Cl **00** *SC* **52** *P* **481** *L* **12** **#** **71**

Thaler, Pat Agilent Technologies

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

This is a resubmission and update of a comment I made on D4.2 which was overlooked.

Why are Figure 53-12 and Figure 52-11 so different when they seem to be showing the same thing? Also, Figure 53-12 seems to accomplish its purpose in black and white while Figure 52-11 is using color. The existing 802.3 is black and white so we shouldn't add the expense of color to the printing unless it is necessary for clarity of the standard.

Figure 52-3 also uses color.

SuggestedRemedy

Make Figures 52-11 and 53-12 the same unless there is a reason for the difference. Make Figures 52-3 and 52-11 black and white.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. No change to the document. A cover letter to the IEEE editor will be attached that states: "Figures have been tested in black and white and there is no expectation that the document will be printed in color."

Cl **00** *SC* **52.9.10.1** *P* **479** *L* **16** **#** **12**

Dawe, Piers Agilent

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

Here we should hint at the bandwidth of the filter (around 3.75 to 5 GHz). Giving this guidance would tend to keep implementers away from extreme values of the sinusoidal terms and make for a more consistent test across the industry.

This is part of the expedient alternative to my previous suggestion of using the mathematically correct definition of OMA when an interferer is used, which would involve more visible changes to the draft.

SuggestedRemedy

Add sentence "An electrical bandwidth of 3.5 to 5 GHz may be found appropriate."

Response *Response Status* **C**

REJECT. This clarification (hint) is not necessary. The text suggests using a filter and specifies a VECP to be achieved.

11:2

Cl **00** *SC* **52.9.10.2** *P* **479** *L* **42** **#** **15**

Dawe, Piers Agilent

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

Ambiguous, as discussed on the reflector. Also I thought we had scrubbed this use of "peak" per a comment last time.

SuggestedRemedy

Replace "For this test, these two components are defined by peak values that include all but 0.1% for VECP and all but 1% for jitter of their histograms."
with
"For this test, VECP is defined by the 99.9th percentile of the histogram of the lower half of the signal and the 0.1th percentile of the histogram of the upper half of the signal, and jitter is defined by the 1st and 99th percentiles of the jitter histogram."

Or may get a better alternative from Tom.

Response *Response Status* **C**

REJECT. This clarification is not needed.

13:0:8

Cl **00** *SC* **52.9.10.2** *P* **479** *L* **47** **#** **16**

Dawe, Piers Agilent

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

Text jumps abruptly into a recipe without enough flags for the reader.

SuggestedRemedy

Replace "Steps:" with "In steps 1 to 7 below, a suggested method of calibrating a stressed eye generator is described in detail."

Response *Response Status* **C**

ACCEPT. Edit to be submitted as a suggested change to the publication editor.

Cl **00** *SC* **52.9.6.2** *P* **474** *L* **25** **#** **5**

Dawe, Piers Agilent

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

Number on different line to unit.

SuggestedRemedy

Use nonbreaking space. Also p483 line 21.

Response *Response Status* **C**

ACCEPT. Edit to be submitted as a suggested change to the publication editor.

TYPE: TR/technical required T/technical E/editorial COMMENT STATUS: D/dispatched A/accepted R/rejected SORT ORDER: Clause, Page, Line, Subclause

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

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Cl **00** *SC* **52.9.6.2**

Cl **00**   *SC* **Table 51-12**   *P* **444**   *L* **6**   # **99200**

Geoffrey Garner   Lucent Technologies

Comment Type **TR**   *Comment Status* **R**   *D4.2 #96*

Comments #99046 and #99048 of D4.1 (formerly comments #11 and #12, respectively, of D4.0) state that the +/- 100 ppm clock tolerance currently specified for the 10GBASE-LW and 10GBASE-EW receivers (in Tables 52-14 and 52-18, respectively) is more than is required in relation to the transmitter specification and any possible transport network such as SDH/SONET, OTN, and also old legacy 10 G WDM transponder equipment. Both comments indicate that, as such, the specification is internally inconsistent and also inconsistent with respect to transport equipment. There is no reason to require the receiver to have a tolerance of +/- 100 ppm because no received signal will ever have a frequency offset greater than +/- 20 ppm. The comments state that the receiver specification should be changed to what is required in line with the transmitter and transport network specification.

The response to these comments was REJECT, with a reference to the comment #93 response; this response simply indicated that this is consistent with clauses 46-51, and would be a flip-flop after much discussion to set the receiver tolerance to +/- 100 ppm. This response does not address the technical issue raised in the comments. The fact is that the +/- 100 ppm receiver tolerance is much more stringent than is needed for the +/- 20 ppm transmit tolerance spec.

The suggested remedy in both comments #99046 and #99048, to change the required receiver tolerance to +/- 20 ppm, would result in a less costly receiver design that would work with the transmitter specification. The design would be less costly because the receiver clock tolerance is essentially a spec on the receiver phase-locked loop pull-in range; making the pull-in range unnecessarily large results in the design being more costly than it needs to be.

This issue was discussed in the March 26, 2002 serial PMD call. The commenter raised the issue there because the comments were against clause 52, and they were against clause 52 because the relevant tables that contain the receiver clock tolerance (Tables 52-14 and 52-18) are in clause 52. Nonetheless, the members of the serial PMD group on the call said that the optics group does not really have the expertise or the strong opinions on this matter, and this would be better raised as a comment against "clause 00" for discussion in the larger group. Therefore, the present comment is against "clause 00". It also was stated in the March 26, 2002 seial PMD call that changing the receiver clock tolerance to +/- 20 ppm would also require changes to clause 51. Examination of clause 51 does indicate that receiver clock tolerance is also given in Table 51-12. The present comment indicates that the entry for 10GBASE-W in Table 51-12 on Line 6, p. 444, should be changed from 622.08 MHz+/-100ppm to 622.08 MHz+/-20ppm.

This is in addition to the changes to Clause 52, Tables 52-14 and 52-18 already indicated in Comments #99046 and #99048. Finally, note that the original comment that gave rise to the change to the WAN PHY transmit clock tolerance, comment #661 of D3.0, indicated that the 622.08 MHz+/-100ppm in what was then Table 51.6 of D3.0 should be changed to 622.08 MHz+/-20ppm, and that analogous changes should be made to Tables 52-7, 52-9, 52-12, 52-14, 52-17, and 52-18. The clause 52 tables include the transmit and receive specs. The clause 51 table pertains only to the transmit spec; however, D3.0 did not have a clause analogous to Clause 51.7.2 in D4.2, nor a Table analogous to Table 51-12 in D4.2. The statements in Comment #661 of D3.0 at least indicate that the intent of this comment was to change both the 10GBASE-W transmitter and receiver clock tolerances from +/-100ppm to +/-20ppm. The response to this comment indicates ACCEPT, with the comment re-issued as #44000 and 44001 to permit clause 51 and 52 editors to track

closure of the comment.

