Cl **00**   *SC* **All**   *P* **All**   *L* **All**   # **1**

Thomas Dineen   Dineen Consulting

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

Please update the draft format to conform to the requirements of the IEEE Standards Style Manual 2005 Edition.

Supporting material cut from the "IEEE Standards Style Manual" 2005 Edition located at http://standards.ieee.org/guides/style/2005Style.pdf

4.1 Editorial requirements for submission
The sponsor of an IEEE Standards project shall be responsible for providing the IEEE-SA Standards Board with a complete, technically accurate draft of the proposed standard that meets the requirements of this manual for content, style, and legibility. Any draft standard that initiates its ballot on or after 1 January 2005 shall use the IEEE templates available on the web (see 4.2.1). A cover letter or email also shall be submitted that states the software application/program (including version number) used to create the document, order of files on the disk, etc. (See 4.3 for further information on submittal to the IEEE-SA Standards Board.) If applicable, written permission for any copyrighted material (text, figures, or tables obtained from an outside source) used within a project shall be submitted to the IEEE-SA Standards Board as well (see 5.1). During the ballot invitation period prior to balloting, the sponsor is required to submit the draft and any relevant copyright permission letters to an IEEE Standards Project Editor for mandatory editorial coordination, which may include a legal review. Project Editors are also available for questions that arise as the draft is prepared.

4.2.1 Draft development
All IEEE drafts shall be developed using an IEEE-approved document template available from the IEEE Standards World Wide Web site <http://standards.ieee.org/resources/development/writing/templates.html>. The drafts should contain a front matter and main text, and follow the style outlined in this manual. The draft should be numbered consecutively, starting with the title page i of the front matter and page 1 of the main text. The front matter shall contain the title of the standard (see 9.1), draft copyright statements (see 4.2.2), an abstract and keywords (see 9.2), and an introduction that includes a list of the working group members and a statement describing the type of ballot conducted (see 9.3). Working groups are encouraged to consult with an IEEE Standards Project Editor if there are any questions concerning electronic tools used to develop IEEE drafts. (See Annex B for an example draft standard.)

Suggested Remedy

1) Identify a Style Guide and Framemaker document template, probably the current IEEE style guide. Use the selected Style Guide for this and future IEEE 802.3 projects. I am not so concerned or dogmatic about which style guide is chosen. Probably for reasons of good IEEE citizenship and cooperation it would be wise to select the current version of the IEEE Style guide and IEEE Framemaker templates.

2) Consistently apply the Style Guide and Framemaker template requirements to all clauses, pages, and lines of the draft.

3) For any naming, logical, graphical, table, state machine, or nomenclature conventions, including PICS tables not covered by the selected style guide develop, document,

standardize (within 802.3) and publish a set of IEEE 802.3 conventions.

4) Consistently apply the IEEE 802.3 Conventions requirements to all clauses, pages, and lines of the draft.

Response   *Response Status* **W**

PROPOSED REJECT.

The commenter has not recommended any specific document changes either required or desired per the cited policy and documents.

Also:
1. The draft has been developed consistent with the cited requirements. It uses IEEE style templates and the source document is Adobe FrameMaker as required for submission to the Standards Board.
2. The cited requirements are based upon submission of the draft to the IEEE-SA. This draft is not being submitted to the IEEE-SA at this point in time.
3. Generation of a set of IEEE 802.3 conventions is beyond the approved scope of this project.

Cl **55A**   *SC* **55A**   *P* **227**   *L* **7**   # **2**

Runsheng He   Marvell

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

Specify how the parity check matrix H is constructed from RS code

Suggested Remedy

1. Specify the RS code generator polynomial
2. Specify the 6 cosets used for constructing parity check matrix H

Response   *Response Status* **O**

Cl **55**   *SC* **55.7.3.2.2**   *P* **200**   *L* **29**   # **3**

Koeman, Henriecus   Fluke Networks

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

Equation (55-28) contains insertion loss parameters as well as the length parameter. The insertion loss is related to length. Insertion loss can accurately be measured, but length can not electronically as a result of uncertainties in the Nominal Velocity of Propagation. A conversion for length to insertion loss is proposed.

Suggested Remedy

Change the last portion of equation (55-28) from:
"-10(log10(L/100))"
to
"-10(log10(0.0277*IL(250MHz)))"

Remove lines 40 and 41.

Response   *Response Status* **O**

Cl **55**   *SC* **Table 55-9**   *P* **200**   *L* **57**   # **4**

Koeman, Henriecus   Fluke Networks

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

The entries for the PS AELFEXT constant limit value at 100 MHz are not exact per the outcome of equation (55-28), which is 36.2 dB. This is noted as footnotes c and d on the top of page 201. The rounding off as stated is not really necessary, and the result should be relaxed than for regular Class E cabling (which is 37 dB).

Suggested Remedy

Enter 36.2 dB in the cells for Class F and Augmented Category 6, PS AELFEXT constant limit instead of 37 dB, and adjust the column for average of the 4 wire pairs accordingly to 41 dB.

Response   *Response Status*   **O**

Cl **45**   *SC* **45.2.7.8**   *P* **109**   *L* **32**   # **5**

Thaler, Pat   Agilent Technologies

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

These multi-register autonegotiation values need to be treated on reads like the multiple register counters.

Suggested Remedy

A read to the first register latches the values of the other two registers so that a consistant register set is retrieved.

For those that are writeable, a write to the second and third registers does not set mr_next_page_loaded. Only a write to the first register (e.g. 7.22) sets mr_next_page_loaded. Therefore, when updating the three register set, the second and third register values should be written followed by the first register value. It may seem more natural to do this for the third register, but since there are times when only the first register needs to be written (for example to set the ACK bit and toggle bit), having this register execute the change avoids extra writes to the third register.

Response   *Response Status*   **O**

Cl **45**   *SC* **45.2.7.1**   *P* **106**   *L* **28**   # **6**

Thaler, Pat   Agilent Technologies

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

This register should have a bit to control/report use of extended next pages.

Suggested Remedy

Add the bit.

