

IEEE P802.3an Comments

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

Comment Type E Comment Status D editing

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 W

PROPOSED ACCEPT.

Cl 00 SC P L Comment # 301  
 Glenn Parsons Nortel

Comment Type E Comment Status D headers

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.

Change all headers to:

IEEE P802.3an DRAFT 2.1 Draft Amendment to IEEE STD 802.3-2005

Cl 00 SC P L Comment # 1  
 NoName

Comment Type E Comment Status D

*SuggestedRemedy*

Proposed Response Response Status W

IEEE P802.3an Comments

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

Comment Type E Comment Status D editing

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 W

PROPOSED ACCEPT IN PRINCIPLE.

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

Comment Type ER Comment Status D editing

The title 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 W

PROPOSED ACCEPT.

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

Comment Type TR Comment Status D cabling

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 W

PROPOSED ACCEPT IN PRINCIPLE.

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 # 444  
 Wael William Diab Cisco Systems

Comment Type E Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

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

Comment Type E Comment Status D fonts

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 W

PROPOSED ACCEPT.

Appropriate fonts have been loaded and this problem should disappear from subsequent drafts.

IEEE P802.3an Comments

Cl 00 SC P3 L0 Comment # 606  
 Grow, Robert Intel  
 Comment Type ER Comment Status D headers  
 Headers are not correct.  
 SuggestedRemedy  
 Replace with recommended headers.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 00 SC P3 L15 Comment # 618  
 Grow, Robert Intel  
 Comment Type E Comment Status D editing  
 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 W  
 PROPOSED ACCEPT.

Cl 00 SC 14.3.1.2.1 P L Comment # 502  
 Dave, Nack Solarflare Communicati  
 Comment Type T Comment Status D link pulse  
 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 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 A) typos have to be fixed  
 B) Is there a cleaner solution (e.g model the load to reflect channels in use today)?  
 C) is it better to make the change in Clause 14

IEEE P802.3an Comments

Cl 01 SC P3 L1 Comment # 609

Grow, Robert Intel

Comment Type E Comment Status D editing

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Cl 01 SC 1.4 P3 L35 Comment # 424

Daines, Kevin World Wide Packets

Comment Type ER Comment Status D DSQ128

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 W

PROPOSED ACCEPT.

Will change all to DSQ128

Cl 01 SC 1.4 P3 L40 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 W

PROPOSED ACCEPT IN PRINCIPLE.

Page 3, line 50 is incorrect.

We scramble the full (64+1)bit block, including the data/ctrl header. This will be corrected in clause 1

Cl 01 SC 1.4 P3 L40 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 W

PROPOSED ACCEPT IN PRINCIPLE.

Correct to 65-bit blocks are scrambled

Cl 01 SC 1.4 P3 L44 Comment # 2

David V James JGG

Comment Type E Comment Status D

DVJ-2  
Misspelling

SuggestedRemedy

).  
==>  
)

Proposed Response Response Status W

PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 01 SC 1.4 P3 L58 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Add:  
 1.4.xxx Tomlinson-Harashima precoder (THP): A precoding technique for intersymbol interference mitigation. (See IEEE 802.3 Clause 55.)

Cl 01 SC 1.5 P3 L52 Comment # 454  
 Healey, Adam Agere Systems  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Add as follows:  
 AN - auto-negotiation  
 BP - base page  
 LD - local device  
 LP - link partner  
 NP - next page  
 XNP - extended next page

Cl 01 SC 1.5 P3 L58 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 IN PRINCIPLE.

THP - see comments #320, 321  
 For IIR and FIR, add to 1.5 only:  
 FIR - finite impulse response  
 IIR - infinite impluse response

Cl 01 SC 1.5 P3 L58 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.

Cl 28 SC P25 L36 Comment # 556  
 Bradshaw, Peter Intersil  
 Comment Type E Comment Status D  
 "after a sucessful master/slave" msiss-spelt  
 SuggestedRemedy  
 Replace "after a sucessful master/slave" by "after a successful master/slave"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 28 SC 2.1.1.1 P6 L10 Comment # 543  
 Zimmerman, George Solarflare Communicati

Comment Type TR Comment Status D link pulse

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 requirments 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 W

PROPOSED ACCEPT IN PRINCIPLE.

Task Force should discuss.

Cl 28 SC 28 P6 L1 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 W

PROPOSED ACCEPT IN PRINCIPLE.

Task Force should discuss.

Cl 28 SC 28.2.1.1.1 P L Comment # 552  
 Bradshaw, Peter Intersil

Comment Type ER Comment Status D

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 W

PROPOSED REJECT.

The title of the subclause accurately reflects the contents within the subclause.

Cl 28 SC 28.2.1.1.1 P6 L16 Comment # 544  
 Matt Squire Hatteras Networks

Comment Type E Comment Status D

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 W

PROPOSED ACCEPT.

Cl 28 SC 28.2.1.1.1 P6 L17 Comment # 400  
 Barrass, Hugh Cisco Systems

Comment Type TR Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Also see response to comment 598.

IEEE P802.3an Comments

Cl 28 SC 28.2.1.1.1 P6 L22 Comment # 4  
 David V James JGG  
 Comment Type E Comment Status D CaPiTaLiZaTiOn  
 DVJ-4  
 Misleading capitalization  
 SuggestedRemedy  
 Clock Pulses  
 ==>  
 Clock pulses  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28 SC 28.2.1.1.1 P6 L23 Comment # 3  
 David V James JGG  
 Comment Type E Comment Status D figure font  
 DVJ-3  
 Wrong figure font.  
 SuggestedRemedy  
 Use 8-point Arial, here and throughout.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 17.

Cl 28 SC 28.2.1.1.1 P6 L28 Comment # 5  
 David V James JGG  
 Comment Type E Comment Status D CaPiTaLiZaTiOn  
 DVJ-5  
 Misleading capitalization  
 SuggestedRemedy  
 First Bit on Wire  
 ==>  
 First bit on wire  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28 SC 28.2.1.1.1 P6 L32 Comment # 6  
 David V James JGG  
 Comment Type E Comment Status D CaPiTaLiZaTiOn  
 DVJ-6  
 Misleading capitalization  
 SuggestedRemedy  
 Pulse Position  
 ==>  
 Pulse position  
 OR  
 pulse position  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28 SC 28.2.1.1.2 P6 L48 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  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Next Page is consistently capitalized throughout the clause. Will make consistent within Clause 28.

Cl 28 SC 28.2.1.1.2 P7 L17 Comment # 13  
 David V James JGG  
 Comment Type E Comment Status D figure font  
 DVJ-13  
 Wrong figure font.  
 SuggestedRemedy  
 Use 8-point Arial, here and throughout.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 17.

IEEE P802.3an Comments

Cl 28 SC 28.2.1.1.2 P7 L 20 Comment # 15  
 David V James JGG  
 Comment Type E Comment Status D CaPiTaLiZaTiOn  
 DVJ-15  
 Misleading capitalization  
 SuggestedRemedy  
 FLP Burst  
 ==>  
 FLP burst  
 (multiple instances)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28 SC 28.2.1.1.2 P7 L 29 Comment # 7  
 David V James JGG  
 Comment Type E Comment Status D CaPiTaLiZaTiOn  
 DVJ-7  
 Misleading capitalization  
 SuggestedRemedy  
 Clock/Data Pulse Width  
 ==>  
 Clock/cata pulse width  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28 SC 28.2.1.1.2 P7 L 31 Comment # 8  
 David V James JGG  
 Comment Type E Comment Status D CaPiTaLiZaTiOn  
 DVJ-8  
 Misleading capitalization  
 SuggestedRemedy  
 Clock Pulse to Clock Pulse==>  
 Clock pulse to clock pulse  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28 SC 28.2.1.1.2 P7 L 32 Comment # 9  
 David V James JGG  
 Comment Type E Comment Status D CaPiTaLiZaTiOn  
 DVJ-9  
 Misleading capitalization  
 SuggestedRemedy  
 Clock Pulse to Data Pulse  
 ==>  
 Clock pulse to data pulse  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28 SC 28.2.1.1.2 P7 L 33 Comment # 551  
 Bradshaw, Peter Intersil  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 28 SC 28.2.1.1.2 P7 L 34 Comment # 10  
 David V James JGG  
 Comment Type E Comment Status D CaPiTaLiZaTiOn  
 DVJ-10  
 Misleading capitalization  
 SuggestedRemedy  
 Pulses in a Burst  
 ==>  
 Pulses in a burst  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.



IEEE P802.3an Comments

Cl 28 SC 28.2.1.1.2 P7 L36 Comment # 11  
 David V James JGG  
 Comment Type E Comment Status D CaPiTaLiZaTiOn  
 DVJ-11  
 Misleading capitalization  
 SuggestedRemedy  
 Burst Width  
 ==>  
 Burst width  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28 SC 28.2.1.1.2 P7 L6 Comment # 12  
 David V James JGG  
 Comment Type E Comment Status D figure font  
 DVJ-12  
 Wrong figure font.  
 SuggestedRemedy  
 Use 8-point Arial, here and throughout.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 17.

Cl 28 SC 28.2.1.1.2 P7 L9 Comment # 14  
 David V James JGG  
 Comment Type E Comment Status D CaPiTaLiZaTiOn  
 DVJ-14  
 Misleading capitalization  
 SuggestedRemedy  
 Clock Pulse  
 ==>  
 clock pulse  
 (multiple instances)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28 SC 28.2.1.2 P8 L3 Comment # 566  
 Booth, Brad Intel  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 28 SC 28.2.1.2.1 P8 L6 Comment # 16  
 David V James JGG  
 Comment Type E Comment Status D figure font  
 DVJ-16  
 Wrong figure font.  
 SuggestedRemedy  
 Use 8-point Arial, here and throughout.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 17.

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 W  
 PROPOSED REJECT.  
 Similar text has previously been used to describe PAUSE.

IEEE P802.3an Comments

Cl 28 SC 28.2.1.2.3 P8 L39 Comment # 545  
 Matt Squire Hatteras Networks

Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Appropriate reference will be added.

Cl 28 SC 28.2.1.2.3 P8 L8 Comment # 598  
 Law, David 3Com

Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 28 SC 28.2.2.1 P10 L20 Comment # 17  
 David V James JGG

Comment Type E Comment Status D figure font  
 DVJ-17  
 Wrong figure font.

SuggestedRemedy  
 Use 8-point Arial, here and throughout.

Proposed Response Response Status W  
 PROPOSED REJECT.

The IEEE P802.3REVam Task Force believes that this comment is one on editorial style, and does not affect the technical integrity of the standard. In addition, the Task Force believes that this comment is beyond the scope of our project.

Cl 28 SC 28.2.2.1 P10 L45 Comment # 18  
 David V James JGG

Comment Type E Comment Status D figure font  
 DVJ-18  
 Wrong figure font.

SuggestedRemedy  
 Use 8-point Arial, here and throughout.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

See response to comment 17.

Cl 28 SC 28.2.2.1 P10 L51 Comment # 476  
 Thaler, Pat Agilent Technologies

Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 28 SC 28.2.2.1 P11 L3 Comment # 19  
 David V James JGG  
 Comment Type E Comment Status D figure font  
 DVJ-19  
 Wrong figure font.  
 SuggestedRemedy  
 Use 8-point Arial, here and throughout.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 17.

Cl 28 SC 28.2.2.1 P11 L4 Comment # 20  
 David V James JGG  
 Comment Type E Comment Status D CaPiTaLiZaTiOn  
 DVJ-20  
 Misleading capitalization  
 SuggestedRemedy  
 FLP Burst  
 ==>  
 FLP burst  
 (here and throughout)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28 SC 28.2.3.4 P12 L45 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 a 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 refined 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

IEEE P802.3an Comments

Cl 28 SC 28.2.3.4 P13 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 P13 L 45 Comment # 21  
 David V James JGG

Comment Type E Comment Status D figure font

DVJ-21  
 Wrong figure font.

SuggestedRemedy

Use 8-point Arial, here and throughout.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment 17.

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Will use consistent naming throughout clause.

Cl 28 SC 28.2.3.4.1 P14 L 19 Comment # 23  
 David V James JGG

Comment Type E Comment Status D figure font

DVJ-23  
 Wrong figure font.

SuggestedRemedy

Use 8-point Arial, here and throughout.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment 17.

Cl 28 SC 28.2.3.4.1 P14 L 5 Comment # 22  
 David V James JGG

Comment Type E Comment Status D figure font

DVJ-22  
 Wrong figure font.

SuggestedRemedy

Use 8-point Arial, here and throughout.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment 17.

IEEE P802.3an Comments

Cl 28 SC 28.2.3.4.12 P15 L53 Comment # 603  
 Law, David 3Com

Comment Type T Comment Status D

The 'Use of Next Pages' text needs updated to include Extended Next Pages. This includes when to send them, 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 W  
 PROPOSED ACCEPT.

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 D

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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Text for unformatted extended next page to be added.

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

Comment Type E Comment Status D

Figure 28-13 is new to Clause 28.

SuggestedRemedy

Insert change bar for the figure.

Proposed Response Response Status W  
 PROPOSED ACCEPT.

IEEE P802.3an Comments

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

Comment Type E Comment Status D

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 tghe "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 W

PROPOSED REJECT.

All management for 10GBASE-T is contained within Clause 45. Parallel detection, which may be used for 10/100 devices, allows devices which do auto-negotiate to link with devices that do not. Since auto-negotiation is required for both 1000BASE-T and 10GBASE-T, parallel detection is not necessary.

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

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

In Table 28-3, change the Technology Ability Field to 5.11:5, and add a row for the XNP bit 5.12.

Cl 28 SC 28.3 P17 L42 Comment # 675  
 Law, David 3Com

Comment Type T Comment Status D not done

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Task force to discuss

Cl 28 SC 28.3 P18 L15 Comment # 30  
 David V James JGG

Comment Type E Comment Status D CaPiTaLiZaTiOn

DVJ-30  
 Misleading capitalization

SuggestedRemedy

Technology Dependent Function  
 ==>  
 Technology dependent function

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment 180.

Cl 28 SC 28.3 P18 L2 Comment # 26  
 David V James JGG

Comment Type E Comment Status D CaPiTaLiZaTiOn

DVJ-26  
 Misleading capitalization

SuggestedRemedy

Management Interface  
 ==>  
 Management interface

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment 180.

IEEE P802.3an Comments

Cl 28 SC 28.3 P18 L21 Comment # 31  
 David V James JGG  
 Comment Type E Comment Status D CaPiTaLiZaTiOn  
 DVJ-31  
 Misleading capitalization  
 SuggestedRemedy  
 Technology Dependent PMAs  
 ==>  
 Technology dependent PMAs  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28 SC 28.3 P18 L3 Comment # 25  
 David V James JGG  
 Comment Type E Comment Status D figure font  
 DVJ-25  
 Wrong figure font.  
 SuggestedRemedy  
 Use 8-point Arial, here and throughout.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 17.

Cl 28 SC 28.3 P18 L8 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 A note will be added below the figure.

Cl 28 SC 28.3 P18 L8 Comment # 27  
 David V James JGG  
 Comment Type E Comment Status D CaPiTaLiZaTiOn  
 DVJ-27  
 Misleading capitalization  
 SuggestedRemedy  
 Auto-Negotiation Receive Function  
 ==>  
 Auto-negotiation receive function  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28 SC 28.3 P18 L8 Comment # 28  
 David V James JGG  
 Comment Type E Comment Status D CaPiTaLiZaTiOn  
 DVJ-28  
 Misleading capitalization  
 SuggestedRemedy  
 Auto-Negotiation Arbitration Function  
 ==>  
 Auto-negotiation arbitration function  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28 SC 28.3 P18 L8 Comment # 29  
 David V James JGG  
 Comment Type E Comment Status D CaPiTaLiZaTiOn  
 DVJ-29  
 Misleading capitalization  
 SuggestedRemedy  
 Auto-Negotiation Transmit Function  
 ==>  
 Auto-negotiation transmit function  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

IEEE P802.3an Comments

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 W  
 PROPOSED ACCEPT.

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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Text will be changed to reflect page\_size as status.

Cl 28 SC 28.3.1 P23 L 27 Comment # 546  
 Matt Squire Hatteras Networks  
 Comment Type E Comment Status D  
 To converse the previous case, should say XNP is both supported and enabled, rather than just enabled.  
 SuggestedRemedy  
 See comment.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Text will be added. It should be noted that extended next page ability cannot be enabled unless extended next pages are supported.

Cl 28 SC 28.3.1 P23 L 36 Comment # 380  
 George Claseman Micrel  
 Comment Type E Comment Status D not done  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 28 SC 28.3.1 P24 L 38 Comment # 381  
 George Claseman Micrel  
 Comment Type E Comment Status D not done  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 28 SC 28.3.1 P25 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 phase above.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.



IEEE P802.3an Comments

Cl 28 SC 28.3.1 P26 L2 Comment # 359

Kim, Yong Broadcom

Comment Type TR Comment Status D

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 not 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 exists
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 W

PROPOSED ACCEPT IN PRINCIPLE.

A device that does not support extended next pages does not need to change any of its timer values. A device that does support extended next pages needs to use the new timer values.

Cl 28 SC 28.3.1 P26 L4 Comment # 547

Matt Squire Hatteras Networks

Comment Type T Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Cl 28 SC 28.3.2 P25 L35 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 W

PROPOSED ACCEPT.

Cl 28 SC 28.3.2 P25 L36 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 W

PROPOSED ACCEPT.

Cl 28 SC 28.3.2 P25 L36 Comment # 382

George Claseman Micrel

Comment Type E Comment Status D

"sucsessful"

SuggestedRemedy

"successful"

Proposed Response Response Status W

PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 28 SC 28.3.2 P25 L38 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 W  
 PROPOSED ACCEPT.

Cl 28 SC 28.3.2 P25 L54 Comment # 568  
 Booth, Brad Intel  
 Comment Type E Comment Status D  
 The variable name is separated from the value.  
 SuggestedRemedy  
 Keep variable name with the value.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 28 SC 28.3.2 P26 L16 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28 SC 28.3.3 P27 L23 Comment # 550  
 Matt Squire Hatteras Networks  
 Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 28 SC 28.3.4 P28 L7 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.  
 See response to comment 17.