SuggestedRemedy

Make the changes to Tables 52-14 and 52-18 already indicated in Comments #99046 and #99048, to change the 10GBASE-LW and EW receiver specs to +/-20ppm. Change 622.08 MHz+/-100ppm to 622.08 MHz+/-20ppm in Table 51-12.

Response   *Response Status* **U**

REJECT.

This comment has been ruled as not a new comment. This comment was submitted against Clause 52 in D4.0 by the commenter, and the comment was rejected. The comment was recirculated and the draft has remained approved through the D4.1 and D4.2 recirculations.

Input from other PLL designers is that +/- 100 ppm doesn't impact the cost of the PLL design. The assumption that +/- 20 ppm would always occur at the receiver is invalid. One possible application for increased receive clock tolerance is the mapping and demapping of 10GBASE-W into a SONET/SDH payload.

Historically, Ethernet has been liberal on what they receive and conservative on what they transmit. The support for the current tolerances is indicative of support for this philosophy.

Cl **01**   *SC* **1.3**   *P* **5**   *L* **34**   # **38**

Booth, Brad   Intel

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

Reference publication year.

SuggestedRemedy

Published in 2001.

Response   *Response Status* **C**

ACCEPT.

Cl **01**   *SC* **1.3**   *P* **5**   *L* **40**   # **39**

Booth, Brad   Intel

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

Title and publication year.

SuggestedRemedy

IEC 60825-1: 2001, Edition 1.2, Consolidated Edition; Safety of Laser Products - Part 1: Equipment classification, requirements and user's guide

Response   *Response Status* **C**

ACCEPT.

Cl **01**   *SC* **1.3**   *P* **5**   *L* **45**   **#** **40**

Booth, Brad   Intel

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

publication year

SuggestedRemedy

published in 2000.

Response   *Response Status* **C**

ACCEPT.

Cl **01**   *SC* **1.3**   *P* **6**   *L* **13**   **#** **41**

Booth, Brad   Intel

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

publication year

SuggestedRemedy

published in 2000

Response   *Response Status* **C**

ACCEPT.

Cl **01**   *SC* **1.3**   *P* **6**   *L* **18**   **#** **42**

Booth, Brad   Intel

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

publication year

SuggestedRemedy

published in 2000

Response   *Response Status* **C**

ACCEPT.

Cl **01**   *SC* **1.3**   *P* **6**   *L* **33**   **#** **43**

Booth, Brad   Intel

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

reference

SuggestedRemedy

ANSI/TIA/EIA-455-175A-92; Chromatic Dispersion Measurement of Single-Mode Optical Fibers by the Differential Phase-Shift Method

Response   *Response Status* **C**

ACCEPT.

Cl **01**   *SC* **1.3**   *P* **6**   *L* **39**   **#** **44**

Booth, Brad   Intel

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

reference

SuggestedRemedy

ANSI/TIA/EIA-455-203-2001; Launched Power Distribution Measurement Procedure for Graded-Index Multimode Transmitters

Response   *Response Status* **C**

ACCEPT.

Cl **01**   *SC* **1.3**   *P* **6**   *L* **44**   **#** **45**

Booth, Brad   Intel

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

reference

SuggestedRemedy

ANSI/TIA/EIA-455-204-2000; Measurement of Bandwidth on Multimode Fiber

Response   *Response Status* **C**

ACCEPT.

Cl **01**   *SC* **1.3**   *P* **6**   *L* **49**   **#** **46**

Booth, Brad   Intel

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

reference

SuggestedRemedy

TIA-492AAAC-2002; Detail Specification for 850-nm Laser-Optimized, 50-um core diameter/125-um cladding diameter class Ia graded-index multimode optical fibers

Response   *Response Status* **C**

ACCEPT.

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

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Cl **01**   *SC* **1.3**

Cl **01**   *SC* **1.3**   *P* **7**   *L* **1**   # **3**
Dawe, Piers   Agilent

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

52.9.4 refers normatively to ANSI/TIA/EIA-526-4A-1997 which is informative reference [B13] in IEEE Std. 802.3 Annex A, which by the way should say (OFSTP-4A) not (OFSTP-4). 52.9.7 uses a "should" so maybe that's informative. Note 38.6.3 refers to it in a way that looks normative but calls out the [B13]. 38.6.3 is a variation on what ANSI/TIA/EIA-526-4A says.

SuggestedRemedy

Copy the entry presently in Annex A to the list of normative references, 1.3, replacing (OFSTP-4) with (OFSTP-4A).

Response   *Response Status*   **C**

ACCEPT. Add reference to "ANSI/TIA/EIA-526-4A-1997 (OFSTP-4A), Optical Eye Pattern Measurement Procedure."

Cl **01**   *SC* **1.3**   *P* **7**   *L* **1**   # **47**
Booth, Brad   Intel

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

reference

SuggestedRemedy

ANSI/TIA/EIA-568-B.3-2000; Optical Fiber Cabling Components Standard

Response   *Response Status*   **C**

ACCEPT.

Cl **30**   *SC* **30.5.1.1.4**   *P* **63**   *L* **39**   # **1**
Dawe, Piers   Agilent

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

enmeration

SuggestedRemedy

enumeration

Response   *Response Status*   **C**

ACCEPT. See response to comment #87.

Cl **30**   *SC* **30.5.1.1.4**   *P* **63**   *L* **39**   # **87**
Benjamin Brown   AMCC

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

Misspelling of enumeration

SuggestedRemedy

Replace "enmeration" with "enumeration"

Response   *Response Status*   **C**

ACCEPT. Request that the IEEE Editor make this change prior to publication.

Cl **30B**   *SC* **30B.2**   *P* **150**   *L* **52**   # **88**
Benjamin Brown   AMCC

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

Extra space after double hyphen

SuggestedRemedy

Replace "-- Clause" with "--Clause"

Response   *Response Status*   **C**

ACCEPT. Request that the IEEE Editor make this change prior to publication.

Cl **31B**   *SC* **31B.3.1**   *P* **158**   *L* **20**   # **58**
Booth, Brad   Intel

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

spelling

SuggestedRemedy

change zeroes to zeros

Response   *Response Status*   **Z**

Cl **44A**   *SC* **44A.4**   *P* **177**   *L* **22**   **#** **56**

Booth, Brad   Intel

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

Output of upper most AND gate is the logical inverse of Local Fault.

SuggestedRemedy

Change AND gate to be a NAND gate. This is an editorial comment because the annex is informative, not normative.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Request that the IEEE Editor make this change prior to publication.

This is a result of an incomplete change agreed to in an earlier draft. This makes the figure match the normative text.

Cl **45**   *SC* **45.2.2.8**   *P* **202**   *L* **35**   **#** **59**

Booth, Brad   Intel

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

spelling

SuggestedRemedy

change zeroes to zeros

also on page 223, line 4 and 10; page 226, line 5

Response   *Response Status* **C**

ACCEPT. Request that the IEEE Editor make this change prior to publication.

