedRemedy

At least two line code alternatives were presented in rao_2_1104.pdf to address the fundamental inadequacies of the 128-DSQ line code used in D2.0. Either PAM16-P or PAM8-P would be an useable choice for 10GBASE-T.

Proposed Response Response Status W

PROPOSED REJECT.

The task force has previously reviewed and rejected these proposals.

The input referred noise budget for these is not substantially higher and the Gaussian noise margin is lower.

Cl 55 SC Eqn: 55-29 P 208 L 17 Comment # 686
 Paul Kish Belden CDT

Comment Type T Comment Status X

The PS AELFEXT requirement at low frequencies (less than 8 MHz) and at high frequencies (greater than 300 MHz) is very sensitive to the noise floor of the test setup for pair-to-pair alien crosstalk measurements. In practice 90 dB is a reasonable value for the noise floor of individual pair-to-pair AFEXT measurements. For a worst case scenario with 24 disturbers (bundled configuration with six cables around a victim cable, the combined noise from all disturbers is 76.2 dB. At high frequencies, this gives a significant error (see table below) because the requirement is very close to the noise floor.

Noise (pr-pr) 90

| | PS AFEXT | | | | | | |
|-----|------------|-------|----------|----------|------------|------------|--|
| | PS AELFEXT | IL | PS AFEXT | PS Noise | + PS Noise | Difference | |
| 1 | 77.00 | 2.19 | 79.19 | 76.20 | 74.43 | 4.76 | |
| 2 | 70.98 | 2.96 | 73.93 | 76.20 | 71.91 | 2.02 | |
| 4 | 64.96 | 4.09 | 69.05 | 76.20 | 68.28 | 0.77 | |
| 8 | 58.94 | 5.73 | 64.67 | 76.20 | 64.37 | 0.30 | |
| 10 | 57.00 | 6.40 | 63.40 | 76.20 | 63.18 | 0.22 | |
| 100 | 37.00 | 20.77 | 57.77 | 76.20 | 57.71 | 0.06 | |
| 200 | 30.98 | 29.97 | 60.95 | 76.20 | 60.83 | 0.13 | |
| 300 | 27.46 | 37.28 | 64.74 | 76.20 | 64.44 | 0.30 | |
| 400 | 24.96 | 43.61 | 68.57 | 76.20 | 67.88 | 0.69 | |
| 500 | 23.02 | 49.31 | 72.33 | 76.20 | 70.84 | 1.49 | |

SuggestedRemedy

- 1) Add a measurement precaution that the noise floor needs to be (10 + 10log(n))better than the specified PS AFEXT requirementment.
- 2) If this isn't practical, provide a formula for correcting the alien PS AFEXT measurements.

Proposed Response Response Status O

IEEE P802.3an Comments

CI 55 SC Eqn: 55-30 P 208 L 26 Comment # 687
 Paul Kish Belden CDT

Comment Type T Comment Status X

The PS AELFEXT_avg requirement at low frequencies (less than 8 MHz) and at high frequencies (greater than 300 MHz) is very sensitive to the noise floor of the test setup for pair-to-pair alien crosstalk measurements. In practice 90 dB is a reasonable value for the noise floor of individual pair-to-pair AFEXT measurements. For a worst case scenario with 24 disturbers (bundled configuration with six cables around a victim cable, the combined noise from all disturbers is 76.2 dB. At high frequencies, this gives a significant error (see table below) because the requirement is very close to the noise floor.

Noise (pr-pr) 90

| | PS AFEXT | | | | | | |
|-----|----------------|-------|----------|----------|------------|------------|--|
| | PS AELFEXT_avg | IL | PS AFEXT | PS Noise | + PS Noise | Difference | |
| 1 | 81.00 | 2.19 | 83.19 | 76.20 | 75.41 | 7.78 | |
| 2 | 74.98 | 2.96 | 77.93 | 76.20 | 73.97 | 3.97 | |
| 4 | 68.96 | 4.09 | 73.05 | 76.20 | 71.33 | 1.71 | |
| 8 | 62.94 | 5.73 | 68.67 | 76.20 | 67.96 | 0.71 | |
| 10 | 61.00 | 6.40 | 67.40 | 76.20 | 66.86 | 0.54 | |
| 100 | 41.00 | 20.77 | 61.77 | 76.20 | 61.62 | 0.15 | |
| 200 | 34.98 | 29.97 | 64.95 | 76.20 | 64.64 | 0.31 | |
| 300 | 31.46 | 37.28 | 68.74 | 76.20 | 68.02 | 0.72 | |
| 400 | 28.96 | 43.61 | 72.57 | 76.20 | 71.00 | 1.56 | |
| 500 | 27.02 | 49.31 | 76.33 | 76.20 | 73.25 | 3.08 | |

SuggestedRemedy

- 1) Add a measurement precaution that the noise floor needs to be (10 + 10log(n))better than the specified PS AFEXT requirement.
- 2) If this isn't practical, provide a formula for correcting the alien PS AFEXT measurements.