Cl 28 SC 28.3.4 P29 L5 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.  
 See response to comment 17.

IEEE P802.3an Comments

Cl 28 SC 28.3.4 P30 L3 Comment # 37  
 David V James JGG  
 Comment Type E Comment Status D figure font  
 DVJ-37  
 Wrong figure font.  
 SuggestedRemedy  
 Use 8-point Arial, here and throughout.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 17.

Cl 28 SC 28.3.4 P31 L8 Comment # 38  
 David V James JGG  
 Comment Type E Comment Status D figure font  
 DVJ-38  
 Wrong figure font.  
 SuggestedRemedy  
 Use 8-point Arial, here and throughout.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 17.

Cl 28 SC 28.5 P31 L42 Comment # 569  
 Booth, Brad Intel  
 Comment Type E Comment Status D  
 PICS section should start at top of page.  
 SuggestedRemedy  
 Start PICS at top of the page.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 28 SC 28.5 P31 L46 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 W  
 PROPOSED REJECT.

Cl 28 SC 28.5.3 P33 L14 Comment # 40  
 David V James JGG  
 Comment Type E Comment Status D small values centerec  
 DVJ-40  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Item, Subclause, Status, Value/comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

IEEE P802.3an Comments

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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Extended next page support is optional for a device that wishes to support auto-negotiation. For devices that support 10GBASE-T, extended next page support is mandatory. There is a mandatory PICS item in Clause 55 for support of extended next pages that a vendor will need to check. Then, the vendor can go into Clause 28 and check support of the optional Clause 28 feature.

For the comment about OPT, see response to comment 681.

Cl 28 SC 28.5.3 P33 L 27 Comment # 681  
 Law, David 3Com

Comment Type T Comment Status D  
 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  
 !ENP:0

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 28 SC 28.5.3 P33 L 6 Comment # 41  
 David V James JGG

Comment Type E Comment Status D CaPiTaLiZaTiOn  
 DVJ-41  
 Misleading capitalization

SuggestedRemedy  
 Value/comment  
 ==>  
 Value/Comment

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

See response to comment 180.

Cl 28 SC 28.5.4 P34 L 1 Comment # 611  
 Grow, Robert Intel

Comment Type ER Comment Status D  
 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 W  
 PROPOSED ACCEPT.

All subclauses not containing changes will be removed from the draft.

Cl 28 SC 28.5.4.1 P34 L 5 Comment # 42  
 David V James JGG

Comment Type E Comment Status D small values centerec  
 DVJ-42  
 Small values are supposed to be centered.

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

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

See response to comment 180.

IEEE P802.3an Comments

Cl 28 SC 28.5.4.10 P45 L 14 Comment # 53  
 David V James JGG  
 Comment Type E Comment Status D small values centered  
 DVJ-53  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Item, Subclause, Status, Value/comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28 SC 28.5.4.2 P34 L 25 Comment # 43  
 David V James JGG  
 Comment Type E Comment Status D small values centered  
 DVJ-43  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Item, Subclause, Status, Value/comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28 SC 28.5.4.2 P34 L 30 Comment # 459  
 McClellan, Brett Solarflare  
 Comment Type T Comment Status D not done  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 28 SC 28.5.4.3 P L Comment # 557  
 Bradshaw, Peter Intersil  
 Comment Type ER Comment Status D  
 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 rule, 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 The Task Force should discuss whether or not renumbering the PICS items is appropriate and necessary.

IEEE P802.3an Comments

Cl 28 SC 28.5.4.3 P35 L30 Comment # 312  
 Dawe, Piers Agilent  
 Comment Type T Comment Status D not done  
 Item 8 contradicts item 9.  
 SuggestedRemedy  
 Reconcile. Maybe status of 8 should be !OPT:M ?  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 Item 8 says that the pulses must be separated by 8 - 24 ms, and that this is mandatory. Item 9 says that the pulses must be separated by 8 - 8.5 ms, and that this is optional. Support of the optional item 9 also means you support the mandatory item 8.

Cl 28 SC 28.5.4.3 P35 L52 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Good catch. The original item 15 was mistakenly overwritten. It will be added back and the rest will be renumbered accordingly.

Cl 28 SC 28.5.4.3 P35 L7 Comment # 44  
 David V James JGG  
 Comment Type E Comment Status D small values centerec  
 DVJ-44  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Item, Subclause, Status, Value/comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28 SC 28.5.4.3 P36 L29 Comment # 46  
 David V James JGG  
 Comment Type E Comment Status D small values centerec  
 DVJ-46  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Item, Subclause, Status, Value/comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28 SC 28.5.4.3 P36 L7 Comment # 45  
 David V James JGG  
 Comment Type E Comment Status D small values centerec  
 DVJ-45  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Item, Subclause, Status, Value/comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

IEEE P802.3an Comments

Cl 28 SC 28.5.4.3 P37 L5 Comment # 47  
 David V James JGG  
 Comment Type E Comment Status D small values centerec  
 DVJ-47  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Item, Subclause, Status, Value/comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28 SC 28.5.4.5 P40 L29 Comment # 48  
 David V James JGG  
 Comment Type E Comment Status D small values centerec  
 DVJ-48  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Item, Subclause, Status, Value/comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28 SC 28.5.4.6 P42 L27 Comment # 49  
 David V James JGG  
 Comment Type E Comment Status D small values centerec  
 DVJ-49  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Item, Subclause, Status, Value/comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28 SC 28.5.4.7 P43 L43 Comment # 50  
 David V James JGG  
 Comment Type E Comment Status D small values centerec  
 DVJ-50  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Item, Subclause, Status, Value/comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28 SC 28.5.4.8 P44 L22 Comment # 313  
 Dawe, Piers Agilent  
 Comment Type T Comment Status D not done  
 Item 11a contradicts item 11b.  
 SuggestedRemedy  
 Reconcile. Is one predicated on 10GBASE-T? Are these two a set of options?  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Item 11b is meant to be predicated on 10Gb/s and will be made so you can select one of the two options.

Cl 28 SC 28.5.4.8 P44 L9 Comment # 51  
 David V James JGG  
 Comment Type E Comment Status D small values centerec  
 DVJ-51  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Item, Subclause, Status, Value/comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

IEEE P802.3an Comments

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Cl 28 SC 28.5.4.9 P45 L5 Comment # 52  
David V James JGG  
Comment Type E Comment Status D small values centered  
DVJ-52  
Small values are supposed to be centered.  
SuggestedRemedy  
Center the following columns:  
Item, Subclause, Status, Value/comment  
Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.  
See response to comment 180.

---

Cl 28 SC 28.5.5.2 P32 L29 Comment # 610  
Grow, Robert Intel  
Comment Type TR Comment Status D  
This change is wrong.  
SuggestedRemedy  
Delete 25.2 from the draft.  
Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.  
Subclause 28.5.2.2 to be deleted.

---

Cl 28 SC Figure 28-13 P14 L24 Comment # 600  
Law, David 3Com  
Comment Type TR Comment Status D  
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 W  
PROPOSED ACCEPT IN PRINCIPLE.

---

Cl 28 SC Figure 28-13 P14 L24 Comment # 601  
Law, David 3Com  
Comment Type TR Comment Status D  
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 W  
PROPOSED ACCEPT IN PRINCIPLE.



IEEE P802.3an Comments

Cl 28 SC Figure 28-7 P8 L5 Comment # 604  
 Law, David 3Com

Comment Type TR Comment Status D

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. Extende 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Task force to discuss.

Cl 28B SC 28B.2 P48 L25 Comment # 54  
 David V James JGG

Comment Type E Comment Status D small values centerec

DVJ-54  
 Small values are supposed to be centered.

SuggestedRemedy

Center the following columns:  
 Bit

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

See response to comment 180.

Cl 28B SC 28B.3 P49 L34 Comment # 55  
 David V James JGG

Comment Type E Comment Status D small values centerec

DVJ-55  
 Small values are supposed to be centered.

SuggestedRemedy

Center the following columns:  
 PAUSE, ASM\_DIR, PAUSE, ASM\_DIR

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

See response to comment 180.

Cl 28B SC 28B.3 P51 L23 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Will be consistent throughout clause.

IEEE P802.3an Comments

Cl 28B SC 28B.3 P51 L31 Comment # 58  
 David V James JGG  
 Comment Type E Comment Status D CaPiTaLiZaTiOn  
 DVJ-58  
 Misleading capitalization  
 SuggestedRemedy  
 Message Code Description  
 ==>  
 Message Code description  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28B SC 28B.3 P51 L32 Comment # 57  
 David V James JGG  
 Comment Type E Comment Status D small values centerec  
 DVJ-57  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Message Code #, M10, ... M0  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

Cl 28C SC 28C P51 L17 Comment # 401  
 Barrass, Hugh Cisco Systems  
 Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 The non-normative text will be used. The other 171 instances of "will" will remain unchanged.

Cl 28C SC 28C P51 L17 Comment # 348  
 Dawe, Piers Agilent  
 Comment Type T Comment Status D not done  
 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 W  
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 28C SC 28C P51 L 20 Comment # 599  
 Law, David 3Com  
 Comment Type T Comment Status D not done

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 than 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

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

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

Cl 28D SC 28D P53 L Comment # 314  
 Dawe, Piers Agilent

Comment Type E Comment Status D  
 Wrong page headers

*SuggestedRemedy*

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

Correct headers will be added to D2.1.

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 W  
 PROPOSED REJECT.

This is beyond the scope of our project.

IEEE P802.3an Comments

Cl 28D SC 28D.5 P54 L19 Comment # 60  
 David V James JGG  
 Comment Type E Comment Status D  
 DVJ-60  
 Excess period.  
 SuggestedRemedy  
 messages.  
 ==>  
 messages  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See response to comment 180.

Cl 28D SC 28D.6 P54 L23 Comment # 548  
 Matt Squire Hatteras Networks  
 Comment Type E Comment Status D  
 Unresolved cross-reference.  
 SuggestedRemedy  
 Fix.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 28D SC 28D.6 P54 L38 Comment # 558  
 Bradshaw, Peter Intersil  
 Comment Type E Comment Status D  
 "#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 W  
 PROPOSED ACCEPT.

Cl 28D SC 28D.6 P54 L40 Comment # 259  
 Dove, Daniel HP ProCurve Networki  
 Comment Type E Comment Status D  
 #Crossref# is visible  
 SuggestedRemedy  
 Fix it.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 28D SC 28D.6 P54 L45 Comment # 402  
 Barrass, Hugh Cisco Systems  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED REJECT.  
 Currently, 10GBASE-T requires the exchange of a single extended next page.

Cl 28D SC 28D.6 P55 L1 Comment # 549  
 Matt Squire Hatteras Networks  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED REJECT.  
 The first objective listed for 10GBASE-T in subclause 55.1.1 states that it supports full duplex  
 operation only. In addition, item h in this list states that full duplex is added to the priority  
 resolution list in 28B.3.

IEEE P802.3an Comments

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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Bullet I will be fixed.

Cl 30 SC 30.3.2.1.2 P57 L42 Comment # 316  
 Dawe, Piers Agilent  
 Comment Type E Comment Status D DSQ128  
 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 W  
 PROPOSED ACCEPT.

See response to #424

Cl 30 SC 30.3.2.1.2 P57 L44 Comment # 570  
 Booth, Brad Intel  
 Comment Type ER Comment Status D DSQ128  
 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 W  
 PROPOSED ACCEPT.

See response to #424.

Cl 30B SC 30B.2 P61 L28 Comment # 612  
 Grow, Robert Intel  
 Comment Type ER Comment Status D editing  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Some information is provided to ensure a level of context. Where not required, the information will be removed.

Cl 30B SC 30B.2 P69 L3 Comment # 571  
 Booth, Brad Intel  
 Comment Type ER Comment Status D DSQ128  
 128DSQ should be DSQ128 as per Clauses 1 & 55.

*SuggestedRemedy*  
 Change to be DSQ128.

*Proposed Response* Response Status W  
 PROPOSED ACCEPT.

See response to #424.

Cl 30B SC 30B.2 P69 L3 Comment # 613  
 Grow, Robert Intel  
 Comment Type ER Comment Status D editing  
 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 W  
 PROPOSED ACCEPT.

IEEE P802.3an Comments

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 W  
 PROPOSED REJECT.  
 Editing of this text is beyond the scope of P802.3an.

Cl 30B SC 30B.2 P73 L18 Comment # 614  
 Grow, Robert Intel  
 Comment Type ER Comment Status D editing  
 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 W  
 PROPOSED ACCEPT.

Cl 44 SC 44.1 P75 L35 Comment # 615  
 Grow, Robert Intel  
 Comment Type ER Comment Status D editing  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Some information is provided to ensure a level of context. Where not required, the information will be removed.

Cl 44 SC 44.1.3 P76 L27 Comment # 559  
 Bradshaw, Peter Intersil  
 Comment Type E Comment Status D  
 In Figure 44-1, all the PCS "boxes" except that for 10GBASE-T have their coding ratios show (64B/66B, 8B/10B).  
*SuggestedRemedy*  
 Change the PCS box label to "64B/65B PCS".  
*Proposed Response* Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change to read:  
 LDPC PCS

Cl 44 SC 44.1.4.1 P77 L7 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 W  
 PROPOSED REJECT.  
 This edit is beyond the scope of P802.3an.

IEEE P802.3an Comments

Cl 44 SC 44.1.4.1 P77 L8 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 W  
 PROPOSED REJECT.  
 This edit is beyond the scope of P802.3an.

Cl 44 SC 44.1.4.4 P77 L31 Comment # 616  
 Grow, Robert Intel  
 Comment Type E Comment Status D editing  
 The change instruction could be clearer.  
 SuggestedRemedy  
 Insert new row and column into Table 44-1 to add 10GBASE-T  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 Picture is worth a thousand words. Table is shown to reduce confusion for the IEEE editor.

Cl 44 SC 44.1.4.4 P78 L30 Comment # 572  
 Booth, Brad Intel  
 Comment Type ER Comment Status D  
 128DSQ should be DSQ128 as per Clauses 1 & 55.  
 SuggestedRemedy  
 Change to be DSQ128.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 See response to #424.

Cl 44 SC 44.1.4.4 P78 L34 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change to read:  
 Physical layer device specifications are contained in Clauses 52, 53, 54 and 55.

Cl 44 SC 44.3 P79 L28-29 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  
 PROPOSED ACCEPT IN PRINCIPLE.  
 The delay value in Table 44-2 are informative. Any changes to the normative reference will be reflected here.  
 Related delay comments are:  
 236, 242, 369

IEEE P802.3an Comments

Cl 44 SC 44.3 P79 L3 Comment # 617  
 Grow, Robert Intel  
 Comment Type E Comment Status D editing  
 Editor instruction could be clearer.  
 SuggestedRemedy  
 A row is inserted.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change editing instruction to read:  
 Insert row into Table 44-2...

Cl 44 SC Table 44-2 P79 L28 Comment # 619  
 Grow, Robert Intel  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 45 SC P L Comment # 531  
 Zimmerman, George Solarflare Communicati  
 Comment Type T Comment Status D  
 No register indicating skew delay between pairs  
 SuggestedRemedy  
 Add a register indicating skew delay as described in the attached document.  
 Proposed Response Response Status W  
 PROPOSED REJECT.

Cl 45 SC P L Comment # 530  
 Zimmerman, George Solarflare Communicati  
 Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Registers 1.130 and 1.131 will be re-organized to bit fields which will free space for these.

Cl 45 SC P91 L31 Comment # 78  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-78  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Bit(s), R/W  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC P91 L37 Comment # 76  
 David V James JGG  
 Comment Type T Comment Status D Numbering  
 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 W  
 PROPOSED REJECT.  
 Bit definition registers are consistant with style used throughtout 802.3



IEEE P802.3an Comments

Cl 45 SC P91 L46 Comment # 75  
 David V James JGG  
 Comment Type T Comment Status D Templates  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 This will be fixed by the professional IEEE editorial staff prior to publication.

Cl 45 SC P92 L16 Comment # 79  
 David V James JGG  
 Comment Type T Comment Status D Footnote  
 DVJ-79  
 Move the footnote to the RO entry, where it applies, not the header.  
 SuggestedRemedy  
 NoRemedySupplied  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 Consistant with other sections of 802.3

Cl 45 SC 2.1 P87 L50 Comment # 529  
 Zimmerman, George Solarflare Communicati  
 Comment Type E Comment Status D  
 The document refers to all processing occuring in pairs A,B,C, and D. However, the names o  
 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 W  
 PROPOSED ACCEPT.

Cl 45 SC 2.1.60 P91 L36 Comment # 535  
 Zimmerman, George Solarflare Communicati  
 Comment Type E Comment Status D THP45  
 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 W  
 PROPOSED REJECT.  
 See 478

Cl 45 SC 2.1.60.6 P92 L52 Comment # 536  
 Zimmerman, George Solarflare Communicati  
 Comment Type E Comment Status D  
 Typo in title - "If.." precedes "THP 4 setting"  
 SuggestedRemedy  
 Delete "If"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 2.1.61 P93 L29 Comment # 537  
 Zimmerman, George Solarflare Communicati  
 Comment Type E Comment Status D  
 Text says precoder setting, should be power level setting  
 SuggestedRemedy  
 change to power level setting  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 45 SC 2.1.61 P93 L42 Comment # 538  
 Zimmerman, George Solarflare Communicati

Comment Type E Comment Status D THP45

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 W

PROPOSED ACCEPT IN PRINCIPLE.

See 478

Cl 45 SC 2.1.8 P89 L38 Comment # 522  
 Zimmerman, George Solarflare Communicati

Comment Type TR Comment Status D

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 W

PROPOSED ACCEPT.

Bits are already defined as stated. Editors comment to be removed and change made as suggested.