Cl **45**   *SC* **45.2.3.16**   *P* **226**   *L* **1**   **#** **2**

Dawe, Piers   Agilent

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

Draft says "The test pattern error counter ... contains the number of errors received .... This counter will count either block errors or bit errors dependent on the test mode (see 49.2.12)." But 49.2.12 says "When an isolated bit error occurs, it will cause the PRBS31 pattern error signal to go high three times... The test pattern error counter shall increment once for each bit time that the PRBS31 pattern error signal is high.

Remember this is a system level spec. We try to deal with signals that are observable at the ports. In this case, a user might force a single error on the line and be puzzled to see a count of 3. Clause 45 is misleading, because the counter does not report received bit errors, but an internally generated signal, around three times as many counts as received errors. You can't call the output of the checker "bit errors" or "received" without qualification because that is what is at the input of the checker; the signal coming out of the checker is not an error or in error, but deliberately created, even if it has similar characteristics to a receive side signal after descrambling. It has to have a different name.

It would be a disservice to anyone trying to write MDIO software and report received errors, without taking time out to understand the detail of the other clauses, not to tell him that he may need to divide the counter value by 3 to get a good estimate of received errors.

45.2.3.12.2 has the same problem. It says "The number of errors received during a PRBS31 pattern test are recorded in register 3.43." If you forced a single error on the line (one error received) the register would count 3.

SuggestedRemedy

In 45.2.3.16, replace "bit errors" with "multiplied bit errors at the bit error checker output". Add another sentence "In the latter case, a good estimate of received bit errors may be made by dividing the counter's contents by 3."
In 45.2.3.12.2, replace "number of errors received" with "number of multiplied bit errors at the bit error checker output".

Response   *Response Status* **Z**

Withdrawn.

Cl **45**   *SC* **Table 45-11**   *P* **195**   *L* **40**   **#** **57**

Booth, Brad   Intel

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

extra space

SuggestedRemedy

appears to be an extra space between J1 and transmit, and on line 54 between J0 and transmit

Response   *Response Status* **C**

ACCEPT. Request that the IEEE Editor make this change prior to publication.

TYPE: TR/technical required T/technical E/editorial   COMMENT STATUS: D/dispatched A/accepted R/rejected   SORT ORDER: Clause, Page, Line, Subclause   Page 5 of 24

RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *Cl* **45**   *SC* **Table 45-11**

Cl **47**　　　*SC* **3.4.5**　　　　　*P* **292**　　　*L* **40**　　　# **99017**

Gaither, Justin　　　　　　　　　　Xilinx

Comment Type **TR**　　*Comment Status* **R**　　　　　*D4.0 #4*

Input impedance should be specified the same as the output impedance.

SuggestedRemedy

Change text similar to the way output impedance is specified.

Response　　　　　*Response Status* **U**

REJECT.

Input impedance spec is not considered to be a problem according to test data (working receivers were tested and met spec) supplied that did indicate a valid spec problem with output impedance. Recevier test data indicates that a flat 10 dB input return loss was achievable.

The impact of loosening transmitter return loss as agreed to for D4.0 comment resolutions results in an increase in return loss contribution to deterministic jitter from 0.03 UI to 0.049 UI. The additional impact of loosening receiver return loss as requested by this comment would result in a return loss contribution of 0.072 UI of deterministic jitter. This amount of additional jitter is excessive (blows the jitter budget) in light of the absence of proof of an existing problem with the current input impedance spec.

If evidence is received indicating that the current receiver return loss spec is not acheivable, then other driver and/or receiver parameters must be adjusted in order to maintain a working jitter budget.

Cl **51**　　　*SC* **4**　　　　　*P* **427**　　　*L*　　　# **99019**

Gaither, Justin　　　　　　　　　　Xilinx

Comment Type **TR**　　*Comment Status* **R**　　　　　*D4.0 #3*

As stated in the Note on page 421. XSBI is based on the OIF SFI-4 specification. The OIF specification includes the optional use of a Dual Data Rate clock which the XSBI implementation is missing.

An optional Dual Data Rate clock should be included in the standard as part of the XSBI interface for the following reasons:
1. Maintain continuity between OIF interface and XSBI
2. Broad market availability of LVDS IO at <400 Mhz (FPGA & ASIC)
3. >600 Mhz LVDS IO requires higher cost. (ASIC only, higher license fee)
4. lower EMI radiation.

SuggestedRemedy

The following changes will be required:
1. pg. 422 Table 51-1: add "SDR Mode defined as Single data rate clock mode of operation in which data is latched on the rising edge of the clock signal"
2. pg 422 Table 51-1: add "DDR Mode defined as Optional Dual Data Rate clock operation in which data is latched on both the rising and falling edge of the clock signal."
3. pg. 423 line 4: add text to read "...edge of the PMA_TX_CLK for SDR mode or the corresponding edge for DDR mode."
4. pg. 423 line 10 and 11. removed ", PMA_RX_CLK, which is at 1/16 the bit rate,"
5. pg 423 Table 51-4: Change active level for PMA_TX_CLK and PMA_RX_CLK to indicate rising edge for SDR Mode and both edges for DDR Mode.
6. pg 424 line 45: add text to read "rising edge of PMA_TX_CLK is used to latch data into the PMA in SDR mode and both edges of PMA_TX_CLK are used to latch data into the the PMA in DDR mode."
7. pg 425 line 11: add text to read "presented to the PMA client on the rising edge of PMA _RX_CLK in SDR Mode or both edges of PMA_RX_CLK in DDR Mode.
8. pg 427 line 10: add text to read "positioning clocks relative to the data in SDR mode."
9. pg 427 line 16: Change title of 51.6.1 to read "XSBI transmit interface timing for SDR mode" Similarly add for SDR mode to subclause titles as needed.
10. Insert new subclause 51.6.2 containing content similar to 51.6.1 except referenced to DDR mode. (I will gladly create the figures and text). specifications should be similar to OIF standard.
11. pg 429 line 50: add text to read "positioning clocks relative to the data in SDR mode"
12. pg 430 line 1: Change the title of 51.7.1 to read "XSBI receive interface timing for SDR Mode" Similarly add for SDR mode to subclause titles as needed.
13. Insert new subclause 51.7.2 containing content similar to 51.7.1 except referenced to DDR mode. (I will gladly create the figures and text). specifications should be similar to OIF standard.
14. pg 429 Table 51-8: existing spec should be specified for SDR mode. Add another row specifing DDR mode frequency.
15. pg 432 Table 51-12: existing spec should be specified for SDR mode. Add another row specifing DDR mode frequency.

Response　　　　　*Response Status* **U**

REJECT.

The DDR option was discussed extensively but voted out over one year ago in working

TYPE: TR/technical required T/technical E/editorial   COMMENT STATUS: D/dispatched A/accepted R/rejected   SORT ORDER: Clause, Page, Line, Subclause

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

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Cl **51**　　　*SC* **4**

group.

This feature last appeared in draft 1.1(Oct 2000). Since draft 2.0 (Dec 2000) this option is no longer in XSBI. There was consensus in the working group that there was no extensive usage of this mode in the industry.