Response   *Response Status*   **O**

Cl **45**   *SC* **45.2.7.2**   *P* **106**   *L* **36**   # **7**

Thaler, Pat   Agilent Technologies

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

This register should have a bit to indicate extended next page ability unless support for this register set requires extended next page ability. If the latter, it needs to be explicitly stated.

Suggested Remedy

See comment.

Response   *Response Status*   **O**

Cl **28**   *SC* **28.2.3.4.2**   *P* **14**   *L* **12**   # **8**

Thaler, Pat   Agilent Technologies

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

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.

Suggested Remedy

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

Response   *Response Status*   **O**

Cl **28B**   *SC* **28B.2**   *P* **48**   *L* **33**   # **9**

Thaler, Pat   Agilent Technologies

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

The old label for A7 has been deleted but the new value seems to be missing.

Suggested Remedy

A7 should be Extended next page support

Response   *Response Status*   **O**

Cl **28B**　　*SC* **28B.3**　　　　　　　*P* **45**　　*L* **54**　　# **10**

Thaler, Pat　　　　　　　　　　　Agilent Technologies

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

The priority resolution text for Extended Next Page from my previous comment is misplaced. It is the second paragraph in 28.2.1.2.3 but it should appear here with the other priority resolution text (same as the pause text).

Suggested Remedy

Move the text to this section.

Response　　　　　　*Response Status*　**O**

Cl **55**　　*SC*　　　　　　　　*P* **193**　　*L* **33**　　# **11**

Eisler, George　　　　　　　　　Solarflare

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

Add the following to the first paragraph:

The transmission parameters are further summarised in Table 55-8.

Suggested Remedy

Response　　　　　　*Response Status*　**O**

Cl **55**　　*SC* **55.7.3.2.2**　　　　*P* **200**　　*L* **17**　　# **12**

DiMinico, Chris　　　　　　　　　MC Communications

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

Modify equation PSAELFEXT_constant (line 29-30) to better fit the Augmented 6, Class F, Category 6 "55 meters", and the Class E 100 meters PSAELFEXT_constant values while maintaining (as close as possible) the Augmented 6, Class F, and Category 6 "55 meters" values allowing the Class E 100 meters to improve (from 37 dB to 37.9 dB).

Suggested Remedy

1. PSAELFEXT_constant=37.9-(10GBTIL(250MHz)-IL(250MHz)/2.29 -10*log10(L/100)

2. Remove text regarding rounding in note c (line 6) and note d (line 8).

3. Change : Table 55-9 line 53 column 'PSAELFEXT_constant' from 37 to 37.9 and 55-9 line 55 column 'PSAELFEXT_constant' from 36.6 to 36.7.

Response　　　　　　*Response Status*　**O**

Cl **55**　　*SC* **55.7.3.1.2**　　　　*P* **199**　　*L* **7**　　# **13**

Alexander, Jan　　　　　　　　　Nexans

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

In Table 55-8, the PS ANEXT_constant is not a "limit", specifically for the case of "category 6" PS ANEXT is not specified.

Suggested Remedy

Change "PS ANEXT_constant limit (dB)" to "PS ANEXT_constant (dB)" in Table 55-8.

Response　　　　　　*Response Status*　**O**

Cl **55**　　*SC* **55.7.3.1.2**　　　　*P* **199**　　*L* **19**　　# **14**

Alexander, Jan　　　　　　　　　Nexans

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

In Table 55-8 note 'b', TIA/EIA TSB-155 D1.3 is not a specification and "specified" is incorrect.

Suggested Remedy

Change "specified" to "given".

Response　　　　　　*Response Status*　**O**

Cl **55**　　*SC* **55.7.3.2.2**　　　　*P* **200**　　*L* **50**　　# **15**

Alexander, Jan　　　　　　　　　Nexans

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

In Table 55-9, the PS AELFEXT _constant is not a "limit", specifically for the case of "category 6" PS AELFEXT is not specified.

Suggested Remedy

Change "PS AELFEXT _constant limit (dB)" to "PS AELFEXT _constant (dB)" in Table 55-9.

Response　　　　　　*Response Status*　**O**

Cl **55**　　*SC* **55.7.3.2.2**　　　　*P* **201**　　*L* **4**　　# **16**

Alexander, Jan　　　　　　　　　Nexans

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

In Table 55-9 note 'b', TIA/EIA TSB-155 D1.3 is not a specification and "specified" is incorrect.

Suggested Remedy

Change "specified" to "given".

Response　　　　　　*Response Status*　**O**

Cl **55**   *SC* **55.4.2.4**   *P* **170**   *L* **10**   # **17**

Seki, Katsutoshi   NEC Electronics

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

CRC16 dosen't cover Oct13 and Oct14

Suggested Remedy

Oct13 and Oct14 should be covered by CRC16

Response   *Response Status* **O**

Cl **55**   *SC* **55.4.2.4**   *P* **170**   *L* **10**   # **18**

Seki, Katsutoshi   NEC Electronics

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

Transmit ordering of the information field should be specified.

Suggested Remedy

Oct1 is sent first in time.
LSB is sent first in time.
Namely, Oct1<0> should be the first bit transmitted.

Response   *Response Status* **O**

Cl **55**   *SC* **4.3.1**   *P* **172**   *L* **12**   # **19**

Reviriego, Pedro   Agere Systems

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

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 perfomance 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.

Suggested Remedy

Adopt a programmable solution as per presentation Kota_1_0305.pdf

Response   *Response Status* **O**

Cl **55**   *SC* **4.6.1**   *P* **175**   *L* **4**   # **20**

Reviriego, Pedro   Agere Systems

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

The PHY control state diagram in the Draft is different from the one agreed by the working group (mcclellan_2_0205.pdf)
We also think there is a bug in mcclellan_2_0205.pdf: In state PMA Training Update S, instead of assigning THPinit we should assign THP IFm

Suggested Remedy

Editor to fix the differences as outlined above

Response   *Response Status* **O**

Cl **55**   *SC* **55.7.3**   *P* **197**   *L* **14**   # **21**

Cobb, Terry   Systimax

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

To ensure the PHY will meet it's BER the alien crosstalk for a channel must be specified as a maximum requirement.