Cl 45 SC 2.7.10.4 P113 L4 Comment # 527  
 Zimmerman, George Solarflare Communicati

Comment Type E Comment Status D

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 W

PROPOSED REJECT.

See 237

Cl 45 SC 45.2 P84 L12 Comment # 64  
 David V James JGG

Comment Type E Comment Status D Centering

DVJ-64  
 Looks bad.

SuggestedRemedy

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

Proposed Response Response Status W

PROPOSED REJECT.

See comment #180

Cl 45 SC 45.2.1 P87 L48 Comment # 317  
 Dawe, Piers Agilent

Comment Type E Comment Status D Capitalization

case

SuggestedRemedy

Change 'Test' to 'test'

Proposed Response Response Status W

PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 45 SC 45.2.1.10 P90 L14 Comment # 72  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-72  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Bit(s), R/W  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC 45.2.1.10 P90 L16 Comment # 563  
 Bradshaw, Peter Intersil  
 Comment Type T Comment Status D  
 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 W  
 PROPOSED REJECT.  
 Choice of bits previously agreed upon with other groups.

Cl 45 SC 45.2.1.10 P90 L22 Comment # 71  
 David V James JGG  
 Comment Type E Comment Status D Capitalization  
 DVJ-71  
 Misleading capitalization  
 SuggestedRemedy  
 Read Only  
 ==>  
 Read only  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 Consistant with other sections of 802.3

Cl 45 SC 45.2.1.10 P90 L23 Comment # 70  
 David V James JGG  
 Comment Type T Comment Status D Footnote  
 DVJ-70  
 Move the footnote to the RO entry, where it applies, not the header.  
 SuggestedRemedy  
 NoRemedySupplied  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 Consistant with other sections of 802.3

Cl 45 SC 45.2.1.10 P90 L4 Comment # 624  
 Grow, Robert Intel  
 Comment Type ER Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.1.59.1 P91 L10 Comment # 73  
 David V James JGG  
 Comment Type E Comment Status D Spelling  
 DVJ-73  
 Misspelling  
 SuggestedRemedy  
 Bit(s)  
 ==>  
 Bit(s)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 45 SC 45.2.1.59.1 P91 L11 Comment # 77  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-77  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Bit(s), R/W  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC 45.2.1.59.1 P91 L16 Comment # 74  
 David V James JGG  
 Comment Type T Comment Status D Footnote  
 DVJ-74  
 Move the footnote to the RO entry, where it applies, not the header.  
 SuggestedRemedy  
 NoRemedySupplied  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 Consistant with other sections of 802.3

Cl 45 SC 45.2.1.6 P86 L23 Comment # 560  
 Bradshaw, Peter Intersil  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 45 SC 45.2.1.6 P86 L54 Comment # 67  
 David V James JGG  
 Comment Type E Comment Status D Templates  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 This will be fixed by the professional IEEE editorial staff prior to publication.

Cl 45 SC 45.2.1.6 P86 L7 Comment # 66  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-66  
 Looks bad.  
 SuggestedRemedy  
 Center this left column.  
 Also, do this for all columns with only small width values.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

IEEE P802.3an Comments

Cl 45 SC 45.2.1.6 P87 L42 Comment # 561

Bradshaw, Peter Intersil

Comment Type T Comment Status D Numbering

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 W

PROPOSED REJECT.

Register 128 was listed as reserved to maintain consistency with previous register schemes. The first register in a set has consistantly been a control register with the next register being a status. Thus register 128 was reserved should a control register be necessary.

See comment 621

Cl 45 SC 45.2.1.6 P88 L30 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 W

PROPOSED REJECT.

Consistant with other sections of 802.3

Cl 45 SC 45.2.1.6 P88 L31 Comment # 554

Bradshaw, Peter Intersil

Comment Type E Comment Status D

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 W

PROPOSED REJECT.

Choice of bits previously agreed upon with other groups.

Cl 45 SC 45.2.1.6 P88 L39 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 W

PROPOSED REJECT.

Consistant with other sections of 802.3

Cl 45 SC 45.2.1.6.1 P88 L45 Comment # 555

Bradshaw, Peter Intersil

Comment Type E Comment Status D

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 W

PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 45 SC 45.2.1.60 P19 L91 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See comment 564

Cl 45 SC 45.2.1.60 P91 L11 Comment # 634  
 Lynskey, Eric UNH-IOL  
 Comment Type E Comment Status D THP45  
 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 W  
 PROPOSED REJECT.  
 see comment 478

Cl 45 SC 45.2.1.60 P91 L14 Comment # 635  
 Lynskey, Eric UNH-IOL  
 Comment Type E Comment Status D THP45  
 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 W  
 PROPOSED REJECT.  
 See 478

Cl 45 SC 45.2.1.60 P91 L19 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

Cl 45 SC 45.2.1.60 P91 L20 Comment # 539  
 Zimmerman, George Solarflare Communicati  
 Comment Type E Comment Status D THP45  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See 478

IEEE P802.3an Comments

CI 45 SC 45.2.1.60 P91 L21 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 W  
 PROPOSED ACCEPT.

CI 45 SC 45.2.1.60 P91 L22 Comment # 481  
 Thaler, Pat Agilent Technologies  
 Comment Type ER Comment Status D  
 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 W  
 PROPOSED ACCEPT.

CI 45 SC 45.2.1.60 P91 L25 Comment # 349  
 Dawe, Piers Agilent  
 Comment Type E Comment Status D  
 Grammar: assignment is singular  
 SuggestedRemedy  
 Change 'are' to 'is'.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 45 SC 45.2.1.60 P91 L32 Comment # 564  
 Bradshaw, Peter Intersil  
 Comment Type E Comment Status D THP45  
 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 W  
 PROPOSED REJECT.  
 See 478

CI 45 SC 45.2.1.60 P91 L34 Comment # 626  
 Lynskey, Eric UNH-IOL  
 Comment Type E Comment Status D THP45  
 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 W  
 PROPOSED REJECT.  
 See 478

CI 45 SC 45.2.1.60 P91 L36 Comment # 627  
 Lynskey, Eric UNH-IOL  
 Comment Type E Comment Status D THP45  
 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 nc selected.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 Also 478

IEEE P802.3an Comments

Cl 45 SC 45.2.1.60 P91 L39 Comment # 628  
 Lynskey, Eric UNH-IOL  
 Comment Type E Comment Status D THP45  
 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 W  
 PROPOSED REJECT.  
 Also 478

Cl 45 SC 45.2.1.60 P91 L42 Comment # 629  
 Lynskey, Eric UNH-IOL  
 Comment Type E Comment Status D THP45  
 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 W  
 PROPOSED REJECT.  
 Also 478

Cl 45 SC 45.2.1.60 P91 L45 Comment # 630  
 Lynskey, Eric UNH-IOL  
 Comment Type E Comment Status D THP45  
 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 W  
 PROPOSED REJECT.  
 Also 478

Cl 45 SC 45.2.1.60 P91 L6 Comment # 632  
 Lynskey, Eric UNH-IOL  
 Comment Type E Comment Status D THP45  
 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 W  
 PROPOSED REJECT.  
 Also 478

Cl 45 SC 45.2.1.60 P91 L8 Comment # 633  
 Lynskey, Eric UNH-IOL  
 Comment Type E Comment Status D THP45  
 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 W  
 PROPOSED REJECT.  
 Also 478

Cl 45 SC 45.2.1.60 P91-92 L36-46 Comment # 280  
 Lee Sendelbach IBM  
 Comment Type ER Comment Status D THP45  
 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 W  
 PROPOSED REJECT.  
 See 478



IEEE P802.3an Comments

Cl 45 SC 45.2.1.60.2 P92 L 29 Comment # 478  
 Thaler, Pat Agilent Technologies

Comment Type ER Comment Status D THP45

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 W

PROPOSED REJECT.

THP settings will be changed to 3 bit field for both the local transmitter and the link partner with descriptions corrected to reflect the change.

Cl 45 SC 45.2.1.60.5 P92 L 48 Comment # 479  
 Thaler, Pat Agilent Technologies

Comment Type TR Comment Status D THP45

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 W

PROPOSED REJECT.

See 478

Cl 45 SC 45.2.1.61 P93 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 P93 L 28 Comment # 480  
 Thaler, Pat Agilent Technologies

Comment Type TR Comment Status D TX Power45

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Change to 3 bit fields for both Link partner and local TX setting. Correct 45.2.1.61.1 thru 45.2.1.61.16 to reflect the bit field settings for TX power level setting and Link partner TX power level setting.

Also change table 55-2 to clearly associate power level setting numbers (1-8) to TX power.

IEEE P802.3an Comments

Cl 45 SC 45.2.1.61.4 P94 L5 Comment # 82  
 David V James JGG  
 Comment Type E Comment Status D Spelling  
 DVJ-82  
 Double parenthesis.  
 SuggestedRemedy  
 Bit(s)  
 ==>  
 Bit(s)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.1.61.4 P94 L6-45 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See 480

Cl 45 SC 45.2.1.61.4 P94 L7 Comment # 80  
 David V James JGG  
 Comment Type T Comment Status D Numbering  
 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 W  
 PROPOSED REJECT.  
 Bit definition registers are consistant with style used throughout 802.3

Cl 45 SC 45.2.1.61.4 P94 L8 Comment # 81  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-81  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Bit(s), R/W  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC 45.2.1.62 P96 L32 Comment # 85  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-85  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Bit(s), R/W  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC 45.2.1.62 P96 L32 Comment # 84  
 David V James JGG  
 Comment Type T Comment Status D Numbering  
 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 W  
 PROPOSED REJECT.  
 Bit definition registers are consistant with style used throughout 802.3

IEEE P802.3an Comments

CI 45 SC 45.2.1.62 P96 L33 Comment # 463  
 McClellan, Brett Solarflare  
 Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT.  
 Coordinate with editor for 55.5.2

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

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 W  
 PROPOSED REJECT.  
 Consistant with other sections of 802.3

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

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 W  
 PROPOSED REJECT.  
 Previously decided by vote.

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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 This will be fixed by the professional IEEE editorial staff prior to publication.

IEEE P802.3an Comments

Cl 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 W

PROPOSED REJECT.

Section 1.2.5 of 802.3 specifically requires that hex numbers be denoted with "0x" preceding the hexadecimal value.

Cl 45 SC 45.2.1.7.4 P89 L15 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 W

PROPOSED ACCEPT.

Cl 45 SC 45.2.1.71 P98 L12 Comment # 636  
 Lynskey, Eric UNH-IOL

Comment Type E Comment Status D

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 W

PROPOSED ACCEPT.

Cl 45 SC 45.2.1.8 P89 L53 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 W

PROPOSED ACCEPT.

Cl 45 SC 45.2.1.8 P89 L56 Comment # 562  
 Bradshaw, Peter Intersil

Comment Type TR Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

See response to 522

Cl 45 SC 45.2.3 P98 L48 Comment # 88  
 David V James JGG

Comment Type E Comment Status D

Centering

DVJ-88

Small values are supposed to be centered.

SuggestedRemedy

Center the following columns:

Register address

Proposed Response Response Status W

PROPOSED REJECT.

See comment #180

IEEE P802.3an Comments

Cl 45 SC 45.2.3 P98 L56 Comment # 87  
 David V James JGG  
 Comment Type T Comment Status D Templates  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 This will be fixed by the professional IEEE editorial staff prior to publication.

Cl 45 SC 45.2.3.11.4 P103 L6 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 45 SC 45.2.3.12 P103 L25 Comment # 96  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-96  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Bit(s), R/W  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC 45.2.3.12 P103 L31 Comment # 95  
 David V James JGG  
 Comment Type T Comment Status D Numbering  
 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 throughout, list the 0 value first and start counting upwards.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 Bit definition registers are consistent with style used throughout 802.3

Cl 45 SC 45.2.3.6 P100 L31 Comment # 90  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-90  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Bit(s), R/W  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC 45.2.3.6 P100 L36 Comment # 89  
 David V James JGG  
 Comment Type T Comment Status D Numbering  
 DVJ-89  
 This inconsistency is very confusing. Most lists start from 0.  
 SuggestedRemedy  
 Here and throughout, list the 0 value first and start counting upwards.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 Bit definition registers are consistent with style used throughout 802.3

IEEE P802.3an Comments

Cl 45 SC 45.2.3.7 P101 L13 Comment # 92  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-92  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Bit(s), R/W  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC 45.2.3.7 P101 L15 Comment # 91  
 David V James JGG  
 Comment Type T Comment Status D Numbering  
 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 throughout, list the 0 value first and start counting upwards.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 Bit definition registers are consistant with style used throughout 802.3

Cl 45 SC 45.2.3.7.4 P102 L12 Comment # 94  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-94  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Bit(s), R/W  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC 45.2.3.7.4 P102 L16 Comment # 93  
 David V James JGG  
 Comment Type T Comment Status D Numbering  
 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 throughout, list the 0 value first and start counting upwards.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 Bit definition registers are consistant with style used throughout 802.3

Cl 45 SC 45.2.7 P104 L31 Comment # 97  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-97  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Register address  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC 45.2.7 P104 L48 Comment # 414  
 McConnell, Mike KeyEye Communicatio  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 45 SC 45.2.7 P105 L14 Comment # 455  
 Healey, Adam Agere Systems

Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.7 P113 L45 Comment # 460  
 McClellan, Brett Solarflare

Comment Type E Comment Status D FD45  
 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 W  
 PROPOSED REJECT.

10GBASE-T only supports Full Duplex. Delete bit 7.32.12, 7.33.11 and subclauses 45.2.7.10. and 45.2.7.11.5.

see # 237

Cl 45 SC 45.2.7.1 P105 L32 Comment # 99  
 David V James JGG

Comment Type E Comment Status D Centering  
 DVJ-99  
 Small values are supposed to be centered.

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

Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC 45.2.7.1 P105 L36 Comment # 98  
 David V James JGG

Comment Type T Comment Status D Numbering  
 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 throughout, list the 0 value first and start counting upwards.

Proposed Response Response Status W  
 PROPOSED REJECT.

Bit definition registers are consistant with style used throughout 802.3

Cl 45 SC 45.2.7.1.3 P106 L30 Comment # 676  
 Law, David 3Com

Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 45 SC 45.2.7.10 P112 L12 Comment # 108  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-108  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Bit(s), R/W  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC 45.2.7.10 P112 L22 Comment # 107  
 David V James JGG  
 Comment Type T Comment Status D Numbering  
 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 W  
 PROPOSED REJECT.  
 Bit definition registers are consistant with style used throughout 802.3

Cl 45 SC 45.2.7.10 P112 L22-25 Comment # 237  
 Shimon Muller Sun Microsystems, Inc.  
 Comment Type T Comment Status D FD45  
 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 W  
 PROPOSED ACCEPT.  
 Remove 45.2.7.10.4, bit 7.33.11 from Table 45-125 and 45.2.7.11.5 also.

Cl 45 SC 45.2.7.10 P112 L29 Comment # 462  
 McClellan, Brett Solarflare  
 Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Do we need to report the seed value at all and if so it should be RO in register 7.34.15:6.  
 Cl 45 SC 45.2.7.10 P112 L29 Comment # 110  
 David V James JGG  
 Comment Type E Comment Status D Capitalization  
 DVJ-110  
 Misleading capitalization  
 SuggestedRemedy  
 Read/Write  
 ==>  
 read/write

Proposed Response Response Status W  
 PROPOSED REJECT.  
 Consistant with other sections of 802.3



IEEE P802.3an Comments

Cl 45 SC 45.2.7.10 P112 L 29 Comment # 109  
 David V James JGG  
 Comment Type E Comment Status D Capitalization  
 DVJ-109  
 Misleading capitalization  
 SuggestedRemedy  
 Latching High  
 ==>  
 Latching high  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 Consistant with other sections of 802.3

Cl 45 SC 45.2.7.10 P112 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 extneded next page exchange of the technology message? Since this register contains only some of the information how cna it allow a power up or reset to a nomral 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 P114 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 45 SC 45.2.7.10.4 P113 L 1-6 Comment # 238  
 Shimon Muller Sun Microsystems, Inc.  
 Comment Type T Comment Status D FD45  
 See my comment against 45.2.7.10.  
 SuggestedRemedy  
 Delete this sub-clause.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 See #237, 461

Cl 45 SC 45.2.7.10.4 P113 L 3 Comment # 461  
 McClellan, Brett Solarflare  
 Comment Type E Comment Status D FD45  
 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 W  
 PROPOSED REJECT.  
 10GBASE-T only supports Full Duplex. Delete bit 7.32.12, 7.33.11 and subclauses 45.2.7.10. and 45.2.7.11.5.  
 see # 237

IEEE P802.3an Comments

Cl 45 SC 45.2.7.11 P113 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 P113 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 W

PROPOSED ACCEPT IN PRINCIPLE.

This will be fixed by the professional IEEE editorial staff prior to publication.

Cl 45 SC 45.2.7.11 P113 L 29 Comment # 112  
 David V James JGG

Comment Type E Comment Status D Centering

DVJ-112  
 Small values are supposed to be centered.

SuggestedRemedy

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

Proposed Response Response Status W

PROPOSED REJECT.

See comment #180

Cl 45 SC 45.2.7.11 P113 L 29 Comment # 111  
 David V James JGG

Comment Type T Comment Status D Numbering

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 W

PROPOSED REJECT.

Bit definition registers are consistant with style used throughtout 802.3

Cl 45 SC 45.2.7.11 P113 L 41-45 Comment # 239  
 Shimon Muller Sun Microsystems, Inc.

Comment Type T Comment Status D FD45

See my comment against 45.2.7.10.

SuggestedRemedy

Delete this bit from Table 45-125.

Proposed Response Response Status W

PROPOSED ACCEPT.