Proposed Response Response Status O

CI 55 SC Figure 55-17 P 174 L 56 Comment # 438
 Daines, Kevin World Wide Packets

Comment Type ER Comment Status X

Change figure by replacing ".indicate" with ".indication"

SuggestedRemedy

As per comment

Proposed Response Response Status O

CI 55 SC Figure 55-4 P 145 L 41 Comment # 434
 Daines, Kevin World Wide Packets

Comment Type ER Comment Status X

Change figure by replacing ".indicate" with ".indication"

SuggestedRemedy

As per comment

Proposed Response Response Status O

CI 55 SC Figure 55-5 P 150 L 47 Comment # 436
 Daines, Kevin World Wide Packets

Comment Type ER Comment Status X

Change figure by replacing ".indicate" with ".indication"

SuggestedRemedy

As per comment.

Proposed Response Response Status O

CI 55 SC Figure 55-8 P 155 L 32 Comment # 437
 Daines, Kevin World Wide Packets

Comment Type E Comment Status X

I don't believe color is permitted in IEEE 802.3 standards.

SuggestedRemedy

Remove color.

Proposed Response Response Status O

CI 55 SC Table 55-8 P 207 L 29 Comment # 587
 Thompson, Geoff Nortel

Comment Type TR Comment Status X

Invalid references
 same basic comment as my #2

SuggestedRemedy

See my #2

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55A SC P 237 L 19 Comment # 367
 Barrass, Hugh Cisco Systems

Comment Type E Comment Status D

The reference should be in Annex A.

SuggestedRemedy

Replace:

"A classic reference on LDPC codes is "Low-Density Parity-Check codes," by Robert G. Gallager - The MIT Press (September 15, 1963)."

With:

"For further information on LDPC codes, see reference [Bnn]."

Add reference to Annex A.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 55A SC P 237 L 8 Comment # 368
 Barrass, Hugh Cisco Systems

Comment Type ER Comment Status D

The editor's note notwithstanding, the generator matrix must be made available in the public area of the website for future drafts.

SuggestedRemedy

Change the URL for this annex and for Clause 55.3 to point to a public area.

Proposed Response Response Status W

PROPOSED REJECT.

Drafts are in the private area. This is a part of the draft.

Cl 55A SC P 237 L 8 Comment # 366
 Barrass, Hugh Cisco Systems

Comment Type E Comment Status D

It is a bad idea to put the reference for the matrix generator in this position and in Clause 55.3

Note that this comment must be taken in conjunction with the preceding comment to remove the information from Clause 55.3.

SuggestedRemedy

Add the following text at the beginning of the paragraph:

"The file http://www.ieee802.org/3/an/private/gen_802.3an.txt contains a representation of G. gen_802.3an.txt contains 1723 rows, one for each row of G. Each row has numbers ranging from 0 to 2047 separated by spaces. Each number represents the column index of the "1" entries in the specific row. All other entries of G are "0". G can also be constructed from P, which is available in PDF format online at <https://www.ieee802.org/3/an/private/???pdf>. Annex 55A is an informative annex that describes how G was obtained from a sparse parity check matrix."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Cl 55A SC 55A P 237 L 19 Comment # 346
 Dawe, Piers Agilent

Comment Type E Comment Status D

Add the reference to the bibliography

SuggestedRemedy

per comment

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 99 SC P 1 L 24 Comment # 565
 Booth, Brad Intel

Comment Type E Comment Status X

This isn't a Task Force ballot.

SuggestedRemedy

Change to be Working Group ballot.

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 99 SC P1 L 24 Comment # 303
Dawe, Piers Agilent
Comment Type E Comment Status D
We're in working group ballot now.
SuggestedRemedy
Change 'Task Force Ballot' to 'working group ballot'.
Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 99 SC P2 L Comment # 607
Grow, Robert Intel
Comment Type ER Comment Status X
Front matter will be required for Sponsor Ballot. (Front matter is not part of the standard.)
SuggestedRemedy
Add more complete front matter (to be supplied by WG Chair) prior to Sponsor Ballot. It would be nice if this was done for at least one WG recirculation.
Proposed Response Response Status O

Cl 99 SC P2 L 1 Comment # 306
Dawe, Piers Agilent
Comment Type E Comment Status D
This is a pretty long document...
SuggestedRemedy
Please add a table of contents.
Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
The bookmarks should suffice but we can add a table of contents.

Cl 99 SC P3 L 1 Comment # 608
Grow, Robert Intel
Comment Type ER Comment Status X
These are not revisions, the are changes.
SuggestedRemedy
Retitle as changes.
Proposed Response Response Status O