[Note: Prior vote to remove the 3xx MHz mode.
"Move to accept resolution.
Vote: For: 12 Against: 2 Abstain: 6 (motion carries)"]

The XSBI is an optional interface. If the working group accepted the commenter's suggested remedy, there would be two non-interoperable version of the XSBI. The commenter is free to implement a proprietary interface if desired.

Including different options for the same interface is highly deprecated as it tends to split the market and create interoperability problems between components.

Cl **52**   *SC*   *P*   *L*   # 99201

Lindsay, Tom   Stratos Lightwave

Comment Type   **TR**   *Comment Status*   **A**   *D4.2 #193*

Need evidence that the values for the Tx TDP specifications and test method are correct, that they correlate to the stresses and penalties imposed by the Rx stressed eye and its method, and these 2 approaches ensure interoperable BER.

SuggestedRemedy

Provide sufficient test data and analysis.

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE. Commenter intends to withdraw comment upon further verification of the method (through testing). Commenter feels analysis is adequate.

The commenter has decided to close this comment with no changes to the draft.

Cl **52**   *SC*   *P*   *L*   # 99102

Ohlen, Peter   Optillion

Comment Type   **TR**   *Comment Status*   **A**   *D4.1 #11*

The receiver sensitivity is currently specified using the stressed sensitivity, measured with a conditioned input signal to which both jitter and ISI has been added. Although the method has been simplified, it still has a limited track record. There are a few parameters which can put you in different corners of a multi-dimensional "stress space". Different receivers designs have different strong and weak points, and depending on which corner you choose, you punish or favor different devices. For some, the nominal sensitivity is more critical, for others, SJ stress is most difficult. For yet another rx, DCD is more difficult.What do we really want to to? We want to find a set of parameters for the stressed eye such that the subsets (1)[passes_test & not_working] and (2)[fails_test & works] are both minimized. This calls for extensive testing and development of test procedures.At the time we want to make products that we can sell to the market-place without revising the spec numbers every other month.These two things don't go along very well, and we might need to give up one of the two options.

SuggestedRemedy

Settle on something that we think works today, with numbers that can easily be validated. Do one or several of the following:

1. Make the currently informative receiver sensitivity normative. This measurement is easier to calibrate but does not test jitter.

Separate the jitter and the ISI in the RX stress tests:

2. Remove the jitter from the stressed eye, only use a low-pass filter. Thi s would guard against low-bandwidth signals caused by TX and/or fiber impairments.

3. Introduce a SONET-style jitter tolerance test to ensure that the receiver can cope with a jittered input signal.

Other things we could do:

4. Keep the stressed eye, but follow the precedent of 1GbE and take out the margin for the stressed sensitivity because of the large uncertainty in how the actual penalty and stress (VECP measured on the oscilloscope) correlate.

5. Recognize that we have gathered enough measurement data to say that the stressed eye methodology is well understood and the we have confidence in the chosen numbers and know their significance to ""mission mode"" performance.

Response   *Response Status*   **U**

ACCEPT IN PRINCIPLE.

Specifications were refined and reflected in D4.2 & D4.3.

The stressed eye test procedures have been modified and we are now in a position where we believe the following:
- subset 1 (passes test and not working) has been minimized
- subset 2 (fails test and works) has been reduced

by the changes in the specification within D4.2 & D4.3 described below.

We limited the amount of sinsoidal amplitude interferer, thereby narrowing the 3D stress space. We introduced histogram definitions of VECP and jitter to make the calibration more accurate. We strengthened the spec to describe a low noise stressed eye generator. We tightened the TDP spec and added .05 UI offset to ensure that receivers that pass the stressed eye test would interoperate with the specified transmitters. By applying a variable amount of sinsoidal jitter, we now achieve the correct total jitter.

Measurements have been made which support the current specification. The committee believes the current specifications will produce interoperability with conformant products.

11:0:1

Cl **52**   *SC* **52**   *P* **437484**   *L*   *#* **99024**

Dawe, Piers   Agilent

Comment Type   **TR**   *Comment Status*   **R**   *D4.0 #43 test*

Need to prove viability of all optical test methods and detailed optical spec numbers, and/or make changes to achieve viability.While technical feasibility of PMDs has been demonstrated, although with tiny numbers of samples, feasibility of some of the measurement and specification procedures has not. Some procedures have not been exercised; some have and have been shown to be not viable. Until we have measurement procedures that work we cannot freeze the specification values.

SuggestedRemedy

Continue, and ramp up, the engineering work to refine and/or replace optical test methods and detailed optical spec numbers.Set a non-binding target hurdle of proof of feasibility such as:
For test procedures: procedure satisfactorily demonstrated in at least three organizations, on at least three samples per site, with a high level of confidence in the repeatability and the correlation from site to site.For PMD spec values: PMDs from at least three implementers compliant per feasible measurement techniques consistent with draft standard, with at least three samples per site, with a high level of confidence in interoperability across the compliant parameter space.This is a pretty weak level of experimental confidence and, I understand, represents a tiny fraction of the numbers of parts measured for the Gigabit Ethernet standardization process.In some instances we may be able to develop confidence by reference to other work, e.g. OC-192 parts.To avoid needless program slippage and churn, delay the issue of Draft 4.1 until we have demonstrated at least one of everything and have developed procedures, parameter limits and text which at least appear to be viable and worth further refinement.

Response   *Response Status*   **Z**

REJECT. This is a process request, not a comment against the draft.

9:1:2

Cl **52**   *SC* **52**   *P* **461**   *L*   *#* **99202**

Dawe, Piers   Agilent

Comment Type   **TR**   *Comment Status*   **R**   *D4.2 #76*

Time to move forward.

Written on Thursday: as the experimental error created by the stressed sensitivity methodology seems to exceed the error it is trying to buy out, I am still not convinced that it has a place in the standard.

SuggestedRemedy

If the stressed sensitivity technique is not provably working with acceptable accuracy at Vancouver meeting, make the nominal sensitivity normative and the stressed sensitivity informative throughout clause 52.

Response   *Response Status*   **U**

REJECT. The informative receive sensitivity specification may be insufficient, but the normative stressed receive sensitivity is sufficient. Making no change to the methodology may produce false negatives, but will not produce false positives.

16:2

See response to comment #99102.

Cl **52**   *SC* **52.13**   *P* **486**   *L* **34**   *#* **54**

Booth, Brad   Intel

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

Unable to find reference.

SuggestedRemedy

Reference to IEC 1280, IEC 1280-4 and IEC 1280-4-1 appears to be out of date. Should these be 61280?

This also impacts 1.3 and 53.13, but is issued against clause 52 as the source of the information.

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

Delete these references from 1.3 and from the affected text in 52.13 and 53.13. Each to have an editorial note stating that the text in the draft was copied from the final draft of 802.3z Clause 38. This change is to align the text with the current published version of 802.3, Clause 38.

Maintenance request to be submitted once IEC 61280-4-1 is published.