See #237

IEEE P802.3an Comments

Cl 45 SC 45.2.7.11 P114 L7 Comment # 412  
 McConnell, Mike KeyEye Communicatio  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.7.11.5 P114 L53-58 Comment # 240  
 Shimon Muller Sun Microsystems, Inc.  
 Comment Type T Comment Status D FD45  
 See my comment against 45.2.7.10.  
 SuggestedRemedy  
 Delete this sub-clause.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 See #237

Cl 45 SC 45.2.7.12 P116 L14 Comment # 115  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-115  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Bit(s), R/W  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC 45.2.7.12 P116 L22 Comment # 114  
 David V James JGG  
 Comment Type T Comment Status D Numbering  
 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 W  
 PROPOSED REJECT.  
 Bit definition registers are consistant with style used throughout 802.3

Cl 45 SC 45.2.7.2.1 P106 L55 Comment # 482  
 Thaler, Pat Agilent Technologies  
 Comment Type TR Comment Status D  
 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 W  
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 45 SC 45.2.7.2.1 P107 L4 Comment # 101  
 David V James JGG  
 Comment Type E Comment Status D Templates  
 DVJ-101  
 Nonstandard table lines.  
 SuggestedRemedy  
 Thin on the outside.  
 Very-thin on the inside.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 This will be fixed by the professional IEEE editorial staff prior to publication.

Cl 45 SC 45.2.7.2.1 P107 L6 Comment # 102  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-102  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Bit(s), R/W  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC 45.2.7.2.1 P107 L8 Comment # 100  
 David V James JGG  
 Comment Type T Comment Status D Numbering  
 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 W  
 PROPOSED REJECT.  
 Bit definition registers are consistant with style used throughout 802.3

Cl 45 SC 45.2.7.2.3 P107 L42 Comment # 582  
 Ilango Ganga Intel  
 Comment Type E Comment Status D  
 "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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Change text to read, "The Page Received bit shall be reset to zero on a read of the AN status register (Register 7.1) or if present the Auto-Negotiation expansion register 6 as defined in 28.2.1.4.5.  
 See comment 413

Cl 45 SC 45.2.7.2.3 P107 L43 Comment # 413  
 McConnell, Mike KeyEye Communicatio  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED REJECT.  
 See comment 582

IEEE P802.3an Comments

Cl 45 SC 45.2.7.2.4 P107 L50 Comment # 484  
 Thaler, Pat Agilent Technologies

Comment Type TR Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Change second sentence to read, "When read as a logic zero, bit 7.1.5 indicates that the auto negotiation process has not been completed, and that the contents of 7.16, 7.19 and 7.22 through 7.27 are as defined by the current state of the Auto-Negotiation protocol, or as written for manual configuration."

Cl 45 SC 45.2.7.2.7 P108 L21 Comment # 415  
 McConnell, Mike KeyEye Communicatio

Comment Type E Comment Status D

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 W

PROPOSED ACCEPT.

Cl 45 SC 45.2.7.6 P109 L1 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

IEEE P802.3an Comments

Cl 45 SC 45.2.7.6 P109 L15 Comment # 103  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-103  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Bit(s), R/W  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC 45.2.7.6 P109 L7 Comment # 405  
 McConnell, Mike KeyEye Communicatio  
 Comment Type E Comment Status D  
 bit 7.16.14 mentioned in text is not included in table 45-120.  
 SuggestedRemedy  
 Correct table accordingly  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.7.6 P109 L8 Comment # 406  
 McConnell, Mike KeyEye Communicatio  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Values referenced to Annex 28B.  
 Also, XNP bit will added as 7.19.12 and Technology ability field will be changed to 7.19.11:5  
 see 485

Cl 45 SC 45.2.7.7 P110 L12 Comment # 104  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-104  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Bit(s), R/W  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC 45.2.7.7 P110 L18 Comment # 485  
 Thaler, Pat Agilent Technologies  
 Comment Type TR Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 XNP bit will 7.19.12 and Technology ability field will be changed to 7.19.11:5

Cl 45 SC 45.2.7.7 P110 L18 Comment # 678  
 Law, David 3Com  
 Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 XNP bit will 7.19.12 and Technology ability field will be changed to 7.19.11:5  
 Does Annex 28B will need to be updated to reflect the usage of bit 7 for XNP?

IEEE P802.3an Comments

Cl 45 SC 45.2.7.8 P110 L30 Comment # 407  
 McConnell, Mike KeyEye Communicatio  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 "On power-up or AN reset ..."

Cl 45 SC 45.2.7.8 P110 L38 Comment # 580  
 Ilango Ganga Intel  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED REJECT.  
 Register ordering is accordance with previously approved comments in prior rev.  
 See 581

Cl 45 SC 45.2.7.8 P110 L39 Comment # 105  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-105  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Bit(s), R/W  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC 45.2.7.9 P111 L1 Comment # 486  
 Thaler, Pat Agilent Technologies  
 Comment Type TR Comment Status D  
 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 consistant 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 W  
 PROPOSED ACCEPT.

Cl 45 SC 45.2.7.9 P111 L14 Comment # 581  
 Ilango Ganga Intel  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED REJECT.  
 See 580

Cl 45 SC 45.5.10.1 P119 L38 Comment # 118  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-118  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Item, Subclause, Status, Support  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

IEEE P802.3an Comments

Cl 45 SC 45.5.10.2 P120 L7 Comment # 119  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-119  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Item, Subclause, Status, Support  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC 45.5.10.3 P121 L8 Comment # 120  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-120  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Item, Subclause, Status, Support  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC 45.5.10.3 P123 L40 Comment # 411  
 McConnell, Mike KeyEye Communicatio  
 Comment Type E Comment Status D  
 subclause references are wrong for MM47-MM50  
 SuggestedRemedy  
 change 45.2.1.11.1 to correct subclause  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.5.10.6 P127 L7 Comment # 408  
 McConnell, Mike KeyEye Communicatio  
 Comment Type E Comment Status D  
 All references to subclause 45.2.1.71  
 SuggestedRemedy  
 change 45.2.1.71 to 45.2.3  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.5.10.6 P127 L7 Comment # 121  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-121  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Item, Subclause, Status, Support  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC 45.5.10.8 P132 L1 Comment # 574  
 Booth, Brad Intel  
 Comment Type E Comment Status D  
 \*AT is not required with \*AN.  
 SuggestedRemedy  
 Delete.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 Referenced subclause doesn't exist nor does \*AT => eight ball



IEEE P802.3an Comments

Cl 45 SC 45.5.10.8 P132 L8 Comment # 122  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-122  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Item, Subclause, Status, Support  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC 45.5.10.9 P132 L16 Comment # 123  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-123  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Item, Subclause, Status, Support  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC 45.5.10.9 P135 L1 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 45.5.8 P118 L5 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 W  
 PROPOSED REJECT.  
 Out of scope.

Cl 45 SC 45.5.9.2 P118 L40 Comment # 573  
 Booth, Brad Intel  
 Comment Type E Comment Status D  
 Subclause lists 802.3ae-2002 as the referenced specification.  
 SuggestedRemedy  
 Change to be 802.3an-200x in both locations.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.5.9.3 P119 L12 Comment # 409  
 McConnell, Mike KeyEye Communicatio  
 Comment Type E Comment Status D  
 refers to wrong subclause  
 SuggestedRemedy  
 change subclause reference to 45.2.3  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 45 SC 45.5.9.3 P119 L28 Comment # 410  
 McConnell, Mike KeyEye Communicatio  
 Comment Type E Comment Status D  
 Auto Neg missing from table of capabilities  
 SuggestedRemedy  
 Add Auto Neg as Optional status with proper subclause  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC 45.5.9.3 P119 L6 Comment # 117  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-117  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Item, Subclause, Status, Support  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC 45-3 P87 L46 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 Table 45-8 P88 L20 Comment # 622  
 Grow, Robert Intel  
 Comment Type ER Comment Status D  
 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 P802.3aq 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 W  
 PROPOSED ACCEPT.

Cl 45 SC Table 45-1 P84 L8 Comment # 620  
 Grow, Robert Intel  
 Comment Type ER Comment Status D  
 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 W  
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 45 SC Table 45-119 P107 L7 Comment # 483  
 Thaler, Pat Agilent Technologies  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Also add XNP as Extended next page.

Cl 45 SC Table 45-12 P90 L11 Comment # 625  
 Grow, Robert Intel  
 Comment Type ER Comment Status D  
 This is Table 45-11 in REVam.  
 SuggestedRemedy  
 Correct table number.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 45 SC Table 45-122 P110 L47 Comment # 680  
 Law, David 3Com  
 Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Pending resolution of comment XXX on clause 28.

Cl 45 SC Table 45-123 P111 L18 Comment # 106  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-106  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Bit(s), R/W  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC Table 45-2 P85 L10 Comment # 65  
 David V James JGG  
 Comment Type E Comment Status D Centering  
 DVJ-65  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Bit(s), R/W  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment #180

Cl 45 SC Table 45-3 P87 L44 Comment # 621  
 Grow, Robert Intel  
 Comment Type TR Comment Status D  
 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 W  
 PROPOSED REJECT.  
 Register 128 was listed as reserved to maintain consistency with previous register schemes. The first register in a set has consistently been a control register with the next register being a status. Thus register 128 was reserved should a control register be necessary.  
 Also comment #561

IEEE P802.3an Comments

Cl 45 SC Table 45-50 P L Comment # 254  
 Szczepanek, Andre Texas Instruments  
 Comment Type E Comment Status D THP45  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See 478

Cl 45 SC Table 45-50 P91 L34 Comment # 477  
 Thaler, Pat Agilent Technologies  
 Comment Type E Comment Status D THP45  
 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 W  
 PROPOSED REJECT.  
 See 478

Cl 45 SC Table 45-8 P88 L22 Comment # 623  
 Grow, Robert Intel  
 Comment Type ER Comment Status D  
 This is table 45-7 in REVam and I don't think has changed.  
 SuggestedRemedy  
 Correct table number.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

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

Cl 55 SC P194 L Comment # 449  
 Wael William Diab Cisco Systems  
 Comment Type E Comment Status D cleanup  
 Please delete extra pages like 194.  
 SuggestedRemedy  
 delete extra pages like 194.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 55 SC 55.1 P137 L12 Comment # 329  
 Dawe, Piers Agilent  
 Comment Type ER Comment Status D cabling  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Will use publication dates when available. Till then we will use edition numbers.

IEEE P802.3an Comments

Cl 55 SC 55.1.1 P137 L26 Comment # 425  
 Daines, Kevin World Wide Packets  
 Comment Type E Comment Status D cleanup  
 The list of objectives has inconsistent punctuation (some have periods, other do not).  
 SuggestedRemedy  
 Please make consistent. Suggest no periods.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 55 SC 55.1.1 P137 L35 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 W  
 Working group to discuss

Cl 55 SC 55.1.1 P137 L35 Comment # 503  
 Baumer, Howard Broadcom  
 Comment Type TR Comment Status X length  
 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 W  
 Working group to discuss

Cl 55 SC 55.1.1 P137 L35 Comment # 388  
 Beck, Michael Alcatel Bell n.v.  
 Comment Type ER Comment Status D length  
 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 W  
 Task force to discuss

Cl 55 SC 55.1.1 P137 L37 Comment # 426  
 Daines, Kevin World Wide Packets  
 Comment Type ER Comment Status D capitalization  
 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.1.1 P137 L41 Comment # 376  
 Alan Flatman LAN Technologies  
 Comment Type E Comment Status D cleanup  
 "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 W  
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 55 SC 55.1.1 P137 L42 Comment # 331  
 Dawe, Piers Agilent  
 Comment Type T Comment Status D pcspsma cleanup  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.1.1 P137 L42 Comment # 330  
 Dawe, Piers Agilent  
 Comment Type ER Comment Status D capitalization  
 Gratuitous Capital Syndrome  
 SuggestedRemedy  
 Change 'Bit Error Rate' to 'bit error rate' - but see another comment.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change to "BER"

Cl 55 SC 55.1.1 P137 L42 Comment # 282  
 Reviriego, Pedro Agere Systems  
 Comment Type E Comment Status D cleanup  
 The draft should include the following objective:  
 I) Comply with the specifications for the XGMII (Clause 46)  
 SuggestedRemedy  
 Include the above objective  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 Is covered by 55.1.1 items c  
 Also we don't explicitly call out an optional interface

Cl 55 SC 55.1.2 P138 L27 Comment # 283  
 Reviriego, Pedro Agere Systems  
 Comment Type E Comment Status D cleanup  
 Change 10GBaseT to 10Gb/s  
 SuggestedRemedy  
 Include the above change  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 The text refers to the Medium which should be 10GBASE-T compliant.

Cl 55 SC 55.1.2 P138 L31 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 W  
 PROPOSED REJECT.

The IEEE P802.3an Task Force believes that this comment is one on editorial style, and does not affect the technical integrity of the standard. Editing does not take place during the balloting period, and will be done prior to publication by the professional editorial staff of the IEEE.

Cl 55 SC 55.1.2 P138 L5 Comment # 427  
 Daines, Kevin World Wide Packets  
 Comment Type ER Comment Status X clarification  
 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 W  
 Task force to discuss

IEEE P802.3an Comments

Cl 55 SC 55.1.2 P138 L6 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 W  
 See #124

Cl 55 SC 55.1.3 P138 L42 Comment # 332  
 Dawe, Piers Agilent  
 Comment Type ER Comment Status D clarification  
 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 W  
 PROPOSED REJECT.

The term "Hybrid" is used to refer to a two wire to four wire conversion device and has been used multiple time in IEEE Std 802.3-2002, Section Two - see page 417

Cl 55 SC 55.1.3 P138 L45 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 W  
 See #124

Cl 55 SC 55.1.3 P138 L57 Comment # 428  
 Daines, Kevin World Wide Packets  
 Comment Type E Comment Status D  
 Given the current hyphenation, the term "MAS-TER-SLAVE" is a little awkward.  
 SuggestedRemedy  
 Change to "MASTER-SLAVE" if possible.  
 Proposed Response Response Status W  
 See #124

Cl 55 SC 55.1.3 P138 L60 Comment # 429  
 Daines, Kevin World Wide Packets  
 Comment Type E Comment Status D  
 "MASTER-SLAVE" in the first part of the paragraph suddenly changed to "MASTER/SLAVE".  
 SuggestedRemedy  
 Change to "MASTER-SLAVE"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 55 SC 55.1.3 P139 L16 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 W  
 See #124

Cl 55 SC 55.1.3 P139 L3 Comment # 637  
 Yagil, Ariel Texas Instruments  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

IEEE P802.3an Comments

Cl 55 SC 55.1.3 P139 L4 Comment # 262  
 Dove, Daniel HP ProCurve Networki  
 Comment Type E Comment Status D cleanup  
 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 W  
 PROPOSED ACCEPT.  
 Leave out example

Cl 55 SC 55.1.3 P140 L Comment # 638  
 Yagil, Ariel Texas Instruments  
 Comment Type T Comment Status D pcsdma variable  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.1.3 P141 L52 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 W  
 Working group to discuss

Cl 55 SC 55.1.3.1 P141 L13 Comment # 639  
 Yagil, Ariel Texas Instruments  
 Comment Type E Comment Status D cleanup  
 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.1.3.1 P141 L13 Comment # 253  
 Szczepanek, Andre Texas Instruments  
 Comment Type E Comment Status D cleanup  
 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 W  
 PROPOSED ACCEPT.  
 See #639



IEEE P802.3an Comments

Cl 55 SC 55.1.3.1 P141 L44 Comment # 640  
 Yagil, Ariel Texas Instruments  
 Comment Type E Comment Status D cleanup  
 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.1.3.1 P141 L59 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.

Cl 55 SC 55.1.3.1 P141 L7 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 P141 L52 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 W  
 Working group to discuss

Cl 55 SC 55.1.3.2 P141 L54 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 W  
 See #124

Cl 55 SC 55.1.3.2 P142 L2 Comment # 256  
 Marris, Arthur Cadence  
 Comment Type E Comment Status D cleanup  
 Change "Each DAC" to "The DAC"  
 SuggestedRemedy  
 Change "Each DAC" to "The DAC"  
 Proposed Response Response Status W  
 PROPOSED REJECT.

IEEE P802.3an Comments

Cl 55 SC 55.1.3.2 P142 L2 Comment # 430  
 Daines, Kevin World Wide Packets  
 Comment Type ER Comment Status D cleanup  
 "Each DAC outputs" should be "Each DAC output"  
 SuggestedRemedy  
 As per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 55 SC 55.1.5 P142 L56 Comment # 432  
 Daines, Kevin World Wide Packets  
 Comment Type ER Comment Status D cleanup  
 "10GBase-T" should be "10GBASE-T"  
 SuggestedRemedy  
 As per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 55 SC 55.1.4 P142 L26 Comment # 431  
 Daines, Kevin World Wide Packets  
 Comment Type E Comment Status D cleanup  
 Change "including" to "including:"  
 SuggestedRemedy  
 As per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 55 SC 55.1.5 P142 L56 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.1.4 P142 L47 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.1.5 P142 L56 Comment # 389  
 Beck, Michael Alcatel Bell n.v.  
 Comment Type ER Comment Status D cleanup  
 10GBase-T should be written in all-uppercase.  
 SuggestedRemedy  
 "All 10GBASE-T PHY implementations..."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 55 SC 55.1.6 P143 L12 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.

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 55.10 P215 L53 Comment # 591  
 Thompson, Geoff Nortel

Comment Type ER Comment Status D cleanup

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 W

PROPOSED ACCEPT.

Cl 55 SC 55.11 P216 L1 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 W

PROPOSED REJECT.

Not clear what position the commenter is recommending.

Cl 55 SC 55.11 P216 L19 Comment # 364  
 Barrass, Hugh Cisco Systems

Comment Type T Comment Status D delay

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.11 P216 L19 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 W

See #124

Cl 55 SC 55.11 P216 L19-23 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

Working group to discuss

Delay related comments are numbered:  
 236, 242, 369

IEEE P802.3an Comments

Cl 55 SC 55.11 P216 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 W

Working group to discuss

Cl 55 SC 55.11 P216 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

Working group to discuss

Delay related comments are numbered:  
 236, 242, 369

IEEE P802.3an Comments

Cl 55 SC 55.12 P217 L2 Comment # 212  
 David V James JGG

Comment Type E Comment Status D cleanup

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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.12.1 P217-235 L Comment # 375  
 George Eisler Solarflare

Comment Type T Comment Status D pics

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 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.12.10 P235 L6 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 W  
 See #124

Cl 55 SC 55.12.11 P235 L33 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  
 See #124

Cl 55 SC 55.12.11 P237 L12 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.