Suggested Remedy

change sentence to read:

"To ensure the reliable operation the alien crosstalk shall not exceed the specifications of 50.7.3.1.2 and 55.7.3.2.2."

Response   *Response Status* **O**

Cl **55**   *SC* **55.1.3.2**   *P* **135**   *L* **52**   # **22**

Powell, Scott   Broadcom

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

Verbiage inconsistent with stated objective.

Suggested Remedy

Change: "The PMA provides full duplex communications at 800Msymbols/s over four pairs of balanced cabling up to 100m in length."

To: "The PMA provides full duplex communications at 800Msymbols/s over four pairs of balanced cabling as specified in 55.7."

Response   *Response Status* **O**

TYPE: TR/technical required T/technical E/editorial   COMMENT STATUS: D/dispatched A/accepted R/rejected   SORT ORDER: Comment ID   Page 4 of 18

RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn

Cl **55**   *SC* **55.4.2.4**   *P* **170**   *L* **47**   # **23**

Powell, Scott   Broadcom

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

Power backoff levels chosen without consideration of susceptibility to external interference.

Suggested Remedy

See comment on table 55-2. Same resolution should apply.

Response   *Response Status* **O**

Cl **55**   *SC* **55.4.3.1**   *P* **173**   *L* **12**   # **24**

Powell, Scott   Broadcom

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

Power backoff schedule designed without consideration of susceptibility to external interference.

Suggested Remedy

Re-design schedule using analysis that includes additional noise from 55.5.8.3 (Common Mode Noise Rejection) or other susceptibility tests specified in the standard. See comment on section 55.5.8.3

Response   *Response Status* **O**

Cl **55**   *SC* **55.5.8.3**   *P* **184**   *L* **21**   # **25**

Powell, Scott   Broadcom

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

Test method is not specified. Data has not been presented which supports that the indicated levels correspond to internationally recognized susceptibility standards (or the cable clamp test specified for 1000BT in 44.6.1.3.3).

Suggested Remedy

Reference EN61000-4-6 for conducted immunity test method up to 80MHz. Reference EN61000-4-3 for radiated immunity test method for frequencies greater than 80MHz. Reference CISPR 24 (and/or EN55024) for minimum required immunity levels.

Change second paragraph to read:

The transceiver shall maintain an LDPC frame error rate less than 3.2×10^{-9} while being subject to noise immunity testing. Noise immunity test setup and method is described in EN61000-4-3 and EN61000-4-6 for conducted and radiated susceptibility respectively. Testing shall be performed to at least the minimum legal levels specified in CISPR 24.

Response   *Response Status* **O**

Cl **55**   *SC* **55.7**   *P* **193**   *L* **15**   # **26**

Powell, Scott   Broadcom

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

No need to explicitly specify Class E or Class F in introductory paragraph (per our objectives).

Suggested Remedy

Change first sentence to read:
10GBASE-T is designed to operate over ISO/IEC 11801 4-pair balanced cabling that meets the requirements specified in this subclause.

Response   *Response Status* **O**

Cl **55**   *SC* **55.7.1**   *P* **193**   *L* **15**   # **27**

Powell, Scott   Broadcom

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

This subsection seems redundant with the first paragraph with the exception of specifying a "star topology".

Suggested Remedy

Change first sentence in 55.7 intro paragraph to read:
10GBASE-T is designed to operate over a star topology using 4-pair …"

Eliminate 55.7.1.

Response   *Response Status* **O**

Cl **55**   *SC* **55.7.2**   *P* **193**   *L* **29**   # **28**

Powell, Scott   Broadcom

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

Verbiage not consistent with objectives.

Suggested Remedy

Change first sentence to read:

The transmission parameters contained in this subclause are specified to ensure that a 10GBASE-T link segment consisting of at least 55 to 100 meters of 4-pair balanced cabling will provide a reliable medium.

Response   *Response Status* **O**

Cl **55**　　*SC* **55.7.2**　　　　　*P* **193**　　*L* **38**　　# **29**
Powell, Scott　　　　　　　　　　Broadcom

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

Indicates that formulas for IL and ELFEXT in 11801 need to be extended in frequency but fails to mention that they also need to include length dependence.

Suggested Remedy

Change first sentence to read:

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 500MHz with appropriate adjustment for length.

Response　　　　　　*Response Status*　**O**

Cl **55**　　*SC* **55.7.2.4.4**　　　*P* **196**　　*L* **15**　　# **30**
Powell, Scott　　　　　　　　　　Broadcom

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

ELFEXT specification does not show dependence on length.

Suggested Remedy

Modify equation 55.19 to include length dependence.

Response　　　　　　*Response Status*　**O**

Cl **55**　　*SC* **55.7.3.1.2**　　　*P* **198**　　*L* **42**　　# **31**
Powell, Scott　　　　　　　　　　Broadcom

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

Equation 55-25 is redundant with 55-10.

Suggested Remedy

Modify equation 55-10 with appropriate length dependence. Drop equation 55-25 and associated text.

Response　　　　　　*Response Status*　**O**

Cl **55**　　*SC* **55.7.3.1.2**　　　*P* **199**　　*L* **5**　　# **32**
Powell, Scott　　　　　　　　　　Broadcom

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

This table could be interpreted to imply that shielded Class F has 2dB *worse* ANEXT than Class E.

Suggested Remedy

I believe the intent of referencing a specific cable type in the first column is to indicate the 11801 IL equation for that particular cable. Perhaps it would be clearer to change the label from "cable" to "Insertion Loss" and replace the entries with references to appropriate equations from 11801.

Response　　　　　　*Response Status*　**O**

Cl **55**　　*SC* **55.7.3.2.2**　　　*P* **200**　　*L* **48**　　# **33**
Powell, Scott　　　　　　　　　　Broadcom

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

See comment on table 55-8.

Suggested Remedy

See remedy to comment on table 55-8

Response　　　　　　*Response Status*　**O**

Cl **55**　　*SC* **55.8.3.1**　　　　*P* **204**　　*L* **38**　　# **34**
Powell, Scott　　　　　　　　　　Broadcom

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

Not necessary to specify RL to 500MHz with a 400MHz signal.