TYPE: TR/technical required T/technical E/editorial   COMMENT STATUS: D/dispatched A/accepted R/rejected   SORT ORDER: Clause, Page, Line, Subclause

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

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Cl **52**   *SC* **52.13**

Cl **52**   *SC* **52.14.1**   *P* **487**   *L* **40**   **#** **90**

Paul Kolesar   OFS

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

Presently referencing IEC-60793-2, a fiber spec, as if it were a cable spec. Clarify intent that the cable shall contain fibers meeting the fiber spec.

SuggestedRemedy

Modify text to read:
"The fiber optic cable shall contain fibers meeting the requirements of IEC 60793-2 and the requirements of Table 52–25 where they differ for fiber types..."

Response   *Response Status*   **C**

REJECT. Comment is out of the scope of the recirculation. Cable specifications refer to required specifications of fiber that is implicitly contained within that cable.

7:0:12

Cl **52**   *SC* **52.14.1**   *P* **488**   *L* **27**   **#** **89**

Paul Kolesar   OFS

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

Footnote "e" is out of date, since the TIA-492AAAC standard is published.

SuggestedRemedy

Delete last sentence of footnote "e".

Response   *Response Status*   **C**

ACCEPT. Request that the IEEE Editor delete the sentence "TIA/EIA-492AAAC is presently in ballot." as it is no longer applicable.

Cl **52**   *SC* **52.14.2.1**   *P* **488**   *L* **27**   **#** **21**

Dawe, Piers   Agilent

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

Can we go forward with "TIA/EIA-492AAAC is presently in ballot."? Is it? D4.2 #300 refers but doesn't say.

SuggestedRemedy

If appropriate, delete the sentence.

Response   *Response Status*   **C**

ACCEPT. See response to comment #89.

Cl **52**   *SC* **52.14.4**   *P* **489**   *L* **27**   **#** **30**

Dawe, Piers   Agilent

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

"as shown in Table 52–14"?

SuggestedRemedy

Figure 52-14

Response   *Response Status*   **C**

ACCEPT. Edit is to be submitted as a recommended change to the IEEE publication editor. "Table 52-14" should be a "Figure 52-14" reference (number is right, cross-reference format is wrong type).

Cl **52**   *SC* **52.14.4**   *P* **489**   *L* **37**   **#** **36**

Doug Coleman   Corning Cable System

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

61753-1-1 is a published standard, 61753-022-2 is listed as "Publication being printed"; however, it is not currently available for purchase at the website. and 61753-021-2 is in draft form and may not be published in time for release of the 802.3ae document. The 802.3ae document should include reference to TIA/EIA-568 B.3 guidance for connectors as an alternative. TIA/EIA-568 B.3 includes mechanical, environmental and interoperability guidance that is transparent to the referenced IEC standardards. The TIA/EIA-568 B.3 standard has withstood public scrutiny to provide reiliable connector performance. Note that TIA/EIA-785, 100 Mb/s Physical Layer Dependent Sublayer and 10 Mb/s Auto-Negotiation on 850 nm Fiber Optics includes reference to TIA/EIA-568 B.3 for connector performance.

SuggestedRemedy

Insert in line 42, Connector designs meeting the requirements of the corresponding connector intermateability standard and the optical connector requirements of ANSI/TIA/EIA 568 B.3.may be used to demonstrate conformance to items a, b, and c.

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE. A and B or A and C are apparent based on the specifications involved. The standards referenced are clearly interchangeable (to anyone in the field familiar with these specifications) with the commenter's suggested reference, and so no change is necessary.

The standard referenced in item B is not finalized. Send a recommendation to the IEEE publication editor that if it is not approved by the time of 802.3ae publication, then add a footnote to 1.3 with the date of the current draft of item B.

TYPE: TR/technical required T/technical E/editorial   COMMENT STATUS: D/dispatched A/accepted R/rejected   SORT ORDER: Clause, Page, Line, Subclause   Page 9 of 24

RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *Cl* **52**   *SC* **52.14.4**

Cl **52**   *SC* **52.14.4**   *P* **489**   *L* **37**   *#* **55**

Booth, Brad   Intel

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

References are listed by the IEC as work in progress.

SuggestedRemedy

Clarification required from the 802.3 chair about referencing material that is currently listed as a "work in progress" by another standards committee.

This also affects 1.3 and 53.14.3, but the comment is issued against clause 52 as the source.

Response   *Response Status* **Z**

Cl **52**   *SC* **52.15**   *P* **4915**   *L*   *#* **22**

Dawe, Piers   Agilent

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

As Peter pointed out, each conditionally mandatory PICS needs a "N/A" check box. I think each does not need a "No" box.

SuggestedRemedy

Add "N/A" check box to each conditionally mandatory PICS which does not already have one.

Response   *Response Status* **Z**

Withdrawn.

Cl **52**   *SC* **52.15.3**   *P* **491**   *L* **30**   *#* **64**

Ohlen, Peter   Optillion

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

Need an "N/A" box if the thing I am checking compliance for is an "INS"-thing.

SuggestedRemedy

See comment

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. PICS do not agree with referenced text. Edit is to be provided as a recommended change to publication editor.

Remove "!INS:".

Cl **52**   *SC* **52.15.4.1**   *P* **492**   *L* **21**   *#* **65**

Ohlen, Peter   Optillion

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

Is not signal detect mandatory, even if MDIO is not present. The mapping to MDIO is covered on line 42.

SuggestedRemedy

Delete the "MD:" on line 21.

Response   *Response Status* **C**

ACCEPT. PICS text does not appropriately match referred-to text. Edit to be submitted as a recommended change to publication editor.

Cl **52**   *SC* **52.15.4.1**   *P* **492**   *L* **21**   *#* **63**

Booth, Brad   Intel

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

Compliance to generating the signal detect based upon Table 52-5 has no correlation to the existance of MDIO/MDC.

SuggestedRemedy

Change status of entry FS6 from MD:M to M.

Response   *Response Status* **Z**

Withdrawn.

Cl **52**   *SC* **52.15.4.10**   *P* **495**   *L* **1**   *#* **69**

Ohlen, Peter   Optillion

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

This whole paragraph need "N/A" check boxes for people testing products which are not "INS"-things.

SuggestedRemedy

See comment.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.   PICS do not agree with referenced text. Edit is to be provided as a recommended change to publication editor.

Note: Correct FO1, FO2, FO6.

TYPE: TR/technical required T/technical E/editorial   COMMENT STATUS: D/dispatched A/accepted R/rejected   SORT ORDER: Clause, Page, Line, Subclause

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

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Cl **52**   *SC* **52.15.4.10**

Cl **52** *SC* **52.15.4.2** *P* **492** *L* **30** *#* **66**

Ohlen, Peter Optillion

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

This paragraph needs some clean up. See remedy. Specifically:

Was PMD_reset intended to be optional or mandatory ?

SuggestedRemedy

Item MD1: The mapping has to be done if MDIO is implemented. Change "No" to "N/A".

Item MD2: PMD reset is not optional per current writing in 52.4.5. Change "O"->"M" and "No"->"N/A".

Item MD3: Global TX disable is optional. Add a "No" box.

Item MD4+5: Need "N/A" boxes if MDIO is not implemented.

Item MD6: Signal detect is mandatory. Change "No" to "N/A".