IEEE P802.3an Comments

Cl 55 SC 55.12.11 P237 L18 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.

Cl 55 SC 55.12.11 P237 L7 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 P217 L46 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  
 See #124

Cl 55 SC 55.12.2 P217 L52 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  
 See #124

Cl 55 SC 55.12.2 P218 L7 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 P219 L17 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  
 See #124

IEEE P802.3an Comments

Cl 55 SC 55.12.4 P219 L54 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  
 See #124

Cl 55 SC 55.12.4.1 P219 L48 Comment # 467  
 McClellan, Brett Solarflare  
 Comment Type T Comment Status D scrambler  
 "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 In1 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.12.4.1 P220 L45 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  
 See #124

Cl 55 SC 55.12.4.1 P220 L55 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  
 See #124

Cl 55 SC 55.12.4.1 P221 L13 Comment # 466  
 McClellan, Brett Solarflare  
 Comment Type E Comment Status D cleanup  
 Typo: "self-synchronizer state" should be "self-synchronizing descrambler state"  
 SuggestedRemedy  
 Change text to:  
 "self-synchronizing descrambler state"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 55 SC 55.12.4.2 P221 L32 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  
 See #124

IEEE P802.3an Comments

Cl 55 SC 55.12.5 P222 L54 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  
 See #124

Cl 55 SC 55.12.5 P222 L6 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  
 See #124

Cl 55 SC 55.12.6 P224 L9 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  
 See #124

Cl 55 SC 55.12.6.1 P225 L14 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 IN PRINCIPLE.  
 Auto-Negotiation is used in C28  
 auto-negotiation is used in C45  
 Auto-Negotiation is used in C55

Cl 55 SC 55.12.6.1 P225 L17 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  
 See #124

Cl 55 SC 55.12.6.1 P225 L19 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.



IEEE P802.3an Comments

Cl 55 SC 55.12.7 P226 L52 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.

Cl 55 SC 55.12.7 P226 L7 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  
 See #124

Cl 55 SC 55.12.7 P230 L11 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 55.12.7 P230 L28 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 55.12.8 P231 L8 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  
 See #124

Cl 55 SC 55.12.9 P233 L27 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.

IEEE P802.3an Comments

Cl 55 SC 55.12.9 P233 L44 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.

Cl 55 SC 55.12.9 P233 L8 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  
 See #124

Cl 55 SC 55.12.9 P234 L15 Comment # 230  
 David V James JGG  
 Comment Type T Comment Status D pics  
 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 55.12.9 P234 L23 Comment # 229  
 David V James JGG  
 Comment Type T Comment Status D pics  
 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 P143 L16 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 55.2 P143 L23 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.

IEEE P802.3an Comments

Cl 55 SC 55.2.2 P140 L27 Comment # 333  
 Dawe, Piers Agilent  
 Comment Type ER Comment Status D cleanup  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 We will check with David Law  
 C55 used X.indicate 60 times  
 C28 has four instances of X.indication

Cl 55 SC 55.2.2 P140 L28 Comment # 334  
 Dawe, Piers Agilent  
 Comment Type E Comment Status D pcsprma  
 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.2.2 P144 L49 Comment # 433  
 Daines, Kevin World Wide Packets  
 Comment Type ER Comment Status X cleanup  
 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 W  
 See #333

Cl 55 SC 55.2.2 P145 L35 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 55.2.2 P145 L37 Comment # 641  
 Yagil, Ariel Texas Instruments  
 Comment Type E Comment Status D cleanup  
 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.2.2 Figure 55-4 P145 L41 Comment # 434  
 Daines, Kevin World Wide Packets  
 Comment Type ER Comment Status D cleanup  
 Change figure by replacing ".indicate" with ".indication"  
 SuggestedRemedy  
 As per comment  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 The following can be added:  
 Tomlinson-Harashima Precoding (THP), is a transmit feedback equalizer that takes the known transmit modulated symbols and equalizes them before transmission. To avoid power increase a modulo is performed within the feedback equalizer.

IEEE P802.3an Comments

Cl 55 SC 55.2.3 P145 L45 Comment # 642  
 Yagil, Ariel Texas Instruments

Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.2.6.1 P147 L42 Comment # 643  
 Yagil, Ariel Texas Instruments

Comment Type T Comment Status D pcpma clarification  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Reliability measures can be helpful, but this is a receiver designer's choice

Cl 55 SC 55.2.6.1 P147 L44 Comment # 435  
 Daines, Kevin World Wide Packets

Comment Type E Comment Status D  
 Hanging indent needs to be fixed.

SuggestedRemedy  
 As per comment

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 55 SC 55.3 P149 L51 Comment # 371  
 Barrass, Hugh Cisco Systems

Comment Type E Comment Status D pcpma  
 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)

IEEE P802.3an Comments

55.3.6 PCS Management (was 55.3.18)  
*Proposed Response*      *Response Status* **W**  
 PROPOSED ACCEPT IN PRINCIPLE.

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

*Comment Type*    **E**      *Comment Status*    **D**  
 Change "The 65B-LDPC adapts..." to "The 65B-LDPC framer adapts..."

*SuggestedRemedy*  
 Change as suggested

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

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

*Comment Type*    **E**      *Comment Status*    **D**  
 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* **W**  
 PROPOSED ACCEPT.

---

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

*Comment Type*    **TR**      *Comment Status*    **D**      *pcspma 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 signal 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 exercise 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* **W**  
 PROPOSED ACCEPT IN PRINCIPLE.

A further improvement to test the LDPC would be to inject channel noise patterns on the DSQ

---

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

*Comment Type*    **T**      *Comment Status*    **D**      *pcspma testing*

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* **W**  
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 55 SC 55.3.15 P163 L31 Comment # 373  
 Barrass, Hugh Cisco Systems

Comment Type TR Comment Status D pcspma testing

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

Note also that the CRC8 function must be independent 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 code blocks contained in the 65BLDPC frame across the XGMII. On receipt of a failed CRC8 parity check, the PCS receiver shall increment the counter If\_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

If\_fail\_CRC8

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

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.3.15 P163 L31 Comment # 372  
 Barrass, Hugh Cisco Systems

Comment Type T Comment Status D pcspma clarification.

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.3.15 P163 L35 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.

IEEE P802.3an Comments

Cl 55 SC 55.3.16 P158 L9 Comment # 439  
 Ungerboeck, Gottfried Broadcom

Comment Type T Comment Status D scrambler

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.3.16 P158 L9 Comment # 440  
 Ungerboeck, Gottfried Broadcom

Comment Type T Comment Status D scrambler

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 W

PROPOSED REJECT.

This is a duplicate of comment 439. See comment 439 for response.

Cl 55 SC 55.3.16 P158 L9 Comment # 441  
 Ungerboeck, Gottfried Broadcom

Comment Type T Comment Status D scrambler

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 W

PROPOSED REJECT.

This is a duplicate of comment 439. See comment 439 for response.

Cl 55 SC 55.3.16 P164 L15 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 REJECT.

Currently follows capitalization rules of other 802.3 Clauses

IEEE P802.3an Comments

CI 55 SC 55.3.16 P164 L21 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 REJECT.  
 See 157

CI 55 SC 55.3.16 P164 L30 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 REJECT.  
 See #157

CI 55 SC 55.3.16 P164 L32 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 W  
 PROPOSED REJECT.  
 See #157

CI 55 SC 55.3.16 P164 L47 Comment # 393  
 Christopher DiMinico MC Communications  
 Comment Type E Comment Status D  
 remove space "re initialize"  
 SuggestedRemedy  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 55 SC 55.3.16 P164 L48 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.

CI 55 SC 55.3.16 P164 L7 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 REJECT.  
 See #157



IEEE P802.3an Comments

Cl 55 SC 55.3.16 P165 L9 Comment # 594  
 Tellado, Jose Teranetics  
 Comment Type TR Comment Status D scrambler  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.3.16.2 P166 L21 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.3.16.2 P166 L40 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.3.17.2.2 P167 L55 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.3.17.2.2 P168 L10 Comment # 655  
 Yagil, Ariel Texas Instruments  
 Comment Type T Comment Status D crc8  
 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 lF\_valid:  
 "LDPC frame if valid if:  
 a. All parity check of coded bits are satisfied.  
 b. CRC8 field is valid"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.3.17.2.4 P168 L36 Comment # 653  
 Yagil, Ariel Texas Instruments  
 Comment Type E Comment Status D  
 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 fnction 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 W  
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 55 SC 55.3.17.2.4 P168 L40 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.3.17.2.4 P168 L44 Comment # 654  
 Yagil, Ariel Texas Instruments  
 Comment Type T Comment Status D encode  
 The ENCODE function specified in this text is not consistent with the ENCODE function used in Figure 55-15. In the text, the fnction 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.3.17.2.4 P168 L52 Comment # 657  
 Yagil, Ariel Texas Instruments  
 Comment Type E Comment Status D  
 The term "sync header" is used instead of "data/ctrl header" in teh definitions of C,S,T & D.  
 SuggestedRemedy  
 Change the four occurrences of "sync header" to "data/ctrl header"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 55 SC 55.3.17.2.4 P169 L7 Comment # 658  
 Yagil, Ariel Texas Instruments  
 Comment Type T Comment Status D pcsdma cleanup  
 There are no 10GBASE-R control codes specified in Table 55-1  
 SuggestedRemedy  
 Change "10GBASE-R" to "10GBASE-T"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 55 SC 55.3.17.2.5 P169 L53 Comment # 660  
 Yagil, Ariel Texas Instruments  
 Comment Type T Comment Status D counters  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.3.17.2.5 P169 L7 Comment # 659  
 Yagil, Ariel Texas Instruments  
 Comment Type T Comment Status D pcsdma control  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.3.17.2.5 P170 L12 Comment # 661  
 Yagil, Ariel Texas Instruments  
 Comment Type E Comment Status D  
 The aliases PUDI and PUDR are never used  
 SuggestedRemedy  
 Eliminate these aliases  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 55 SC 55.3.18.1 P170 L44 Comment # 662  
 Yagil, Ariel Texas Instruments  
 Comment Type T Comment Status D pcpma messages  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.3.18.2 P171 L30 Comment # 664  
 Yagil, Ariel Texas Instruments  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED REJECT.  
 The condition is lfer\_test\_lf==TRUE, i.e. a new LDPC frame is available for testing

Cl 55 SC 55.3.18.2 P171 L6 Comment # 663  
 Yagil, Ariel Texas Instruments  
 Comment Type T Comment Status D counters  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.3.18.2 P172 L Comment # 665  
 Yagil, Ariel Texas Instruments  
 Comment Type T Comment Status D encode  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.3.18.2 P173 L Comment # 666  
 Yagil, Ariel Texas Instruments  
 Comment Type T Comment Status D encode  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

IEEE P802.3an Comments

Cl 55 SC 55.3.18.3 P174 L5 Comment # 685  
 Law, David 3Com

Comment Type T Comment Status D pcpma testing

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 65B-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 W

PROPOSED ACCEPT IN PRINCIPLE.

Proposed response:

The rx data presented from the PMA to the PCS will be ignored, so the tx data presented from the PCS to the PMA does not need to be related to the XGMII data.

Cl 55 SC 55.3.2 P150 L35 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 W

See #124

Cl 55 SC 55.3.2 Figure 55-5 P150 L47 Comment # 436  
 Daines, Kevin World Wide Packets

Comment Type ER Comment Status X cleanup

Change figure by replacing ".indicate" with ".indication"

SuggestedRemedy

As per comment.

Proposed Response Response Status W

See #333

Cl 55 SC 55.3.2.2 P151 L19 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 W

See #124

Cl 55 SC 55.3.2.2 P151 L19 Comment # 644  
 Yagil, Ariel Texas Instruments

Comment Type E Comment Status D

The sentence "...is processed by a Low Density Parity Check (LDPC) and then..." shold be changes to "...is processed by a Low Density Parity Check (LDPC) encoder and then..."

SuggestedRemedy

Change as above

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 55 SC 55.3.2.2 P151 L20 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 W

See #124

IEEE P802.3an Comments

Cl 55 SC 55.3.2.2 P151 L 24 Comment # 645  
 Yagil, Ariel Texas Instruments  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.3.2.2 P151 L 29 Comment # 646  
 Yagil, Ariel Texas Instruments  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.3.2.2 P151 L 59 Comment # 647  
 Yagil, Ariel Texas Instruments  
 Comment Type E Comment Status D  
 InfoField is not only used for indicating the receiver 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.3.4.1 P152 L 37 Comment # 392  
 Beck, Michael Alcatel Bell n.v.  
 Comment Type ER Comment Status D cleanup  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change to 64/65X encapsulation

Cl 55 SC 55.3.4.1 P152 L 46 Comment # 135  
 David V James JGG  
 Comment Type T Comment Status D pcsdma clarification.  
 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 and is consistent with other 802.3 standards

Cl 55 SC 55.3.4.2 P153 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 W  
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 55 SC 55.3.4.2 P153 L42 Comment # 593  
 Tellado, Jose Teranetics  
 Comment Type T Comment Status D pcspma cleanup  
 The indices for the 512 DSQ128 should span 0 to 511  
 SuggestedRemedy  
 Change the indices 252, 253, 254 and 255 to 508, 509, 510, 511  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 55 SC 55.3.4.2 P155 L Comment # 443  
 Wael William Diab Cisco Systems  
 Comment Type ER Comment Status D cleanup  
 Please remove any color from Figure 55-8.  
 SuggestedRemedy  
 Ensure that the figure is drawn in Frame without color.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 55 SC 55.3.4.2 P155 L1 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.3.4.2 P155 L10 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.3.4.2 P155 L30 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 REJECT.  
 See #124

Cl 55 SC 55.3.4.2 P155 L7 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 55.3.4.2 P155 L7 Comment # 352  
 Dawe, Piers Agilent  
 Comment Type ER Comment Status D cleanup  
 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 W  
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 55 SC 55.3.4.2 Figure 55-8 P155 L32 Comment # 437  
 Daines, Kevin World Wide Packets  
 Comment Type E Comment Status D  
 I don't believe color is permitted in IEEE 802.3 standards.  
 SuggestedRemedy  
 Remove color.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 55 SC 55.3.4.3 P155 L59 Comment # 351  
 Dawe, Piers Agilent  
 Comment Type ER Comment Status D hex notation  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.3.4.4 P156 L Comment # 648  
 Yagil, Ariel Texas Instruments  
 Comment Type T Comment Status D pcsprma cleanup  
 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.3.4.4 P156 L19 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 REJECT.  
 See #124

Cl 55 SC 55.3.4.4 P156 L20 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 REJECT.  
 See #124

Cl 55 SC 55.3.4.4 P156 L23 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 REJECT.  
 See #124

IEEE P802.3an Comments

Cl 55 SC 55.3.4.4 P156 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 REJECT.  
 See #124

Cl 55 SC 55.3.4.4 P156 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.  
 See #124

Cl 55 SC 55.3.4.4 P156 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 REJECT.  
 See #124

Cl 55 SC 55.3.4.4 P156 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.

Cl 55 SC 55.3.4.4 P156 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 REJECT.  
 See #124

Cl 55 SC 55.3.4.6 P157 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Include the first 64/65B block of the next PHY frame to account for minor self-sync scrambler error propagation



IEEE P802.3an Comments

Cl 55 SC 55.3.4.7 P157 L 26 Comment # 575  
 Booth, Brad Intel  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.3.4.7 P158 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.  
 See #124

Cl 55 SC 55.3.4.7 P158 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 REJECT.  
 See #124

Cl 55 SC 55.3.4.7 P158 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 REJECT.  
 See #124

Cl 55 SC 55.3.4.7 P158 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 REJECT. See #124

Cl 55 SC 55.3.4.7 P158 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 REJECT. See #124

IEEE P802.3an Comments

Cl 55 SC 55.3.4.7 P158 L9 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 REJECT.  
 See #124

Cl 55 SC 55.3.6 P159 L53 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 P160 L44 Comment # 656  
 Yagil, Ariel Texas Instruments  
 Comment Type T Comment Status D aux bit  
 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 W  
 PROPOSED REJECT.

Cl 55 SC 55.3.7 P160 L47 Comment # 576  
 Booth, Brad Intel  
 Comment Type E Comment Status D  
 Insert equation number.  
 SuggestedRemedy  
 As per comment. Also applies to equations in 55.3.16 and 55.3.16.1  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 55 SC 55.3.7 P161 L11 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 REJECT. See #124

Cl 55 SC 55.3.7 P161 L12 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 REJECT. See #124

IEEE P802.3an Comments

Cl 55 SC 55.3.8 P161 L Comment # 650  
 Yagil, Ariel Texas Instruments  
 Comment Type T Comment Status D *pcspma clarificator.*  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 The text in 55.3.9, page 161, line 50-52 specifies the partition. Additional explanation can be provided

Cl 55 SC 55.3.8 P161 L22 Comment # 596  
 Tellado, Jose Teranetics  
 Comment Type T Comment Status D *aux bit*  
 Aux bit is unused  
 SuggestedRemedy  
 Set to zero  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 Same as 649

Cl 55 SC 55.3.8 P161 L22 Comment # 649  
 Yagil, Ariel Texas Instruments  
 Comment Type T Comment Status D *aux bit*  
 Aux bit value is never specified  
 SuggestedRemedy  
 Specify to set Aux bit value to zero  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 55 SC 55.3.8 P161 L26 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](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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.3.9 P161 L Comment # 387  
 Juan M. Jover Phytent Technologies, I  
 Comment Type TR Comment Status D *linecode*  
 I disagree with the appropriatness 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.