Suggested Remedy

Change upper limit from 500MHz to 400MHz to ease transformer/connector implementation.

Response　　　　　　*Response Status*　**O**

Cl **55**   *SC* **55.1.3.2**   *P* **136**   *L* **1**   # **35**

Ungerboeck, Gottfried   Broadcom

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

Text assumes transmit filtering performed entirely in analog domain.

Suggested Remedy

Change sentence to read:

This THP processed four dimensional symbol stream may be further processed by a digital transmit filter and is then passed on to four digital-to-analog converters (DACs).

Please see accompanying presentation on digital transmit filter.

Response   *Response Status*   **O**

Cl **55**   *SC* **55.4.3.1**   *P* **172**   *L* **44**   # **36**

Ungerboeck, Gottfried   Broadcom

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

Specifying fixed precoder values is premature prior to detailed specification of the transmitter.

Suggested Remedy

Please refer to corresponding presentation for transmitter specification and corresponding fixed IIR precoder coefficients.

Response   *Response Status*   **O**

Cl **55**   *SC* **55.5.6**   *P* **182**   *L* **45**   # **37**

Ungerboeck, Gottfried   Broadcom

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

Transmit PSD mask is defined too loosely.

Suggested Remedy

Please see corresponding presentation for a proposed mask.

Response   *Response Status*   **O**

Cl **55**   *SC* **55.7.2.1**   *P* **193**   *L* **55**   # **38**

Ungerboeck, Gottfried   Broadcom

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

Insertion loss specification does not reflect length dependence.

Suggested Remedy

Please see corresponding presentation for a concise specification of cabling characteristics.

Response   *Response Status*   **O**

Cl **55**   *SC* **55.7.3.1.1**   *P* **197**   *L* **53**   # **39**

Ungerboeck, Gottfried   Broadcom

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

Equation 55-23 does not specify length dependence on ANEXT.

Suggested Remedy

Please see corresponding presentation for a concise specification of cabling characteristics.

Response   *Response Status*   **O**

Cl **28**   *SC*   *P* **17**   *L* **5**   # **40**

Thompson, Todd   SolarFlare Communica

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

Table 28-8.
MDIO register for mr_adv_ability[16:1] is incorrect. MDIO register for mr_lp_adv_ability[16:1] is missing.

Suggested Remedy

MDIO register for mr_adv_ability[16:1] should be 7.16.15:0 AN advertisement register (see in 45.2.7.6 that 7.16 is a copy of register 4).

The MDIO register for mr_lp_adv_ability[16:1] should be 7.19.15:0 (see that in 45.2.7.7 that 7.19 is a copy of register 5).

Response   *Response Status*   **O**

Cl **28** *SC* *P* **34** *L* **30** # **41**
Thompson, Todd   SolarFlare Communica

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

This comment relates to Clause 45.2 Auto-Negotiation and to Clause 28 Parallel Detection and to the NLP Link Integrity Test.

Clause 45.2 does not specify bits for parallel detection (see Clause 45.2 and also Table 28-8 where mr_parallel_detection_fault has no corresponding entry for MDIO register).

This implies parallel detection is not required for 10GBASE-T auto-negotiation.

The only instance of link_status_[NLP] in the arbitration state diagram is in the parallel detection (transition to LINK STATUS CHECK).

Parallel detection in the PICS proforma is required only when there is an MII interface. See items 20 and 21 in 28.5.4.6.

If parallel detection is only mandatory when an MII interface is present, there's no need to have the NLP Receive Link Integrity Test be mandatory unless an MII interface is present. (Removing parallel detection removes all reference s to link_status_[NLP] from the arbitration state diagram).

Suggested Remedy

Modify Item 4 in 28.5.4.2 Status to MII:M.

Response *Response Status* **O**

Cl **45** *SC* **45.2.7.9** *P* **110** *L* **18** # **42**
Thompson, Todd   SolarFlare Communica

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

The reference to Table 45-3 is incorrect. There's no reference in Table 45-3 to link partner next pages.

Suggested Remedy

Modify this reference to point to the correct table or figure.

I'm not sure which table is the correct table. I couldn't tell from the context which table the writer had in mind. There's no table in Clause 28 that fits, but perhaps it's supposed to be a reference to a figure instead of a table in Clause 28? This probably should be Table 45-123!

Response *Response Status* **O**

Cl **45** *SC* **45.2.7.11** *P* **112** *L* **47** # **43**
Thompson, Todd   SolarFlare Communica

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

Table 45-125.

The description of Loop Timing Ability is not accurate. It states "PHY is/is not capable of Loop timing". This is not consistent with the terms used in the rest of this table or in the control register description in the next table where LD/LP is used.

This term also doesn't match the description in 7.33.10 which says it indicates "...that the link partner has the ability...".

Suggested Remedy

Instead of "PHY" use the term "LP is/is not capable of Loop timing".

Response *Response Status* **O**

Cl **45** *SC* **45.2.7.11** *P* **113** *L* **6** # **44**
Thompson, Todd   SolarFlare Communica

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

Table 45-125.

There is a typo in the "Bit(s)" field for the AN status register.

7.34.X is written when it should be 7.33.X.

Suggested Remedy

Change 7.34.6 to 7.33.6 and change 7.34.5:4 to 7.33.5:4.

Response *Response Status* **O**

Cl **45** *SC* **45.2.7.11.5** *P* **113** *L* **55** # **45**
Thompson, Todd   SolarFlare Communica

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

The reference to register 6.1 is to a Clause 22 register when it should be to a clause 45 register.

Suggested Remedy

Modify 6.1 to 7.1.6.

Response *Response Status* **O**

Cl **45**   *SC* **45.2.7.11.9**   *P* **114**   *L*   # **46**
Thompson, Todd   SolarFlare Communica

Comment Type   **E**   *Comment Status* **D**
The descriptions for bits 7.33.6 LP THP IIR down selection and 7.33.5:4 LP THP FIR down selection are missing. They should follow subclause 45.2.7.11.9.