Response *Response Status* **C**

ACCEPT. PICS do not agree with referenced text. Edit is to be provided as a recommended change to publication editor.

Cl **52** *SC* **52.15.4.9** *P* **494** *L* **43** *#* **68**

Ohlen, Peter Optillion

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

The TDP measurement is now used for all PMDs.

SuggestedRemedy

Remove the "N/A" box.

Response *Response Status* **C**

ACCEPT. PICS do not agree with referenced text. Edit is to be provided as a recommended change to publication editor.

Cl **52** *SC* **52.4.8** *P* **460** *L* **1** *#* **70**

Thaler, Pat Agilent Technologies

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

This appears to be the same sentence that is in 52.4.7 (page 459 line 41).

SuggestedRemedy

Delete it from 52.4.8

Response *Response Status* **Z**

Withdrawn.

Cl **52** *SC* **52.6.2** *P* **450** *L* **14** *#* **99033**

Juergen Rahn Lucent Technologies

Comment Type **TR** *Comment Status* **R** *D4.0 #93 clock tolerance*

For the 10GBASE-LW receive optical specifications a clock tolerance of +/-100ppm is specified in table 52-14. This is more than is required in relation to the transmitter specification and any possible transport network such as SDH/SONET, OTN, and also old legacy 10 G WDM transponder equipment. As such, the specification is internally inconsistent and also inconsistent with respect to transport equipment. There is no reason to require the receiver to have a tolerance of +/- 100 ppm because no received signal will ever have a frequency offset greater than +/- 20 ppm. The receiver specification should be changed to what is required in line with the transmitter and transport network specification.

SuggestedRemedy

Add an extra column for 10GBASE-LW in table 52-14 with 9.95328 GBd as rate and +/- 20ppm as clock tolerance in the same way as it is in Table 52-12.

Response *Response Status* **U**

REJECT. This is consistent with Clauses 46-51. This would be a flip-flop of a previous decision after much discussion to set the receiver frequency tolerance to +/- 100 ppm (the suggested change was rejected once)

6:1:3

See response to comment 96 of D4.2 for an updated explanation.

Cl **52** *SC* **52.7.2** *P* **453** *L* **14** *#* **99036**

Juergen Rahn Lucent Technologies

Comment Type **TR** *Comment Status* **R** *D4.0 #92 clock tolerance*

For the 10GBASE-EW receive optical specifications a clock tolerance of +/-100ppm is specified in table 52-18. This is more than is required in relation to the transmitter specification and any possible transport network such as SDH/SONET, OTN, and also old legacy 10 G WDM transponder equipment. As such, the specification is internally inconsistent and also inconsistent with respect to transport equipment. There is no reason to require the receiver to have a tolerance of +/- 100 ppm because no received signal will ever have a frequency offset greater than +/- 20 ppm. Thereceiver specification should be changed to what is required in line with the transmitter and transport network specification.

SuggestedRemedy

Add an extra column for 10GBASE-LW in table 52-18 with 9.95328 GBd as rate and +/- 20ppm as clock tolerance in the same way as it is in Table 52-17.

Response *Response Status* **U**

REJECT.

See response to comment 96 of D4.2 for an updated explanation.

TYPE: TR/technical required T/technical E/editorial COMMENT STATUS: D/dispatched A/accepted R/rejected SORT ORDER: Clause, Page, Line, Subclause Page 11 of 24

RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn *Cl* **52** *SC* **52.7.2**

Cl **52**   *SC* **52.9**   *P* **467**   *L* **23**   **#** **99104**

Booth, Brad   Intel

Comment Type **TR**   *Comment Status* **A**   *D4.1 #136*

In November 2001, the serial PMD group stood before the Task Force and stated that they had shown technical feasibility and that they had a path to compliance. The Task Force accepted this resolution as did the Working Group in granting conditional approval for the draft to go to Sponsor Ballot. After the first Sponsor Ballot circulation, the serial PMD group decided to change the test methodology for the serial PMDs. This major change to what was previously deemed technical feasible calls into question whether or not the serial PMD group and Task Force have achieved technical feasibility.

This new methodology and parameters for the serial PMDs has not been presented to the Task Force or Working Group to provide proof of technical feasibility in the form of manufacturability and ability to conformance test serial PMDs. Without proof that the new methodology and parameters are equal to or better than what the draft previously contained, one can only be left to assume that all previous statements about technical feasibility are now invalid and void.

SuggestedRemedy

Provide data to the Task Force that shows that at least 4 optical transceiver vendors can conform to the new specifications. Provide data to the Task Force that shows the difference between D4.0 and D4.1 test methodologies. Provide data to the Task Force that proves that vendors who comply with the D4.1 test methodology also comply with the BER, distance and interoperability requirements as per our objectives, PAR, and 5 criteria.

Response   *Response Status* **Z**

ACCEPT IN PRINCIPLE.

Technical feasibility of transceivers was asserted and proved, but the measurement techniques were not. New methodologies and parameters were presented to the IEEE task force at the Santa Rosa meeting, where they were incorporated in D4.1.

There is a consensus opinion within the PMD track that the current direction is the best one to follow.

Comparing D4.0 and D4.1 methodologies or results is not helpful to moving the standard forward.

Verification of test methodology based on experimental results will be shown at April meeting.

Cl **52**   *SC* **52.9.1**   *P* **470**   *L* **22**   **#** **61**

Booth, Brad   Intel

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

Second sentence doesn't make much sense.

SuggestedRemedy

Change sentence to read:
Two types of test patterns can be used as specified in 52.9.1.1 and 52.9.2.2.

Response   *Response Status* **Z**

Withdrawn.

Cl **52**   *SC* **52.9.10**   *P* **47681**   *L*   **#** **31**

Dawe, Piers   Agilent

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

It may be too late for this one but Pavel has reminded me of the neat name he coined at the last meeting which we couldn't remember and therefore couldn't implement.

SuggestedRemedy

Replace "Sinusoidal Amplitude Interferer", "Sinusoidal interference" throughout 52.9.10 with "sinusoidal offsetter" or "sinusoidal offset" as appropriate.

Response   *Response Status* **Z**

Withdrawn.

Cl **52**   *SC* **52.9.10.1**   *P* **477**   *L* **14**   **#** **9**

Dawe, Piers   Agilent

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

"50.3.8" should be a link.

SuggestedRemedy

Activate.

Response   *Response Status* **C**

ACCEPT. Edit to be submitted as a recommended change to the IEEE publication editor. There are multiple instances of this inter-clause reference.

Cl **52**   *SC* **52.9.10.1**   *P* **478**   *L* **49**   **#** 84
Lindsay, Tom   Stratos Lightwave

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

I am somewhat comfortable with Pier's suggestion to generalize the filter name and order, although I am concerned that it lets in a different type of variation than the ones we already have.

On to my comment - On the same line, we should not be referring to the specific value for VECP at this point.

SuggestedRemedy

Delete "penalty (VECP)."

Response   *Response Status* **C**

REJECT. This comment is out of the scope of the recirculation ballot and not necessary.