IEEE P802.3an Comments

Cl 55 SC 55.3.9 P162 L4 Comment # 390  
 Beck, Michael Alcatel Bell n.v.  
 Comment Type ER Comment Status D cleanup  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.4 P3 L58 Comment # 322  
 Dawe, Piers Agilent  
 Comment Type TR Comment Status D pcspma clarification.  
 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  
 PROPOSED ACCEPT IN PRINCIPLE.  
 The THP operation is described in 55.4.3.1, equation 55-3 and the text on lines 15-17. Additional information can be provided

Cl 55 SC 55.4.1 Figure 55-17 P174 L56 Comment # 438  
 Daines, Kevin World Wide Packets  
 Comment Type ER Comment Status X cleanup  
 Change figure by replacing ".indicate" with ".indication"  
*SuggestedRemedy*  
 As per comment  
 Proposed Response Response Status W  
 See #333

Cl 55 SC 55.4.2.2 P175 L42 Comment # 667  
 Yagil, Ariel Texas Instruments  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.4.2.3 P L Comment # 252  
 Szczepanek, Andre Texas Instruments  
 Comment Type E Comment Status D alignment  
 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 XAUI 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Add text to 55.4.2.3 saying  
 "The delay skew is removed by computing the relative received delay of the four known transmit patterns described in 55.3.16"

IEEE P802.3an Comments

Cl 55 SC 55.4.2.3 P175 L57 Comment # 668  
 Yagil, Ariel Texas Instruments

Comment Type T Comment Status D pcspma clarificator.

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\_DB 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\_DB 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.4.2.3 P176 L9 Comment # 403  
 Barrass, Hugh Cisco Systems

Comment Type T Comment Status D pair swaps

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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.4.2.4 P176 L Comment # 669  
 Yagil, Ariel Texas Instruments

Comment Type T Comment Status D info field

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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.4.2.4 P176 L31 Comment # 472  
 McClellan, Brett Solarflare

Comment Type T Comment Status D info field

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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.4.2.4 P176 L46 Comment # 468  
 McClellan, Brett Solarflare

Comment Type T Comment Status D info field

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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

IEEE P802.3an Comments

Cl 55 SC 55.4.2.4 P176 L51 Comment # 688  
 Powell, Scott Broadcom  
 Comment Type T Comment Status D powerbackoff  
 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 W  
 PROPOSED REJECT.  
 There are 8 PBO levels (0, -2, ..., -14). The 'minimum' PBO settings for data mode are (0, -2, ..., -10). Settings -12 and -14 can also be used. In addition start-up (PHY control) uses the PBO level -14.

Cl 55 SC 55.4.2.4 P181 L30 Comment # 595  
 Tellado, Jose Teranetics  
 Comment Type TR Comment Status D phy control  
 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.4.3.1 P172 L12 Comment # 14002  
 Reviriego, Pedro Agere Systems  
 Comment Type TR Comment Status D thp programmable  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE. Resubmitted from D1.4 by Editor.  
 See comment #473

Cl 55 SC 55.4.3.1 P172 L15 Comment # 14004  
 Sailesh Rao Phyten Technologies, I  
 Comment Type TR Comment Status D thp bypass D1.4  
 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

IEEE P802.3an Comments

Cl 55 SC 55.4.3.1 P172 L39 Comment # 14003  
 Vareljian, Albert KeyEye Communicatio

Comment Type T Comment Status D thp refine D1.4

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]

A(3) = [0.59375 -0.375 -0.625 -0.515625 -0.25 0.09375 0.078125 0 0 0 0 0 0 0 0]

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Resubmitted by editor from previous meeting

Cl 55 SC 55.4.3.1 P178 L Comment # 671  
 Yagil, Ariel Texas Instruments

Comment Type TR Comment Status D thp programmable

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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

See comment #473

Cl 55 SC 55.4.3.1 P178 L1 Comment # 473  
 McClellan, Brett Solarflare

Comment Type T Comment Status D thp programmable

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 W  
 PROPOSED ACCEPT.

Task force to consider joint proposal mclellan\_1\_0505.pdf and ungerboeck\_1\_0505.pdf for details.

Cl 55 SC 55.4.3.1 P178 L20 Comment # 452  
 Healey, Adam 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.

See comment #473

IEEE P802.3an Comments

Cl 55 SC 55.4.3.1 P178 L 20 Comment # 701  
 Powell, Scott Broadcom  
 Comment Type TR Comment Status D thp programmable  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See comment #473

Cl 55 SC 55.4.3.1 P178 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 Fs/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.  
 See comment #473

Cl 55 SC 55.4.3.1 P178 L 20-60 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 Fs/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.  
 See comment #473

Cl 55 SC 55.4.3.1 P178 L 24 Comment # 384  
 Sailesh Rao Phytent Technologies, I  
 Comment Type TR Comment Status D thp bypass  
 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 Om 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 P178 L58 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 P178 L59 Comment # 542  
 Zimmerman, George Solarflare Communicati

Comment Type TR Comment Status D powerbackoff

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 W

PROPOSED ACCEPT.

Cl 55 SC 55.4.3.1 P179 L1 Comment # 689  
 Powell, Scott Broadcom

Comment Type TR Comment Status D powerbackoff

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Nominal power should be defined clearly. Nominal power refers to power without any PBO and is specified in C55.5.3.4 ("with no PBO, the tx power shall be in the range 3.2dBm and 5.2dBm")

Cl 55 SC 55.4.3.1 P179 L1 Comment # 674  
 Telang, Vivek Broadcom Corp.

Comment Type TR Comment Status D powerbackoff

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 W

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment #357

IEEE P802.3an Comments

Cl 55 SC 55.4.3.1 P179 L1 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 W

PROPOSED ACCEPT IN PRINCIPLE.

Add text that states that the received signal power at MDI should be the estimate of received power from remote TX (after removing local TX power).

Cl 55 SC 55.4.3.1 P179 L13 Comment # 541  
 Zimmerman, George Solarflare Communicati

Comment Type TR Comment Status D powerbackoff

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 W

PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 55 SC 55.4.3.1 P179 L8 Comment # 694  
Powell, Scott Broadcom

Comment Type TR Comment Status D powerbackoff EMI  
(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 W  
PROPOSED ACCEPT IN PRINCIPLE.

EMI data and analysis is welcome. Editor has already included editor's note.

Cl 55 SC 55.4.3.1 P179 L9 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 REJECT. See #124

Cl 55 SC 55.4.3.1 P179 L9 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 REJECT. See #124

Cl 55 SC 55.4.4 P179 L49 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 P179 L50 Comment # 404  
Barrass, Hugh Cisco Systems

Comment Type T Comment Status D pair swaps  
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 W  
PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.4.5.1 P180 L8 Comment # 698  
Powell, Scott Broadcom

Comment Type T Comment Status D powerbackoff  
Values for power backoff are not consistent with table 55 2.

SuggestedRemedy

Reference table 55 2 rather than list values.

Proposed Response Response Status W  
PROPOSED REJECT.

See response to comment #688

IEEE P802.3an Comments

Cl 55 SC 55.4.5.1 P181 L Comment # 670  
 Yagil, Ariel Texas Instruments

Comment Type T Comment Status D phy control

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.4.5.2 P180 L45 Comment # 699  
 Powell, Scott Broadcom

Comment Type T Comment Status D powerbackoff

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 W

PROPOSED REJECT.  
 See comment #688

Cl 55 SC 55.4.5.2 P180 L46 Comment # 469  
 McClellan, Brett Solarflare

Comment Type T Comment Status D phy control

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 W

PROPOSED ACCEPT.

Cl 55 SC 55.4.6 P181 L1 Comment # 470  
 McClellan, Brett Solarflare

Comment Type T Comment Status D phy control

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 W

PROPOSED ACCEPT IN PRINCIPLE.

With 2^64 replaced with 2^6

Cl 55 SC 55.4.6.1 P181 L1 Comment # 700  
 Powell, Scott Broadcom

Comment Type TR Comment Status D phy control

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Current start-up is incomplete: powell\_1\_0505.pdf and mcclelan\_1\_0505.pdf must be considered to enhance the phy control state machine and description

IEEE P802.3an Comments

CI 55 SC 55.4.6.1 P181 L 25 Comment # 471  
 McClellan, Brett Solarflare

Comment Type T Comment Status D phy control

According to the current state machine in "PMA Training Init S", the master may end up transmitting with PBO = -6 for a long line, 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

CI 55 SC 55.4.6.1 P181 L 6 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.

See comment #473

CI 55 SC 55.4.6.1 P181 L 6 Comment # 453  
 Healey, Adam 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 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

See comment #473

IEEE P802.3an Comments

Cl 55 SC 55.4.6.1 P181 L6-60 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 enviroment 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.

See comment #473

Cl 55 SC 55.4.6.2 P182 L10 Comment # 163  
 David V James JGG

Comment Type T Comment Status D statemachine notatior

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.

Cl 55 SC 55.4.6.2 P183 L1 Comment # 577  
 Booth, Brad Intel

Comment Type E Comment Status D

Remove empty pages.

*SuggestedRemedy*

As per comment.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 55 SC 55.4.6.2 P183 L1 Comment # 335  
 Dawe, Piers Agilent

Comment Type E Comment Status D

Two blank pages

*SuggestedRemedy*

Remove them

Proposed Response Response Status W

PROPOSED ACCEPT.

This is an artifact of editing and will be cleaned up in the end.

Cl 55 SC 55.5 P175-194 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?

IEEE P802.3an Comments

Cl 55 SC 55.5.2 P185 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.5.2 P186 L 23 Comment # 489  
 Chris, Pagnanelli Solarflare Communicati

Comment Type E Comment Status D

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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.5.2 P186 L 27 Comment # 540  
 Zimmerman, George Solarflare Communicati

Comment Type T Comment Status D

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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Follow suggestion marked (preferred) in suggested remedy.

Cl 55 SC 55.5.2 P186 L 27 Comment # 490  
 Chris, Pagnanelli Solarflare Communicati

Comment Type T Comment Status D pmaelec

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 W  
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 55 SC 55.5.2 P186 L6 Comment # 464  
 McClellan, Brett Solarflare  
 Comment Type E Comment Status D pmaelec - register  
 Typo: 1.132.9.13 should be 1.132.13  
 SuggestedRemedy  
 Change text to:  
 1.132.13  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 55 SC 55.5.2 P186 L9 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 P187 L25 Comment # 491  
 Chris, Pagnanelli Solarflare Communicati  
 Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 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 within 0.5dB of each other."

Cl 55 SC 55.5.2 P187 L3 Comment # 526  
 Zimmerman, George Solarflare Communicati  
 Comment Type E Comment Status D pmaelec - register  
 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.5.2 P187 L9 Comment # 673  
 Sandeep, Gupta Teranetics  
 Comment Type T Comment Status X pmaelec twotone  
 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 W  
 Task force to discuss and decide

Cl 55 SC 55.5.2 P187 L9 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



IEEE P802.3an Comments

Cl 55 SC 55.5.2 P189 L4 Comment # 493  
 Chris, Pagnanelli Solarflare Communicati  
 Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.5.2.1 P188 L10 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 P188 L15 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.

Cl 55 SC 55.5.2.1 P188 L18 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 P188 L23 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 P188 L30 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.

IEEE P802.3an Comments

Cl 55 SC 55.5.2.1 P188 L32 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 P188 L32 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 P188 L7 Comment # 492  
 Chris, Pagnanelli Solarflare Communicati  
 Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.5.2.1 P188 L8 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 P189 L Comment # 446  
 Wael William Diab Cisco Systems  
 Comment Type ER Comment Status D  
 Please remove any color from Figure 55-22.  
 SuggestedRemedy  
 Ensure that the figure is drawn in Frame without color.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 55 SC 55.5.2.1 P189 L13 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.

IEEE P802.3an Comments

Cl 55 SC 55.5.2.1 P189 L21 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 P189 L6 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.

Cl 55 SC 55.5.2.1 P189 L6 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.  
 We use Helvetica rather than Arial

Cl 55 SC 55.5.3.1 P189 L38 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. Rational for starting 10ns after zero crossing is to make the measurement repeatable - there can be errors in measurement if you try to measure starting much closer to the transition.  
 Relevant comments: 269, 494

Cl 55 SC 55.5.3.1 P189 L39 Comment # 494  
 Chris, Pagnanelli Solarflare Communicati  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Relevant comments: 269, 494

IEEE P802.3an Comments

Cl 55 SC 55.5.3.1 P189 L40 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.

Cl 55 SC 55.5.3.2 P189 L50 Comment # 475  
 Thaler, Pat Agilent Technologies  
 Comment Type TR Comment Status D  
 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 W  
 PROPOSED ACCEPT.  
 SFDR stands for spur free dynamic range  
 Will be added to the acronyms list.

Cl 55 SC 55.5.3.2 P189 L54 Comment # 270  
 Dove, Daniel HP ProCurve Networki  
 Comment Type ER Comment Status D pmaelec sfd  
 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.

SFDR stands for spur free dynamic range  
 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:  
 $SFDR \geq (2.5 + \min(52, 58 - 20 \times \log_{10}(f/25)) (55-7)$   
 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:  
 The intermodulation products (IMD) of the transmitter, for dual tone inputs, producing output with peak to peak transmit amplitude, shall meet the requirement that:  
 $Signal\ level - IMD \geq (2.5 + \min(52, 58 - 20 \times \log_{10}(f/25)) (55-7)$   
 where f is the frequency of the IMD product in MHz in the frequency range of 1 to 400MHz and the signal level and IMD are in dB.

Cl 55 SC 55.5.3.2 P190 L Comment # 579  
 Babanezhad, Joseph Plato Networks  
 Comment Type TR Comment Status D pmaelec - linearity  
 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 W  
 Task force to discuss and decide  
 Relevant comments: 495, 579

IEEE P802.3an Comments

Cl 55 SC 55.5.3.2 P190 L8 Comment # 495  
 Chris, Pagnanelli Solarflare Communicati

Comment Type T Comment Status X pmaelec - linearity  
 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 W

Relevant comments: 495, 579

Cl 55 SC 55.5.3.3 P190 L17 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 P190 L30 Comment # 496  
 Chris, Pagnanelli Solarflare Communicati

Comment Type T Comment Status D pmaelec - jitter  
 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 W

PROPOSED ACCEPT.

Cl 55 SC 55.5.3.4 P190 L32 Comment # 497  
 Chris, Pagnanelli Solarflare Communicati

Comment Type T Comment Status D psd - lf

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 W

PROPOSED ACCEPT.

Cl 55 SC 55.5.3.4 P190 L41 Comment # 592  
 Tellado, Jose Teranetics

Comment Type TR Comment Status X psd  
 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 W

Task force to discuss and decide

Relevant comments: 272, 592, 672, 692, 696

IEEE P802.3an Comments

CI 55 SC 55.5.3.4 P190 L46 Comment # 690  
 Powell, Scott Broadcom  
 Comment Type **TR** Comment Status **D** psd - lf  
 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 **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Modify the frequency range on line 41, page 190 from:  
 $1 \leq f \leq 150$   
 To:  
 $0 < f \leq 150$   
 The presence of a transformer will ensure the requested PSD(0) requirement and does not need to be called out explicitly.

CI 55 SC 55.5.3.4 P190 L46 Comment # 696  
 Powell, Scott Broadcom  
 Comment Type **TR** Comment Status **X** psd  
 (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 **W**  
 Task force to discuss and decide  
 Relevant comments: 272, 592, 672, 692, 696

CI 55 SC 55.5.3.4 P191 L Comment # 447  
 Wael William Diab Cisco Systems  
 Comment Type **ER** Comment Status **D**  
 Please remove any color from Figure 55-23.  
 SuggestedRemedy  
 Ensure that the figure is drawn in Frame without color.  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.

CI 55 SC 55.5.3.4 P191 L Comment # 672  
 Yagil, Ariel Texas Instruments  
 Comment Type **T** Comment Status **X** psd  
 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 **W**

Relevant comments: 272, 592, 672, 692, 696

CI 55 SC 55.5.3.4 P191 L1 Comment # 692  
 Powell, Scott Broadcom  
 Comment Type **TR** Comment Status **D** psd  
 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 **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Adopt programmable precoder.  
 Relevant comments: 272, 592, 672, 692, 696

IEEE P802.3an Comments

Cl 55 SC 55.5.3.4 P191 L1 Comment # 691  
 Powell, Scott Broadcom  
 Comment Type TR Comment Status D psd ripple  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Specify group delay  
 Measured PSD shall not deviate from a 3th order polynomial fit by more than +-1dB

Cl 55 SC 55.5.3.4 P191 L20 Comment # 272  
 Dove, Daniel HP ProCurve Networki  
 Comment Type TR Comment Status D psd  
 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  
 Relevant comments: 272, 592, 672, 692, 696

Cl 55 SC 55.5.3.4 P191 L35 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.  
 We use Helvetica rather than Arial

Cl 55 SC 55.5.3.5 P191 L49 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 redundance.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 55 SC 55.5.3.5 P191 L49 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.

Cl 55 SC 55.5.4.1 P192 L1 Comment # 498  
 Chris, Pagnanelli Solarflare Communicati  
 Comment Type T Comment Status D pmaelec - ber  
 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 W  
 PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 55 SC 55.5.4.2 P192 L11 Comment # 499  
 Chris, Pagnanelli Solarflare Communicati

Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.5.4.3 P192 L14 Comment # 693  
 Powell, Scott Broadcom

Comment Type TR Comment Status D pmaelec - impulse  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

There are two tests included for external noise. Sub-clause 55.8.3.4 covers impulse noise and sub-clause 55.5.4.3 covers RF noise. Each defines a validation test and the operational requirements for the test.

Cl 55 SC 55.5.4.3 P192 L14 Comment # 500  
 Chris, Pagnanelli Solarflare Communicati

Comment Type T Comment Status D pmaelec - cmni  
 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 W  
 PROPOSED REJECT.

The signs are correct.

Relevant comments: 274, 354, 363, 421, 500, 702

See response to comment 354

Cl 55 SC 55.5.4.3 P192 L20 Comment # 363  
 Walter Hurwitz Broadcom

Comment Type TR Comment Status D pmaelec - cmni  
 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 or 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Relevant comments: 274, 354, 363, 421, 500, 702

See response to comment 354



IEEE P802.3an Comments

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., &#8804;).