Suggested Remedy
Add descriptions for 7.33.6 and 7.33.5:4 just following 45.2.7.11.9.

Response   *Response Status* **O**

Cl **45**   *SC* **45.2.7.12**   *P* **115**   *L* **34**   # **47**
Thompson, Todd   SolarFlare Communica

Comment Type   **E**   *Comment Status* **D**
Descriptions for 7.34.5 and 7.34.4:3 from table 45-126 are missing the corresponding text describing their usage.

Suggested Remedy
Insert descriptions for 7.34.5 and 7.34.4:3 just before 45.2.7.12.1.

Response   *Response Status* **O**

Cl **55**   *SC* **55.6.2**   *P* **190**   *L* **12**   # **48**
Thompson, Todd   SolarFlare Communica

Comment Type   **E**   *Comment Status* **D**
The variable names for unformatted message bits were copied from the 1000BASE-T standard for master-slave determination, but for extended next pages these bits are in different positions now. However, the old variable names are still used which refer to the non-extended next page bit positions.

U0, U1, and U2 referred to these bit positions in next page format. In extended next pages these bits are U11, U12 and U13 respectively.

For clarity the variable names should match their new bit positions.

Suggested Remedy
Change U0 to U11, change U1 to U12 and change U2 to U13.

Response   *Response Status* **O**

Cl **55**   *SC* **55.4.3.1**   *P* **173**   *L* **1**   # **49**
Booth, Brad   Intel

Comment Type   **E**   *Comment Status* **D**
The response to the comment for Table 55-2 is different than my recollection. I believe the agreement was to only have the rx'ed signal power and the power backoff columns.

Suggested Remedy
Remove editor's not and remove the length and IL columns from Table 55-2.

Response   *Response Status* **O**

Cl **55**   *SC* **55.11**   *P* **208**   *L* **19**   # **50**
Booth, Brad   Intel

Comment Type   **T**   *Comment Status* **D**
TBD in the delay contraints table.

Suggested Remedy
Unless there is a maximum offered by a PHY vendor, I would recommend using the maximum associated with 10GbE. That would make this value = 18,432 bit times.

Also, change the values in Table 44-2 to reflect this change with 18,432 bit times and 36 pause_quanta.

Response   *Response Status* **O**

Cl **55**   *SC* **55.12**   *P* **209**   *L* **1**   # **51**
Booth, Brad   Intel

Comment Type   **E**   *Comment Status* **D**
Provide PICS for D2.0.

Suggested Remedy
Fill in the PICS.

Response   *Response Status* **O**

Cl **28C**   *SC* **28C.11**   *P* **52**   *L* **23**   **#** **52**
Booth, Brad   Intel

Comment Type   **E**   *Comment Status*   **D**
     Second sentence refers to next page, not extended next page.

Suggested Remedy
     Insert "extended" before next page.

Response   *Response Status*   **O**

Cl **44**   *SC* **44.5**   *P* **81**   *L* **7**   **#** **53**
Booth, Brad   Intel

Comment Type   **E**   *Comment Status*   **D**
     This section has been changed in D2.1 of REVam. There are no changes being made
     here by 802.3an.

Suggested Remedy
     Delete all of subclause 44.5.

Response   *Response Status*   **O**

Cl **55**   *SC* **55.1.1**   *P* **131**   *L* **45**   **#** **54**
Booth, Brad   Intel

Comment Type   **E**   *Comment Status*   **D**
     Editor's note not required.

Suggested Remedy
     Delete editor's note.

Response   *Response Status*   **O**

Cl **55**   *SC* **55.4.4**   *P* **173**   *L* **50**   **#** **55**
Booth, Brad   Intel

Comment Type   **T**   *Comment Status*   **D**
     Reference is to 40.4.4 which is the same text as in 55.4.4 but mentions 1000BASE-T.
     Reference 40.4.4's subclause to avoid having to edit Clause 40.

Suggested Remedy
     Change reference from "40.4.4" to "40.4.4.1 and 40.4.4.2."

Response   *Response Status*   **O**

Cl **55**   *SC* **55.4.5.2**   *P* **174**   *L* **17**   **#** **56**
Booth, Brad   Intel

Comment Type   **T**   *Comment Status*   **D**
     TBDs associated with timer values.

Suggested Remedy
     Adopt timer values as listed and remove TBDs.

Response   *Response Status*   **O**

Cl **00**   *SC*   *P*   *L*   **#** **57**
Booth, Brad   Intel

Comment Type   **E**   *Comment Status*   **D**
     Ensure that D2.0 references the most recent version of 802.3REVam.

Suggested Remedy
     As per comment.

Response   *Response Status*   **O**

Cl **55**   *SC* **55.5.8.4**   *P* **184**   *L* **33**   **#** **58**
William Jones   Solarflare Communicat

Comment Type   **T**   *Comment Status*   **D**
     Power spectral density of the noise not specified (text shows it as TBD)

Suggested Remedy
     Replace TBD with -141.9 (see jones_1_0305.pdf)

Response   *Response Status*   **O**

Cl **55**   *SC* **55.5.6**   *P* **182**   *L* **45**   # **59**

Adriaenssens, Luc   SYSTIMAX Solutions

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

The current upper PSD mask is a 2-piece linear equation. This results in an unnecessary sharp edge at 330 MHz. Simulations performed by Teranetics show that typical implementations will have substantial margin to this 2-piece PSD mask around 330 MHz (slide #13 of gupta_1_0105.pdf). We should tighten the specification to ensure implementations are more constrained to enhance interoperability and assure better EMC performance.

Suggested Remedy

Change the Upper PSD mask to a 3-piece linear equation:
    -78   1<=f<=150
    -78-(f-150)/58   150<f<=730
    -78-(f-330)/40   730<f<=1850

See supporting diagram in pdf file

Response   *Response Status*   **O**

Cl **44**   *SC* **44.3**   *P* **79**   *L* **28**   # **60**

George Zimmerman   SolarFlare

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

fill in TBDs in delay table. Discussion in study group and task force has made it clear that vendors will make application-specific delay tradeoffs. No driving reason exists for tight delays, and no data has been presented to restrict delays. Discussion with users has suggested that delays up to 10usec would be.