Cl **52**   *SC* **52.9.10.1**   *P* **478**   *L* **49**   **#** 10
Dawe, Piers   Agilent

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

After further analysis, I think hard-specifying "fourth-order Bessel-Thomson" here is actually counterproductive. There is no point tightly defining the filter and allowing very loosely specified amounts of sinusoidal amplitude interferer (particularly) and sinusoidal jitter. On p480 we say "linear phase, low jitter filter (such as Bessel Thomson)": that's the right level of guidance. We don't know enough to really tie down the spec for the stressed eye generator, so let's give the test equipment implementer a chance to do the right thing.

This is part of the expedient alternative to my previous suggestion of using the mathematically correct definition of OMA when an interferer is used, which would involve more visible changes to the draft.

SuggestedRemedy

Replace "fourth-order Bessel-Thomson" here with "linear phase, low jitter filter (such as Bessel Thomson)". Delete "fourth-order Bessel-Thomson" in Figure 52-10, and "Bessel-Thomson" on next page line 4 and 15. (But must keep it on line 23, that refers to something else).

Response   *Response Status* **Z**

Withdrawn.

PROPOSED REJECT. This comment is out of the scope of the recirculation ballot. Overspecifying the filter appears to do no harm, but explicitly prohibits other filters in the same class.

Cl **52**   *SC* **52.9.10.1**   *P* **479**   *L*   **#** 78
Lindsay, Tom   Stratos Lightwave

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

Clean up, strengthen descriptions.

SuggestedRemedy

1. Change the first part of the paragraph starting at line 15 (mostly per Piers). "The test pattern generator, filter and E/O converter should together have a frequency response to result in the appropriate level of initial ISI eye closure before the sinusoidal terms are added. The E/O converter should have a linear response - if electrical summing is used, linearity of all elements including the E/O modulator is critical. Summing with an optical..."

2. Add new sentence after the last sentence on line 26. "The reference receiver should have very low noise (be highly sensitive), high linearity, and minimal baseline wander, jitter, or other distortions."

Response   *Response Status* **C**

REJECT. All proposed changes are clarifications, and not critical. It is standard procedure to choose a good reference receiver, which would have the suggested characteristics.

Cl **52**   *SC* **52.9.10.1**   *P* **479**   *L* **13**   **#** 77
Lindsay, Tom   Stratos Lightwave

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

Clarification that residual jitter should be minimized.

SuggestedRemedy

Modify end of sentence with "...all sources is unavoidable, but should be less than 0.25 UI pk-pk..."

Response   *Response Status* **C**

ACCEPT. Edit will be provided as a recommendation to the publication editor.

Cl **52**　　*SC* **52.9.10.1**　　　　　*P* **479**　　　*L* **15**　　　# **14**

Dawe, Piers　　　　　　　　　　　　Agilent

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

Although we have consensus on the message we want to give here, these two sentences are out of line with good practice, as in 52.9.7 and G.691, and if taken literally would give the stressed eye generator implementer an unnecessarily hard task. Also I think "O/E" should be "E/O" (also in a separate comment).

SuggestedRemedy

Replace "The Bessel-Thomson filter should have the appropriate frequency response to result in the appropriate level of initial ISI eye closure before the sinusoidal terms are added. The O/E converter should be fast and linear such that the waveshape and edge rates are predominantly controlled or limited by the electrical circuitry."
with
"The test pattern generator, filter and E/O converter should together have the appropriate frequency response to result in the appropriate level of initial ISI eye closure before the sinusoidal terms are added. The E/O converter should have a linear response."

Or see Tom's comments.

Response　　　　　　　　*Response Status*　**Z**

Cl **52**　　*SC* **52.9.10.1**　　　　　*P* **479**　　　*L* **16**　　　# **33**

Dawe, Piers　　　　　　　　　　　　Agilent

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

Not O/E

SuggestedRemedy

E/O

Response　　　　　　　　*Response Status*　**C**

ACCEPT. Edit to be submitted as a recommended change to the IEEE publication editor.

Cl **52**　　*SC* **52.9.10.1**　　　　　*P* **479**　　　*L* **20**　　　# **32**

Dawe, Piers　　　　　　　　　　　　Agilent

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

For Mike Stout: To make it clearer to implementers that most transmitters are not suitable as stressed eye generators.

SuggestedRemedy

Add "In either case, a typical optical transmitter with built-in driver is not linear and not suitable."

Response　　　　　　　　*Response Status*　**C**

REJECT. This comment is out of scope of the recirculation, and not required.

Cl **52**　　*SC* **52.9.10.1**　　　　　*P* **479**　　　*L* **5**　　　# **13**

Dawe, Piers　　　　　　　　　　　　Agilent

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

Does a filter with wide and flat frequency response and linear phase response do anything? Even Bessel-Thomson filters don't have flat frequency responses.

SuggestedRemedy

Replace "flat" with "smooth".

Response　　　　　　　　*Response Status*　**Z**

Withdrawn.

Comment is out of the scope of the recirculation ballot.

Cl **52**　　*SC* **52.9.10.1**　　　　　*P* **479**　　　*L* **9**　　　# **11**

Dawe, Piers　　　　　　　　　　　　Agilent

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

Breaks the one "shall" per test rule.

SuggestedRemedy

must be

Response　　　　　　　　*Response Status*　**Z**

Withdrawn.

TYPE: TR/technical required T/technical E/editorial　COMMENT STATUS: D/dispatched A/accepted R/rejected　SORT ORDER: Clause, Page, Line, Subclause　　　Page 14 of 24

RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn　　　　　　　　　　　　　　　　　　　　　　　　　*Cl* **52**　　*SC* **52.9.10.1**

Cl **52**   *SC* **52.9.10.2**   *P* **479**   *L* **26**   **#** **74**

Lindsay, Tom   Stratos Lightwave

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

The present description for eye closure contradicts itself. On one hand, we call out minimal noise and data dependent effects, yet on the other hand, we limit the amounts of sine jitter and sine interference. If one is succesful on the first hand, they will not be able to achieve the required stress values because of the limitations of the second hand.

Relatedly, there is valid concern that allowing more sine interference will unduly stress receivers, as this is not a type of degradation found in real systems.

SuggestedRemedy

1. Page 480, change line 26. "...interference, the majority of the vertical..."

2. Move the short paragraph from Page 481, line 3, and insert it at Page 480, line 37 (still separate paragraph).

3. Modify the paragraph just moved to "...at least 5 psec but no more than 15 psec of pulse shrinkage jitter should be achieved. This imposes a limit of less than 1.2 dB of vertical closure from sinusoidal interference, applied after vertical closure created by filtering."

4. Page 480, modify starting at line 45. "Iterate the filter bandwidth and the settings for sinusoidal interference and/or jitter until all constraints are met including jitter (J), vertical closure (VECP), and pulse shrinkage jitter, and that sinusoidal...".

Response   *Response Status*   **C**

REJECT. Too little jitter is seldom a problem, and there is no need to cap the pulse shrinkage, so placing limits is not necessary.