SuggestedRemedy

Change: From: The transceiver shall maintain an LDPC frame error rate less than  $3.2 \times 10^{-9}$ , while being subject to a common mode voltage  $\leq 2$  V peak to peak for  $f \in (1, 80]$  MHz, and  $\leq 2 \cdot 80/f$  V peak to peak for  $f \in (80, 500)$  MHz

To: The transceiver shall maintain an LDPC frame error rate less than  $3.2 \times 10^{-9}$ , while being subject to a common mode voltage  $\leq 2$  V peak to peak for  $(f : 1 \leq f \leq 80)$  MHz, and  $\leq (2 \cdot 80/f)$  Vpp for  $(f : 80 < f \leq 500)$  MHz.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

Change text to: The transceiver shall maintain an LDPC frame error rate less than  $3.2 \times 10^{-9}$ , while being subject to a common mode voltage  $\leq 2$  V peak to peak for  $1 \leq f \leq 80$  MHz, and  $\leq (2 \cdot 80/f)$  Vpp for  $80 < f \leq 500$  MHz.

Cl 55 SC 55.5.4.3 P192 L21 Comment # 274  
 Dove, Daniel HP ProCurve Networki

Comment Type TR Comment Status D pmaelec - cmni  
 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.

Relevant comments: 274, 354, 363, 421, 500, 702

See response to comment 354

Will insert the word "sinusoidal" before "common mode voltage"

Cl 55 SC 55.5.4.3 P192 L21 Comment # 421  
 Cobb, Terry Systimax

Comment Type T Comment Status D pmaelec - cmni  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Relevant comments: 274, 354, 363, 421, 500, 702

See response to comment 354

Cl 55 SC 55.5.4.3 P192 L21 Comment # 702  
 Powell, Scott Broadcom

Comment Type TR Comment Status D pmaelec - cmni  
 Common-mode test methodology, setup, and equipment needs further definition. Referenced 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Relevant comments: 274, 354, 363, 421, 500, 702

See response to comment 354

IEEE P802.3an Comments

**Cl 55**    **SC 55.5.4.3**                      **P192**            **L 25**    **Comment #** 354  
 Ali, Abaye                                      Broadcom

**Comment Type**    **T**                      **Comment Status**    **D**                      *pmaelec - cmni*

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**    **W**  
 PROPOSED ACCEPT IN PRINCIPLE.

Relevant comments: 274, 354, 363, 421, 500, 702

See presentation and resolution tcobb; CHANGE WORDING TO " The common-mode noise can be simulated using the cable clamp test defined in 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. Operational requirements of the transceiver during the test are determined by the manufacturer. A system integrating a 10GBASE-T phy shall perform this test or the applicable local or national test requirement on the system.

**Cl 55**    **SC 55.5.4.4**                      **P192**            **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**                      **P192**            **L 2737**    **Comment #** 289  
 Reviriego, Pedro                              Agere Systems

**Comment Type**    **T**                      **Comment Status**    **D**                      *pmaelec - 1Galier*

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**    **W**  
 PROPOSED ACCEPT IN PRINCIPLE.

**Cl 55**    **SC 55.5.4.4**                      **P192**            **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 - some high pass some low pass, which add up close to a flat spectrum. The decision to use flat was approved by the group - see resolution on comment 46 in comments\_2\_0105.pdf and resolution on comment 58 in comments\_2\_0305.pdf

**Cl 55**    **SC 55.5.4.4**                      **P192**            **L 39**    **Comment #** 448  
 Wael William Diab                              Cisco Systems

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

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**    **W**  
 PROPOSED ACCEPT IN PRINCIPLE.

Text of note will be incorporated into the text.

IEEE P802.3an Comments

Cl 55 SC 55.5.4.4 P193 L3 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 P195 L1 Comment # 578  
 Booth, Brad Intel  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.6 P195-200 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 P195 L29 Comment # 340  
 Dawe, Piers Agilent  
 Comment Type E Comment Status D CaPiTaLiZaTiOn  
 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.  
 See response to comment 180.

Cl 55 SC 55.6.1.1 P195 L30 Comment # 180  
 David V James JGG  
 Comment Type E Comment Status D small values centerec  
 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.

The IEEE 10GBASE-T Task Force believes that this comment is one on editorial style, and does not affect the technical integrity of the standard. Editing does not take place during the balloting period, and will be done prior to publication by the professional editorial staff of the IEEE.

Cl 55 SC 55.6.1.2 P196 L25 Comment # 181  
 David V James JGG  
 Comment Type E Comment Status D small values centerec  
 DVJ-181  
 Small values are supposed to be centered.  
 SuggestedRemedy  
 Center the following columns:  
 Bit  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 180.

IEEE P802.3an Comments

Cl 55 SC 55.6.1.2 P196 L 5060 Comment # 291  
 Reviriego, Pedro Agere Systems  
 Comment Type E Comment Status D not done  
 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.

Cl 55 SC 55.6.2 P199 L 13 Comment # 341  
 Dawe, Piers Agilent  
 Comment Type ER Comment Status D CaPiTaLiZaTiOn  
 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.  
 Will be more consistent throughout clause.

Cl 55 SC 55.6.2 P199 L 26 Comment # 342  
 Dawe, Piers Agilent  
 Comment Type E Comment Status D  
 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.

Cl 55 SC 55.6.2 P199 L 26 Comment # 343  
 Dawe, Piers Agilent  
 Comment Type T Comment Status D not done  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

IEEE P802.3an Comments

Cl 55 SC 55.7 P L Comment # 521  
 Baumer, Howard Broadcom

Comment Type TR Comment Status D cabling

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 given 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 W

PROPOSED ACCEPT IN PRINCIPLE.

Agree in principle that the subclause 55.7.3 "Coupling parameters between link segments" alien crosstalk specifications (PSAELFEXT and PSANEXT) need to be clearer in regard to the 10GBASE-T cabling types and distances and the usage of insertion loss scaling. Recommended remedy:(1). In 55.7.3 (or where appropriate), provide a table of supported cabling types and distances with references to applicable cabling standards. This table will not include the calculated 10GBASE-T PSAELFEXT or PSANEXT which has resulted in much of the confusion between the minimum requirements for 10GBASE-T operation over the referenced cabling type and distance and the performance limits of the cabling.

Cl 55 SC 55.7 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 W

PROPOSED ACCEPT IN PRINCIPLE.

Accept ANNEX 55X proposal/outline addressing additional cabling considerations for 10GBASE-T. Assign Link Segment editor as editor for ANNEX.

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

IEEE P802.3an Comments

This will be an informative annex and can be added during working group ballot.

CI 55 SC 55.7 P201 L Comment # 704  
 Dieter Schicketanz Independent cabling co

Comment Type T Comment Status X cabling

For cabling under higher noise environment there are misleading issues. In 55.7.3.1.2 PSANEXT loss to insertion loss ratio it is explained how to perform a calculation. It is not said clearly that all related channles should then be shorter than the one used for calculation. The same happens to 55.7.3.2.2 PSAELFEXT.

SuggestedRemedy

Proposed Response Response Status O

CI 55 SC 55.7 P201 L Comment # 703  
 Dieter Schicketanz Independent cabling co

Comment Type T Comment Status X cabling

It is mentioned that the clause 55.7 does not specify cabling but the link requirements for 10GBASET-T operation (See note under Table 55.8). Cabling may be specified better. In some cases the requirement are more stringent than in ISO/IEC 11801 and may not be specified as in clause 55.7. They all refer to the low frequency range around 1-4 MHz. This frequency range is not so relevant to the system and it is proposed to correct this. There are two possibilities:

1- Add at the beginning of Clause 55.7 that all low frequency exemptions, plateaus etc. of ISO/IEC 11801 apply. E.G. add in 55.7.1 after b)  
 c) All low frequency rules of 11801 apply

- 2- Add all this foot notes in the relevant clauses( I hope I got all of them):
- 3- 55.7.2.1 Insertion loss: values less then 4 dB are for information only
- 4- 55.7.2.3 Return loss: values less then 3 dB are for information only
- 5- 55.7.2.4.1 NEXT values for information If channel values are less than 4 dB
- 6- 55.7.2.4.2 PSNEXT identical
- 7- 55.7.2 ELFEXT and PSELFEXT larger than 70 dB for information only.
- 8- 55.7.2.3 PS ANEXT and PSAELFEXT are not specified at the moment in ISO/IEC, but a plateau is being discussed and was already shown in a presentation two meetings ago (Zimmerman et AL). A starting value could be 65 dB.

SuggestedRemedy

Proposed Response Response Status O

CI 55 SC 55.7 P201 L33 Comment # 416  
 Vaden, Sterling Superior Modular Prod

Comment Type E Comment Status D cabling  
 replace is with are the subject is "requirements"

"segments are specified"

SuggestedRemedy

"segments are specified"

Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 55 SC 55.7 P201 L35 Comment # 417  
 Vaden, Sterling Superior Modular Prod

Comment Type T Comment Status X cabling

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 W

"Comments #417,#504,#377: Two requests for change:1. add a tolerance to 100 Ω and characterize it as differential: The proposed tolerance(s): (+/- 1%) or (+/-10%) or (100 ohm with a tolerance of 20 dB)2. add common mode Issue(s) for discussion: (1)Is the Link Segment test a field test or a laboratory test? If it's a field test; we need to be consistent with the source and load specifications of the field test standards. If it's a lab test; we need to be consistent with the source and load specifications of the cabling standardsfor each specified parameter. (2)Do we need to specify the source and load impedances here (line 35) if all of the specifications below thisinclude a specification for the source and load impedances?(3)Other issues:?"

Recommended remedy: delete Page 201 line 34 and 35. "Link segment testing shall be conducted using source and load impedances of 100 Ω."

This requirement is not sufficient to address link testing and given that link testing is addressed in both the cabling standards and the field test standards that we reference it is no necessary.

We already acknowledge that the nominal impedance is 100 Ω by reference to ISO/IEC 11801 Page 201, line 14 and 15.

"55.7.1 Cabling system characteristics  
 The cabling system used to support 10GBASE-T requires 4 pairs of ISO/IEC 11801 Class E or Class F balanced cabling with a nominal impedance of 100 Ω."

IEEE P802.3an Comments

CI 55 SC 55.7 P201 L60 Comment # 418  
 Vaden, Sterling Superior Modular Prod

Comment Type T Comment Status D cabling

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 W

PROPOSED ACCEPT IN PRINCIPLE.

See response to 417

CI 55 SC 55.7 P201 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 W

For discussion by the task force

CI 55 SC 55.7 P206 L Comment # 705  
 Dieter Schicketanz Independent cabling co

Comment Type E Comment Status X cabling

Under Table 55-8 in 55.7.3.1.2 there is a note saying that  
 Note: For simulating PHY performance to estimate system margin, the PS ANEXT constant average (average of the four pairs) is increased by 2.5 dB to account for an averaging of the PS ANEXT over frequency.  
 This note is not under Table 55-9. Why is there a difference?  
 Either this note results in a limit or it is an editorial note for system performance, and does not belong to the section 55.7

SuggestedRemedy

Proposed Response Response Status O

CI 55 SC 55.7 P206 L Comment # 706  
 Dieter Schicketanz Independent cabling co

Comment Type T Comment Status X cabling

In  
 55.7.3.1.2 (PSANEXT) and  
 55.7.3.2.2 (PSAELFEXT)  
 anchor values at 100 MHz for 55 m channels under higher noise environments are presented as 15 dB higher as at 100 m (PSAFEXT calculated out of PSAELFEXT, As PSAELFEXT is already a S/N).  
 A calculation is presented to scale this to other length and noise levels using the insertion loss at 250 MHz.  
 If the presented formulas are plotted it can be seen that the S/N at 250 MHz stays equal for all length but at 100 MHz it decreases with decreasing length. At 55m it is 5 dB and at 20m 10dB less then at 100m.  
 (The Graphs can be provided )

To solve this it is proposed to increase the noise level at 100 MHz and 55m only by 10dB. Then only frequencies below 100 MHz will show an increased S/N. Now at 250 MHz there will be more margin, so maybe a specialist can calculate how much additional noise can be tolerated. Probably a value of 11to12 is sufficient.  
 When the value is settled the formulas and Tables need to be adjusted editorially.

SuggestedRemedy

Proposed Response Response Status O

CI 55 SC 55.7 P208 L17 Comment # 458  
 Mei, Richard SYSTIMAX Solutions

Comment Type T Comment Status X cabling

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 W

For discussion by task force

IEEE P802.3an Comments

Cl 55 SC 55.7 Eqn: 55-29 P208 L17 Comment # 686  
 Paul Kish Belden CDT

Comment Type T Comment Status D cabling

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  $(10 + 10\log(n))$  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 W

PROPOSED ACCEPT IN PRINCIPLE.

Specify PS AELFEXT below 10 MHz consistent with measurement floor accuracies.

Cl 55 SC 55.7 Eqn: 55-30 P208 L26 Comment # 687  
 Paul Kish Belden CDT

Comment Type T Comment Status D cabling

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  $(10 + 10\log(n))$  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 W

PROPOSED ACCEPT IN PRINCIPLE.

Specify PS AELFEXT below 10 MHz consistent with measurement floor accuracies.



IEEE P802.3an Comments

**Cl 55**    **SC 55.7.1**                      **P201**            **L 21**    *Comment #* **583**

Thompson, Geoff                              Nortel

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

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*    **W**  
 PROPOSED ACCEPT IN PRINCIPLE.

The language is consistent with 1000BASE-T. "1000BASE-T uses a star topology with Category 5 balanced cabling used to connect PHY entities. The intent is to describe the cabling configuration i.e., a star topology configuration; which is different for a bus or ring.

Recommendation: Change text to read: "10GBASE-T uses a Class E or Class F balanced cabling star topology to connect point-to-point PHY entities."

**Cl 55**    **SC 55.7.2**                      **P201**            **L 28**    *Comment #* **525**

Zimmerman, George                              Solarflare Communicati

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

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*    **W**  
 PROPOSED ACCEPT IN PRINCIPLE.

See comment resolution to #251

**Cl 55**    **SC 55.7.2**                      **P201**            **L 28**    *Comment #* **420**

Kasturia, Sanjay                                      Teranetics

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

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*    **W**  
 PROPOSED ACCEPT IN PRINCIPLE.

See comment resolution to #251

**Cl 55**    **SC 55.7.2**                      **P201**            **L 28**    *Comment #* **243**

Muth, Jim    Broadcom

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

"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.

*SuggestedRemedy*  
 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*    **W**  
 PROPOSED ACCEPT IN PRINCIPLE.

See Comment resolution to #251

Replace first sentence of 55.7.2 with " A 10GBASE-T link segment consisting of up to 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."

IEEE P802.3an Comments

Cl 55 SC 55.7.2 P201 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 W

PROPOSED ACCEPT IN PRINCIPLE.

Change language consistent with 1000BASE-T-40.7.2 Link transmission parameters. "The transmission parameters contained in this subclause are specified to ensure that a Category ! link segment of up to at least 100 m will provide a reliable medium. The transmission parameters of the link segment include insertion loss, delay parameters, characteristic impedance, NEXT loss, ELFEXT loss, and returnloss."

Recommended remedy: Replace first sentence of 55.7.2 with " A 10GBASE-T link segment consisting of up to at least 55 to 100 meters of Class E or up to 100 meters of ClassF which meets the transmission parameters of this subclause will provide a reliable medium."

Cl 55 SC 55.7.2 P201 L 35 Comment # 504  
 Baumer, Howard Broadcom

Comment Type TR Comment Status D cabling

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 W

PROPOSED ACCEPT IN PRINCIPLE.

See response to 417

Cl 55 SC 55.7.2 P201 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 W

PROPOSED ACCEPT IN PRINCIPLE.

See response to 417

Cl 55 SC 55.7.2 P201 L 37 Comment # 584  
 Thompson, Geoff Nortel

Comment Type TR Comment Status D cabling

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Change text to: 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 as specified in ISO/IEC TR-24750 and TIA/EIA TSB-155.

IEEE P802.3an Comments

Cl 55 SC 55.7.2 P201 L37 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 W

PROPOSED REJECT.

The 10GBASE-T task group has validated the implementation with "realistic" measurements and models for both Class E and Class F. In the formulation of other Ethernet standards we have referenced standards in development. This Comment does not include suggested remedy.

Cl 55 SC 55.7.2.1 P201 L58 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 W

PROPOSED ACCEPT.

Cl 55 SC 55.7.2.1 P201 L60 Comment # 505  
 Baumer, Howard Broadcom

Comment Type TR Comment Status D cabling

Frequency domain specifications are defined with respect to a reference impedance.

SuggestedRemedy

Replace "terminated in" with "referenced to".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See response to 417

Cl 55 SC 55.7.2.1 P202 L1 Comment # 585  
 Thompson, Geoff Nortel

Comment Type E Comment Status X cabling

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 P202 L7 Comment # 506  
 Baumer, Howard Broadcom

Comment Type T Comment Status D cabling

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 W

PROPOSED REJECT.

The characteristic impedance of the cabling is not a requirement (link segment return loss is specified)

IEEE P802.3an Comments

CI 55 SC 55.7.2.3 P202 L12 Comment # 507  
 Baumer, Howard Broadcom  
 Comment Type E Comment Status X cabling  
 The equation reference could be confusing as no specifically referenced equation number is used  
 SuggestedRemedy  
 replace ".. the following equation" with ".. equation 55.11" with the appropriate link to equation 55.11  
 Proposed Response Response Status O

CI 55 SC 55.7.2.4.1 P202 L44 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 W  
 PROPOSED ACCEPT.  
 Add Text: Calculations that result in NEXT loss values greater than 65 dB shall revert to a requirement of 65 dB minimum.