Suggested Remedy

fill in TBDs with equivalent values for 10 usec, delete reference to 55.11.1

Response   *Response Status*   **O**

Cl **55**   *SC* **55.11.1**   *P* **208**   *L*   # **61**

George Zimmerman   SolarFlare

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

XGMII will likely not be available reference point, discussion is redundant to clause 44.

Suggested Remedy

delete lines 10-28, or replace to be in agreement with 44-2.

Response   *Response Status*   **O**

Cl **55**   *SC* **55.4.3.1**   *P* **173**   *L*   # **62**

George Zimmerman   SolarFlare

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

Fill in power backoff table.

Suggested Remedy

See table in presentation Zimmerman_1_0305.pdf

Length(m)	Far End Power at MDI	Backoff (dB)
0-25	>+0.3	14
25-35	+0.3 to -1.1	12
35-45	-1.1 to -2.3	10
45-55	-2.3 to -3.3	8
55-65	-3.3 to -4.2	6
65-75	-4.2 to -5.0	4
75-85	-5.0 to -5.7	2
>85	<-5.7	0

Response   *Response Status*   **O**

Cl **55A**   *SC* **Table 55A**   *P* **214**   *L* **3**   # **63**

Sailesh Rao   Phyten Technologies, I

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

The specification of the LDPC code has several problems:
1. The table for the specification is 145 pages long. It contains 194,699 entries, which is truly cumbersome.
2. The specification obscures the structured nature of the (2048,1723) LDPC code and therefore, anyone devising an encoder or a decoder from the standard would not be able to derive a competitive implementation.
3. The structured definition of the code is currently only available on the task force web site, which unlike the standard, is ephemeral in nature.

Suggested Remedy

Specify the LDPC code using the Hb sparse matrix, and the col_swap_b and row_swap_b vectors. Such a specification preserves the structured nature of the code, and provides the necessary tools for future implementers to derive competitive LDPC encoders and decoders. In addition, such a specification only needs 2048 X 7 + 384 = 14,720 entries in the tables and can be written up in less than 11 pages.

Response   *Response Status*   **O**

Cl **55**   *SC* **55.4.3.1**   *P* **172**   *L* **15**   **#** **64**

Sailesh Rao   Phyten Technologies, I

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

There is no need for a THP Bypass mode during normal operation in the standard.
1. The THP Bypass mode is not needed for noise margin purposes for 0m operation.
2. If a THP Bypass mode is made available during normal operation, then implementers who are building PHYs based on just the THP Bypass mode will gain a competitive advantage if the specified THP coefficients are all unusable. At present, in Draft D1.3, the THP filters specified are all unusable if 1000BASE-T Alien FEXT/NEXT are the dominant noise sources in the cable plant.

Suggested Remedy

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

Response   *Response Status*   **O**

Cl **55**   *SC*   *P*   *L*   **#** **65**

Bennett, Michael   LBNL

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

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.

Suggested Remedy

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

Response   *Response Status*   **O**

Cl **55**   *SC* **55.4.5.2**   *P* **174**   *L* **17**   # **66**

McClellan, Brett   Solarflare

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

maxwait_timer value is TBD, and the text refers to only 1 of the 2 state machine figures using the timer.

Suggested Remedy

change text to:

maxwait_timer
A timer used to limit the amount of time during which a receiver dwells in the SLAVE SILENT and TRAINING states. The timer shall expire 2000 ± 10 ms after being started. This timer is used jointly in the PHY Control and Link Monitor stage diagrams. The maxwait_timer is tested by the Link Monitor to force link_status to be set to FAIL if the timer expires and loc_rcvr_status is NOT_OK. See Figures 55–18 and 55-19.

Response   *Response Status* **O**

Cl **55**   *SC* **55.4.5.2**   *P* **174**   *L* **22**   # **67**

McClellan, Brett   Solarflare

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

The operation of the maxincr_timer isn't clear in the draft.

- First, the timer doesn't limit the amount of time in the PMA Training Init state. It only limits the time spent at any PBO setting.
- When does the timer expire when PBO = -14? The text is not clear on this.
- What happens when the timer expires while PBO=-6. Do you cycle back to PBO = -14 or stay at PBO=-6?
- The timing uncertainty after autoneg is ~68ms (8 autoneg frames=8x 8.5ms). Is there enough timing allowed for this?

Suggested Remedy

change the text to:

maxincr_timer
A timer used to limit the amount of time during which a Master dwells at each PBO setting while in the PMA Training Init M state. The timer shall expire at 168 ± 5 ms if PBO = -14, or at 100 ± 5 ms if PBO = -10. The timer shall not expire while PBO = -6.

Response   *Response Status* **O**

Cl **55**   *SC* **55.4.5.2**   *P* **174**   *L* **27**   # **68**

McClellan, Brett   Solarflare

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

The minwait timer definition refers to states that don't exist.

Suggested Remedy

change text to:

minwait_timer
A timer used to determine the minimum amount of time the PHY Control stays in the PCS Training and Send PCS Link OK states. The timer shall expire 1 ± 0.1 ms after being started.

Response   *Response Status* **O**

Cl **28**   *SC* **28.3.2**   *P* **26**   *L* **26**   # **69**

McClellan, Brett   Solarflare

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

The resolution for comment #85 at the February interim was that the link_fail_inhibit_timer would be specified differently for 10GBASE-T.
The draft does not yet reflect this change, and the time is still TBD.

This timer needs to be set such that it will not timeout prior to the time needed for PHY startup (proposed to be 2000ms).
A timer spec of 2000 to 2250 ms should be sufficient.

Suggested Remedy

Split the table entry for link_fail_inhibit_timer into lines for 10GBASE-T and other devices. Specify min/max times of 2000/2250 ms.

Also update the table in 28.5.4.8 page 44 line 22 and the text in 28.3.2 page 25 line 34 to reflect the change.

Response   *Response Status* **O**

Cl **55**   *SC* **55.4.6.1**   *P* **175**   *L* **15**   **#** **70**

McClellan, Brett   Solarflare

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

"NOTE-maxwait_timer is reset only upon transition from DISABLE 10GBASE_T
TRANSMITTER state"
The maxwait timer should also be reset on the transition from Send PCS Link OK so that a
retrain may occur from the Link Up state (as in 1000BASE-T) without transitioning to the
Link Down state and restarting autonegotiation.

Suggested Remedy

change text to:
NOTE-maxwait_timer is reset only upon transition from DISABLE 10GBASE_T
TRANSMITTER state or Send PCS Link OK state.

Response   *Response Status* **O**

Cl **55**   *SC* **55.3.2.2**   *P* **145**   *L* **56**   **#** **71**

McClellan, Brett   Solarflare

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

"Training mode encoding also takes into account the value of the parameter
loc_rcvr_status. By this mechanism, a PHY indicates the status of its own receiver to the
link partner."

loc_rcvr_status is now sent in the Info Field, not continuously in the training sequence.

Suggested Remedy

Change text to:

"During training mode an InfoField is transmitted at regular intervals containing messages
for startup operation. By this mechanism, a PHY indicates the status of its own receiver to
the link partner."

Response   *Response Status* **O**

Cl **55**   *SC* **55.3.8**   *P* **155**   *L* **18**   **#** **72**

McClellan, Brett   Solarflare

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

Reference to the file "gen_802.3an.txt" is akward without giving a location to find the file.

Suggested Remedy

Add a description of where to find the file.

Response   *Response Status* **O**

Cl **55**   *SC* **55.3.16.1**   *P* **160**   *L* **33**   **#** **73**

McClellan, Brett   Solarflare

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

The InfoField is currently specified to be transmitted in the last 128 bits of every 16384
symbol periods.
Pair A is inverted every 256 symbol periods to denote the LDPC frame location.
Page 158 specifies that if requested by the link partner, the PCS shall reset the scrambler
every 16384 symbol periods.
However, there is no explicit statement that the these events are aligned.
Also, there is no explicit statement that the LDPC frame is aligned with the pair A inversion.

Additionally, I think it is desirable that the start of the InfoField be aligned with the start of
the 16384 and 256 symbol periods.

Suggested Remedy

Add the following text:

The inversion on pair A at 256 symbol intervals defines the LDPC frame boundary during
data mode. If requested by the link partner, the PCS will reset the training mode scrambler
every 16384 symbol periods aligned with the 256 symbol period inversion on pair A.

change text to:
Notice that over the repeating time intervals of 16384 and of length 128, m*16384 <= n
<m*16384 + 128, m= 1, 2, 3,..., the PMA training pattern in pair A is XOR'ed with the
InfoField (IFn).

Response   *Response Status* **O**

Cl **55**   *SC* **55.4.2.4**   *P* **171**   *L* **9**   **#** **74**

McClellan, Brett   Solarflare

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

parameter "remoteIF" is undefined

Suggested Remedy

Provide a definition or remove the reference.

Response   *Response Status* **O**

TYPE: TR/technical required T/technical E/editorial   COMMENT STATUS: D/dispatched A/accepted R/rejected   SORT ORDER: Comment ID
RESPONSE STATUS: O/open   W/written C/closed   U/unsatisfied Z/withdrawn

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Cl **55**   *SC* **55.6**   *P* **187**   *L* **4**   # **75**

McClellan, Brett   Solarflare

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

reference to clause 22 should be clause 45

Suggested Remedy

change text to:
10GBASE-T makes extensive use of the management functions provided by the MII
Management Interface (Clause 45), and the communication and self-configuration
functions provided by Auto-Negotiation (Clause 28).

Response   *Response Status*   **O**

Cl **45**   *SC* **45.2.3.11.3**   *P* **102**   *L* **54**   # **76**

McClellan, Brett   Solarflare

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

The LFER monitor only detects error rate higher than 1E-4.

Suggested Remedy

Change 1E-12 to 1E-4.

Response   *Response Status*   **O**

Cl **45**   *SC* **45.2.1.60**   *P* **91**   *L* **19**   # **77**

McClellan, Brett   Solarflare

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

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.

Suggested Remedy

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

Response   *Response Status*   **O**

Cl **45**   *SC* **45.2.1.61**   *P* **93**   *L* **23**   # **78**

McClellan, Brett   Solarflare

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

The use of one-hot encoding for the register bits appears to be a remnant from an ability
register rather than a status register.

Suggested Remedy

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

Response   *Response Status*   **O**

Cl **55** *SC* **55.7.2** *P* **193** *L* **29** *#* **79**
Brown, Kevin   Broadcom

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

The phrase "at least 55 to 100 meters of Class E" is not meaningful. The transmission parameters need to ensure a specific distance is always reliable. The current phrasing make it unclear whether a 65 meters (for example) link segment would be in all cases be reliable.

Suggested Remedy

The transmisson parameters contained in this subclause are specified to ensure that a 10GBASE-T link segment consisting of at least 55 meters of Class E...

Response *Response Status* **O**

Cl **55** *SC* **4.3.1** *P* **172** *L* **39** *#* **80**
Vareljian, Albert   KeyEye Communicatio

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

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.

Suggested Remedy

Replace coefficient entries in the THP sets A(1), A(2) and A(3) with 8-bit representation as follows:

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

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

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

Response *Response Status* **O**

Cl **55** *SC* **55.4.6.1** *P* **175** *L* **28** *#* **81**
McClellan, Brett   Solarflare

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

Variables Decode IF_S, Decode IF_M and transition_count are used in the state machine without being defined.

Suggested Remedy

add the following text to 55.4.5.1:

Decode IF_M This variable reports that the Slave has successfully received and decoded the InfoField from the Master device. This variable takes on the value contained in the Message Field. Values: PBO_Increase, Transition_to_Training_Update, Transition_to_PCS_Training, Transition_to_Slave_Silent, or NOT_OK

Decode IF_S This variable reports that the Master has successfully received and decoded the InfoField from the Slave device.This variable takes on the value contained in the Message Field. Values: PBO_Increase, Transition_to_Training_Update, Transition_to_PCS_Training, Transition_to_Slave_Silent, or NOT_OK

transition_count This variable reports the value of the transition counter contained in the InfoField sent by the remote device. When the message field contains a flag for a state transition, the transition counter will denote the remaining number of InfoField until the next state transition.