CI 55 SC 55.7.2.4.1 P202 L47 Comment # 508  
 Baumer, Howard Broadcom  
 Comment Type ER Comment Status D cabling  
 The wording from lines 47-56 does'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 W  
 PROPOSED REJECT.  
 Consistent with 1000BASE-T equation format

CI 55 SC 55.7.2.4.2 P203 L13 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.

CI 55 SC 55.7.2.4.2 P203 L13 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 W  
 PROPOSED ACCEPT.  
 Add Text: Calculations that result in NEXT loss values greater than 62 dB shall revert to a requirement of 62 dB minimum.

CI 55 SC 55.7.2.4.2 P203 L16 Comment # 509  
 Baumer, Howard Broadcom  
 Comment Type ER Comment Status D cabling  
 The wording from lines 16-22 does'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 W  
 PROPOSED REJECT.  
 1000BASE-T equation format

IEEE P802.3an Comments

Cl 55 SC 55.7.2.4.2 P203 L2 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 REJECT.  
 For IEEE editorial staff. Capitalization consistent with1000BASE-T

Cl 55 SC 55.7.2.4.3 P203 L24 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 REJECT.  
 For IEEE editorial staff. Capitalization consistent with1000BASE-T

Cl 55 SC 55.7.2.4.3 P203 L27 Comment # 510  
 Baumer, Howard Broadcom  
 Comment Type T Comment Status D cabling  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.7.2.4.3 P203 L44 Comment # 511  
 Baumer, Howard Broadcom  
 Comment Type T Comment Status D cabling  
 "n" is not specified and is therefore open ended, specify what "n" should be.  
 SuggestedRemedy  
 Specify n=3  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.7.2.4.4 P203 L42 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 REJECT.  
 For IEEE editorial staff. Capitalization consistent with1000BASE-T

Cl 55 SC 55.7.2.4.4 P203 L45 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 REJECT.  
 For IEEE editorial staff. Capitalization consistent with1000BASE-T

IEEE P802.3an Comments

Cl 55 SC 55.7.2.4.5 P204 L38 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 (MDELFE~~XT~~) loss  
==>  
Multiple disturber equal level far-end crosstalk (MDELFE~~XT~~) loss  
Proposed Response Response Status W  
PROPOSED REJECT.  
For IEEE editorial staff. Capitalization consistent with1000BASE-T

Cl 55 SC 55.7.2.4.6 P205 L16 Comment # 512  
Baumer, Howard Broadcom  
Comment Type T Comment Status D cabling  
"n" is not specified and is therefore open ended, specify what "n" should be.  
SuggestedRemedy  
Specify n=3  
Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.

Cl 55 SC 55.7.2.4.6 P205 L2 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 REJECT.  
For IEEE editorial staff. Capitalization consistent with1000BASE-T

Cl 55 SC 55.7.2.5 P205 L20 Comment # 513  
Baumer, Howard Broadcom  
Comment Type T Comment Status D cabling  
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 W  
PROPOSED REJECT.  
Not necessary to specify delay to 1 MHz --- 2 MHz minimum consistent with 1000BASE-T

Cl 55 SC 55.7.2.6 P205 L26 Comment # 514  
Baumer, Howard Broadcom  
Comment Type T Comment Status D cabling  
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 W  
PROPOSED REJECT.  
Not necessary to specify delay to 1 MHz --- 2 MHz minimum consistent with 1000BASE-T

IEEE P802.3an Comments

Cl 55 SC 55.7.3 P205 L31 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 W

PROPOSED ACCEPT IN PRINCIPLE.

The subclause 55.7.3 "Coupling parameters between link segments" needs to be clearer in regard to the 10GBASE-T cabling types and distances and the usage of insertion loss scaling Recommended remedy: (1). In 55.7.3, provide a table of supported cabling types and distances with references to applicable cabling standards. Note: For Augmented Category 6 and Class F the cabling is specified "by design" to support 10GBASE-T operation. For Category 6 UTP, it's expected that 10GBASE-T will operate on a "worse case" 6-around-1 cabling configuration up to at least 55 meters. For lengths >55m or where the IL is > 19.8 dB @250 MHz - see the proposed ANNEX 55X (reference: TIA/EIA/ -TSB-155). For Class E UTP cabling longer than 55 meters mitigation considerations may apply. In all cases the alien crosstalk to insertion loss specifications of 55.7.3.1.2. and 55.7.3.2.2. must be met.

Cl 55 SC 55.7.3 P205 L31 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? (symantic) 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 P205 L34 Comment # 586  
 Thompson, Geoff Nortel

Comment Type E Comment Status D cabling

The text: "...crosstalk noise.To ensure..." is missing a space.

SuggestedRemedy

Change to: "...crosstalk noise. To ensure..."

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 55 SC 55.7.3 P205 L35 Comment # 515  
 Baumer, Howard Broadcom

Comment Type E Comment Status X cabling

"MDANEXT" is seperated across lines

SuggestedRemedy

Fix it such that "MDANEXT" is kept together

Proposed Response Response Status O

IEEE P802.3an Comments

Cl 55 SC 55.7.3.1 P205 L37 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 REJECT.  
 For IEEE editorial staff. Capitalization consistent with1000BASE-T

Cl 55 SC 55.7.3.1 P205 L40 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 REJECT.  
 For IEEE editorial staff. Capitalization consistent with1000BASE-T

Cl 55 SC 55.7.3.1 P206 L15 Comment # 697  
 Powell, Scott Broadcom  
 Comment Type TR Comment Status D cabling  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Will use the equation from ISO/IEC 11801-(IEC 61156-1)

Cl 55 SC 55.7.3.1.1 P205 L14 Comment # 246  
 Koeman, Henricus 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Rather than truncate specification at 10MHz allowing unspecified performance, specify PS ANEXT below 10 MHz consistent with measurement floor accuracies.

Cl 55 SC 55.7.3.1.1 P205 L45 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 REJECT.  
 For IEEE editorial staff. Capitalization consistent with1000BASE-T



IEEE P802.3an Comments

Cl 55 SC 55.7.3.1.1 P205 L49 Comment # 516  
 Baumer, Howard Broadcom

Comment Type ER Comment Status D cabling

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 W

PROPOSED ACCEPT IN PRINCIPLE.

The same structure was applied to the sections mentioned whenever possible. Alien Crosstalk includes the insertion loss scaling and insertion loss ratio requirements.

Cl 55 SC 55.7.3.1.1 P206 L19 Comment # 518  
 Baumer, Howard Broadcom

Comment Type E Comment Status X cabling

"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 P206 L27 Comment # 247  
 Koeman, Henricus 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 W

PROPOSED ACCEPT IN PRINCIPLE.

Rather than truncate specification at 10MHz, allowing unspecified performance, specify PS ANEXT\_avg below 10 MHz consistent with measurement floor accuracies.

Cl 55 SC 55.7.3.1.1 P206 L32 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 W

Cl 55 SC 55.7.3.1.1 P206 L8 Comment # 517  
 Baumer, Howard Broadcom

Comment Type TR Comment Status D cabling

"n" is not specified and is therefore open ended, specify what "n" should be.

SuggestedRemedy

Specify "n".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Will clarify: n is the number of pair-to-pair combinations between adjacent link segments (see ANNEX 55X)

Cl 55 SC 55.7.3.1.2 P207 L14 Comment # 588  
 Thompson, Geoff Nortel

Comment Type E Comment Status D cabling

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 W

PROPOSED ACCEPT.

IEEE P802.3an Comments

Cl 55 SC 55.7.3.1.2 P207 L15 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 REJECT.

For IEEE editorial staff. Capitalization consistent with1000BASE-T

Cl 55 SC 55.7.3.1.2 P207 L18 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 REJECT.

For IEEE editorial staff. Capitalization consistent with1000BASE-T

Cl 55 SC 55.7.3.1.2 P207 L21 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.

See response to comment 180

Cl 55 SC 55.7.3.1.2 P207 L22 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

Cl 55 SC 55.7.3.1.2 Table 55-8 P207 L29 Comment # 587  
 Thompson, Geoff Nortel  
 Comment Type TR Comment Status D cabling  
 Invalid references  
 same basic comment as my #2  
 SuggestedRemedy  
 See my #2  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

Will use applicable cabling standards references

Cl 55 SC 55.7.3.2 P207 L43 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 REJECT.

For IEEE editorial staff. Capitalization consistent with1000BASE-T

IEEE P802.3an Comments

Cl 55 SC 55.7.3.2.1 P207 L51 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 REJECT.  
 For IEEE editorial staff. Capitalization consistent with1000BASE-T

Cl 55 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Rather than truncate specification at 10MHz allowing unspecified performance, specify PS AELFEXT below 10 MHz consistent with measurement floor accuracies.

Cl 55 SC 55.7.3.2.1 P208 L26 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Rather than truncate specification at 10MHz allowing unspecified performance, specify PS AELFEXT below 10 MHz consistent with measurement floor accuracies.

Cl 55 SC 55.7.3.2.1 P208 L9 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change to ELi(f)

Cl 55 SC 55.7.3.2.2 P209 L10 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 P209 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 P209 L 10 Comment # 528  
 Zimmerman, George Solarflare Communicati  
 Comment Type E Comment Status D cabling  
 Typo: AELFEXT\_consants  
 SuggestedRemedy  
 change to AELFEXT\_constants  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 55 SC 55.7.3.2.2 P209 L 10 Comment # 589  
 Thompson, Geoff Nortel  
 Comment Type E Comment Status D cabling  
 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.7.3.2.2 P209 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 REJECT.

For IEEE editorial staff. Capitalization consistent with1000BASE-T

Cl 55 SC 55.7.3.2.2 P209 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 REJECT.

For IEEE editorial staff. Capitalization consistent with1000BASE-T

Cl 55 SC 55.7.3.2.2 P209 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.  
 See response to comment 180

IEEE P802.3an Comments

Cl 55 SC 55.7.4 P209 L41 Comment # 520  
 Baumer, Howard Broadcom  
 Comment Type ER Comment Status D cabling  
 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 W  
 PROPOSED REJECT.  
 The subclause characterizes the total noise environment. Follows subclause headings structure from 1000BASE-T.

Cl 55 SC 55.7.4 P209 L41 Comment # 419  
 Kasturia, Sanjay Teranetics  
 Comment Type E Comment Status D cabling  
 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 W  
 PROPOSED REJECT.  
 The 55.7.4 subclause characterizes the total noise environment including 55.7.3. It should follow 55.7.3 and provide total noise budget.

Cl 55 SC 55.7.4 P209 L53 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 REJECT.  
 For IEEE editorial staff. Capitalization consistent with1000BASE-T

Cl 55 SC 55.7.4 P210 L5 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 REJECT.  
 For IEEE editorial staff. Capitalization consistent with1000BASE-T

Cl 55 SC 55.7.4 P210 L8 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 REJECT.  
 For IEEE editorial staff. Capitalization consistent with1000BASE-T

IEEE P802.3an Comments

Cl 55 SC 55.8.1 P211 L39 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.  
 See response to comment 180

Cl 55 SC 55.8.1 P211 L9 Comment # 532  
 Zimmerman, George Solarflare Communicati  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.8.2 P211 L57 Comment # 590  
 Thompson, Geoff Nortel  
 Comment Type TR Comment Status D  
 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? Ifso 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Remove clause. The clause does not add additional requirements to the 10GBASE-T PHY other than marking of an X for having the automatic crossover, which will be mandatory on all 10GBASE-T PHY's, so this will not be needed. For multiple speed implementations the requirements for those PHY's will be followed.

Cl 55 SC 55.8.2 P212 L16 Comment # 450  
 Wael William Diab Cisco Systems  
 Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Remove note

Cl 55 SC 55.8.2 P212 L6 Comment # 523  
 Zimmerman, George Solarflare Communicati  
 Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Remove note

Cl 55 SC 55.8.3 P212 L23 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.

IEEE P802.3an Comments

Cl 55 SC 55.8.3 P212 L 23 Comment # 533  
 Zimmerman, George Solarflare Communicati  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT.

Cl 55 SC 55.8.3.1 P204 L 38 Comment # 14005  
 Powell, Scott Broadcom  
 Comment Type T Comment Status D mdi - rl  
 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.  
 Related comments : 695, 14005  
 Currently the draft specifies parameters to 500MHz - see editor's note on page 215  
 Relax the return loss specification above 400MHz; make no substantive change to the requirements below 400MHz as below:  
 $loss = 6 - 30\log(f/400) \text{ dB for } 400 < f < 500$   
 This comment was on D1.4 and was resubmitted by the editor.

Cl 55 SC 55.8.3.1 P212 L 38 Comment # 695  
 Powell, Scott Broadcom  
 Comment Type TR Comment Status D mdi - rl  
 (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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Related comments : 695, 14005  
 See response to comment 14005

Cl 55 SC 55.8.3.2 P212 L 44 Comment # 456  
 Cohen, Larry Independent  
 Comment Type T Comment Status D mdi - impedance balance  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

Neither resistors or baluns are sufficient to make accurate measurements to higher frequencies. Change measurement method to a more appropriate test method. Define a test using a four port Network Analyzer capable of measuring mixed mode S-parameters

Cl 55 SC 55.8.3.2 P212 L 48 Comment # 422  
 Cobb, Terry Systemax  
 Comment Type T Comment Status D  
 The balance will not meet the latest magnetics measurements that are posted on our web.  
 SuggestedRemedy  
 See contribution from tcobb  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change to a recommendation.

Change equation to:  
 $50 \quad 30 \text{ MHz} \leq f < 100 \text{ MHz}$   
 $50 - 32 \times ((f-100)/1000) \quad 100 \text{ MHz} \leq f \leq 500 \text{ MHz}$   
 This as per the equation on slide 10 of cobb\_1\_0505.pdf with upper freq reduced from 1000MHz to 500MHz.

IEEE P802.3an Comments

Cl 55 SC 55.8.3.2 P213 L10 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.  
 Remove figure

Cl 55 SC 55.8.3.2 P213 L21 Comment # 451  
 Wael William Diab Cisco Systems  
 Comment Type E Comment Status D  
 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 carried forward in D2.1  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Remove note

Cl 55 SC 55.8.3.3 P213 L27 Comment # 457  
 Cohen, Larry Independent  
 Comment Type T Comment Status D mdi - common mode output  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.

See response to comment 279

Related comments: 279, 355, 423, 457, 501

Cl 55 SC 55.8.3.3 P213 L27 Comment # 501  
 Chris, Pagnanelli Solarflare Communicati  
 Comment Type T Comment Status D mdi - common mode output  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 279

Related comments: 279, 355, 423, 457, 501



IEEE P802.3an Comments

Cl 55 SC 55.8.3.3 P213 L28 Comment # 423  
 Cobb, Terry Systimax  
 Comment Type T Comment Status D mdi - common mode output  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See response to comment 279  
 Related comments: 279, 355, 423, 457, 501

Cl 55 SC 55.8.3.3 P213 L28 Comment # 355  
 Siavash Fallahi Broadcom  
 Comment Type TR Comment Status D mdi - common mode output  
 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 W  
 PROPOSED REJECT.  
 It is beyond the scope of the standard to define a system level EMI emissions test, this has  
 been done in other standards bodies. Sub-clause 55.9.5 already requires a system integratin  
 a 10GBASE-T phy to meet those requirements. See comment 279.  
 See presentation by tcobb on common-mode voltage.  
 Related comments: 279, 355, 423, 457, 501

Cl 55 SC 55.8.3.3 P213 L29 Comment # 279  
 Dove, Daniel HP ProCurve Networki  
 Comment Type TR Comment Status D mdi - common mode output  
 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 IN PRINCIPLE.  
 See tcobb for voltage level. Since there has not been a demonstrated need for this  
 requirement change from "shall" to a "should" and clarify that the voltage is related to the  
 common mode that is created by the balance of clause 55.8.3.2. Change measurement  
 method to a 4 port analyzer  
 Related comments: 279, 355, 423, 457, 501

Cl 55 SC 55.8.3.3 P213 L34 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.  
 Remove figure

IEEE P802.3an Comments

Cl 55 SC 55.8.3.4 P214 L19 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.  
 Remove figure

Cl 55 SC 55.8.3.4 P214 L9 Comment # 534  
 Zimmerman, George Solarflare Communicati  
 Comment Type T Comment Status D  
 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 W  
 PROPOSED ACCEPT.  
 Reword as proposed and add reference to POE clause.  
 Related comments: 292, 534

Cl 55 SC 55.8.3.4 P214 L9 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.  
 See response to 534  
 Related comments: 292, 534

Cl 55 SC 55.9 P215 L4 Comment # 524  
 Zimmerman, George Solarflare Communicati  
 Comment Type E Comment Status D  
 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 W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Delete

Cl 55 SC 55.9.2 P215 L5 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 IN PRINCIPLE.  
 Delete note.

IEEE P802.3an Comments

Cl 55 SC 55.9.3 P215 L10 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 IN PRINCIPLE.

Change "It is a mandatory requirement" to "It is recommended"

Cl 55 SC All PAll LAll Comment # 383  
 Sailesh Rao Phytent 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 (altmann\_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.

IEEE P802.3an Comments

**Cl 55A** SC **P237** L19 **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 **P237** L8 **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](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 **P237** L8 **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 **55A** **P237** L19 **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 **P1** L24 **Comment #** 565  
 Booth, Brad Intel

**Comment Type** E **Comment Status** D  
 This isn't a Task Force ballot.

**SuggestedRemedy**  
 Change to be Working Group ballot.

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

**Cl 99** SC **P1** L24 **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.

IEEE P802.3an Comments

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Cl 99 SC P2 L Comment # 607

Grow, Robert Intel

Comment Type ER Comment Status D

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 W

PROPOSED ACCEPT IN PRINCIPLE.

Brad - can you please provide this?

---

Cl 99 SC P2 L1 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.

The bookmarks should suffice but we can add a table of contents.

---

Cl 99 SC P3 L1 Comment # 608

Grow, Robert Intel

Comment Type ER Comment Status D

These are not revisions, they are changes.

*SuggestedRemedy*

Retitle as changes.

Proposed Response Response Status W

PROPOSED ACCEPT.