Change the text in fig 55-18 at the transition from PMA Training Init to PMA Training Update from: Decode IF_S=OK and Decode IF_M = OK
to: Decode IF_S=Transition_to_Training_Update and Decode IF_M = Transition_to_Training_Update

Response *Response Status* **O**

Cl **55** *SC* **4.3.1** *P* **172** *L* *#* **82**
Halder, Bijit   Plato Networks

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

The proposed sets of FIR and IIR THPs were calculated without the presence of AFEXT or the power back off policy. And since then no analysis is presented to quantify the performance, in particular the SNR loss, for these THP in the presence of AFEXT, power back off, transmit distortion. Given the available small SNR margin, it is not justified to burden all venders to implement THP sets that are not proven to work.

Suggested Remedy

Remove the THP sets until data is presented confirming satisfactory performance with realistic assumptions.

Response *Response Status* **O**

Cl **55**   *SC* **55.4.3.1**   *P* **172**   *L*   **#** **83**

Halder, Bijit   Plato Networks

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

The draft specifies the number of THP sets to be 16. However, only few of them are specified in D1.4. The THP specification is incomplete.

Suggested Remedy

Either reduce the total number of THP sets to the specified ones or add TBDs for the unspecified sets.

Response   *Response Status*   **O**

Cl **55**   *SC* **55.4.3.1**   *P* **173**   *L*   **#** **84**

Halder, Bijit   Plato Networks

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

The power back off policies based on received signal power suffers significant SNR loss due to variation in transmit power. As a consequence, these PBO policies fail to guarantee even a 1.5dB system margin. Moreover, the received signal power at the MDI is hard to measure directly and accurately, and the lack of accuracy may jeopardize the robustness of the PBO policy.

Suggested Remedy

Remove the reference to MDI interface. Consider PBO policy that incorporate more than just receive signal power.

Response   *Response Status*   **O**

Cl **55**   *SC* **55.7.3.2.1**   *P* **199**   *L*   **#** **85**

Halder, Bijit   Plato Networks

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

The PS AELFEXT is a core requirement for successful 10GBASE-T operation and must be made normative for both the worst case limit line and average limit line.

Suggested Remedy

1. Replace the text on page 199 line 55:

The PS AELFEXT loss between a disturbed duplex channel in a link segment and the disturbing duplex channels in other link segments shall meet the limit defined by the equation:

2. Add the following text at the end of the section:
 The PS AELFEXT loss between a disturbed duplex channel in a link segment and the disturbing duplex channels in other link segments when averaged across four pairs of the disturbed duplex channel shall meet the limit defined by the equation:
$PSAELFEXT\_ave >= X2+4-10log10(f/100)$ (dB)

Response   *Response Status*   **O**

Cl **55**   *SC* **55.7.3.1.1**   *P* **197**   *L* **148**   **#** **86**

Halder, Bijit   Plato Networks

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

The PS ANEXT is a core requirement for successful 10GBASE-T operation and must be made normative for both the worst case limit line and average limit line.

Suggested Remedy

1. Replace the text on page 197 line 48:

The PS ANEXT loss between a disturbed duplex channel in a link segment and the disturbing duplex channels in other link segments shall meet the limit defined by the equations:

2. Add the following text at the end of the section:
 The PS ANEXT loss between a disturbed duplex channel in a link segment and the disturbing duplex channels in other link segments when averaged across four pairs of the disturbed duplex channel shall meet the limit defined by the equations:
$PSANEXT\_ave >= X1+1-10log10(f/100)$ (dB) $1<= f <=100$
        $>= X1+1 -15log10(f/100)$ (dB) $100<f<=500$.

Response   *Response Status*   **O**

Cl **44**   *SC* **44.3**   *P* **79**   *L* **28**   **#** **87**
Tellado, Jose   Teranetics

Comment Type   **T**   *Comment Status* **D**
Informative round trip delay value is TBD.

Suggested Remedy
Replace with <=10 microsec.

Response   *Response Status* **O**

Cl **44**   *SC* **44.3**   *P* **79**   *L* **29**   **#** **88**
Tellado, Jose   Teranetics

Comment Type   **T**   *Comment Status* **D**
Informative round trip delay value is TBD.

Suggested Remedy
Replace with 5 microsec (including 100m of cable).

Response   *Response Status* **O**

Cl **55**   *SC* **55.4.5.2**   *P* **174**   *L* **18**   **#** **89**
Tellado, Jose   Teranetics

Comment Type   **T**   *Comment Status* **D**
maxwait_timer is currently 950/750ms.

Suggested Remedy
Replace with 2 sec

Response   *Response Status* **O**

Cl **55**   *SC*   *P*   *L*   **#** **90**
Tellado, Jose   Teranetics

Comment Type   **T**   *Comment Status* **D**
THP IIR coefs missing. THP filters below have been presented in golden_1_1104.

Suggested Remedy
Adopt the following subset of 3 THP IIRs
Long, $H(D) = (1 - D^2) / (1 – 64/32D + 42/32D^2 - 9/32D^3)$
Medium, $H(D) = (1 - D^2) / (1 - 13/8D + 21/32D^2)$
Short $H(D) = (1 – D^2) / (1 - 9/8D – 5/32D^2 + 21/64D^3)$

Response   *Response Status* **O**

Cl **55**   *SC* **4.3.1**   *P* **173**   *L* **24**   **#** **91**
Tellado, Jose   Teranetics

Comment Type   **T**   *Comment Status* **D**
Received signal power at MDI is TBD

Suggested Remedy
Replace with MDI received power for a nominal tx power of 4.2dBm and a nominal tx psd.
The corresponding rx MDI dbm values for PBO of -2dB, -4dB, -6, -8, -10, -12 and -14
should be replaced with -9.8, -8.8, -7.6, -6.4, -4.9, -3.3, -1.5

Response   *Response Status* **O**