12:4:8

Cl **52**   *SC* **52.9.10.2**   *P* **479**   *L* **42**   **#** **73**

Thaler, Pat   Agilent Technologies

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

It is not clear that the stressed eye generation is adequately specified. Trials with the test procedure show that there still is excessive variability in test signals produced by generators following the procedure.

SuggestedRemedy

Tighten requirements for stressed eye generation to produce a signal that produces a controlled stress.

Response   *Response Status*   **C**

REJECT. This is the same as previous comments submitted and provides no additional technical data supporting the proposed change. Previous position of the comment resolution group holds. See D4.3 #99102.

14:3:1

Cl **52**   *SC* **52.9.10.2**   *P* **479**   *L* **42**   **#** **79**

Lindsay, Tom   Stratos Lightwave

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

0.1% of 1% of what? We want to require this to be 1% of the total number of hits, not pk-pk width.

SuggestedRemedy

Mostly per Piers - "For this test, VECP is determined by using the 99.9th percentile of the total hits within the histogram of the lower half of the signal and 0.1th percentile of the total hits within the histogram of the upper half of the signal. Jitter is determined by using the 1st and 99th percentiles of the total hits within the jitter histogram.

Response   *Response Status*   **C**

REJECT. See #15.

Cl **52**   *SC* **52.9.10.2**   *P* **479**   *L* **52**   **#** **17**

Dawe, Piers   Agilent

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

Missing word

SuggestedRemedy

but this increases

Response   *Response Status*   **Z**

Withdrawn.

Cl **52**   *SC* **52.9.10.2**   *P* **480**   *L* **20**   **#** **80**

Lindsay, Tom   Stratos Lightwave

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

A0 should be italicized.

SuggestedRemedy

per comment.

Response   *Response Status*   **C**

ACCEPT.   Edit to be submitted as a recommended change to the IEEE publication editor.

Cl **52**   *SC* **52.9.10.2**   *P* **480**   *L* **29**   **#** **81**

Lindsay, Tom   Stratos Lightwave

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

We really want to minimize such jitter. Clarify that residual jitter should be minimized.

SuggestedRemedy

Change "not to exceed" to "less than".

Response   *Response Status*   **Z**

Withdrawn.

Cl **52**   *SC* **52.9.10.2**   *P* **481**   *L* **12**   *#* **72**

Thaler, Pat   Agilent Technologies

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

It seems that my comments on this figure last time were misunderstood so I will try to be
more clear this time.
Why is the rectangle for jitter histogram so much wider than the apparent jitter?
There are two rectangles below "vertical eye closure histogram" but they are much wider
than the high and low levels of the signal. Why? Also, they are not measures of vertical eye
closure since vertical eye closure is measured by the difference between OMA and A0.

Labels P0 and P1 appear in the picture but aren't referenced in the text of this section.
They are used in 52.9.5 where they are the mean power levels when sending a square
wave which may be close to but not the same as the mean power at the points indicated
on Figure 52-11. If it was the same, 52.9.5 could use other patterns to calculate OMA.

SuggestedRemedy

Make the histogram windows more closely aligned to the areas they measure.
Perhaps rename "vertical eye closure histogram" to something more accurate like power
level histograms.
Delete the rectangles labeled "P0" and "P1" and "Approximate OMA (difference of means
of histograms)" and the associated arrows. Upper and lower lines of OMA may be labeled
P1 and P0 though my preference would be to delete the labels.

Response   *Response Status* **C**

REJECT. The jitter measurement histogram is very representative of the actual
measurement technique. In context, the figure and associated labels are sufficiently clear.
The "approximate OMA" implies that the reader should read the OMA measurement
section (where P1 and P0 are called out explicitly).

10:2:4

Cl **52**   *SC* **52.9.10.2**   *P* **481**   *L* **3**   *#* **18**

Dawe, Piers   Agilent

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

Here is where we need to try to keep the pulse shrinkage within a range.

SuggestedRemedy

Insert after "at least 5 ps": but preferably no more than 15 ps" (peak-peak of pulse
shrinkage jitter).

Response   *Response Status* **C**

REJECT. See #74.

15:2:4

Cl **52**   *SC* **52.9.10.3**   *P* **481**   *L* **54**   *#* **82**

Lindsay, Tom   Stratos Lightwave

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

Not clear.

SuggestedRemedy

Change to "The values for sinusoidal jitter must comply with Table 52-19 at all test
frequencies."

Response   *Response Status* **Z**

Withdrawn.

Cl **52**   *SC* **52.9.11**   *P* **4813**   *L*   *#* **28**

Dawe, Piers   Agilent

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

Addressing Mike's point that we may have implied that the reference receiver may contain
a limiting amplifier and retimer which won't work prior to the transversal filter for 850nm.
This suggested remedy also makes more sense of the new text at beginning of 52.9.11.3.
Also we forgot the CRU.

Mike, hope this is acceptable to you.

SuggestedRemedy

p481 line 4: Replace ", a reference receiver, a transversal filter for 10GBASE-S, and a bit-
error rate tester" with ", and a reference receiver system containing a reference receiver, a
transversal filter for 10GBASE-S, a clock recovery unit and a bit-error rate tester".   (Could
use "test" instead of "reference" instead as in title of 52.9.11.3.)
p483 line 3-8 rename "reference receiver" to "reference receiver system" (three times) and
"receiver to "receiver system".
For consistency, not because it really matters, in 52.9.11.3 p483 line 35, replace "test
receiver" with "reference receiver system".
Fig. 52-12, add dotted box to group reference receiver, filter, CRU, BERT. Label it
"Reference receiver system" or as agreed.

Response   *Response Status* **Z**

Withdrawn.

Cl **52**   *SC* **52.9.11**   *P* **483**   *L* **6**   # **27**
Dawe, Piers   Agilent

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

The TDP measurement section runs for two and a half pages and can confuse because it is not the same as the SONET dispersion penalty measurement, and the "dispersion" tested for is different with BASE-S than L, E. While we do not need to justify our tests (we can just state them), we do need to give the reader a better chance of understanding this one.

SuggestedRemedy

Add "This measurement tests for transmitter impairments with modal (not chromatic) dispersion effects for 10GBASE-S, and for transmitter impairments with chromatic effects for 10GBASE-L and 10GBASE-W.

Response   *Response Status* **C**

REJECT.   This clarification is not essential.

12:0:8

Cl **52**   *SC* **52.9.11.1**   *P* **478**   *L* **21**   # **99105**
Pepeljugoski, Petar   IBM

Comment Type **TR**   *Comment Status* **A**   *D4.1 #139*

The Bessel-Thompson filters built-in the measurement equipment have very loose tolerances. These tolerances are +/- 0.85 dB for frequencies up to 7.45 GHz, and grow up to +/- 4dB at 14.9 GHz. Using these components in the receiver conformance testing adds additional level of variability in the measurement setup.

Simulations show that instead of nominally 2.2 dB, these filters can generate ISI penalties in the range of 1.6 dB to 3.4 dB.

The standard does not prescribe how to correct for these type of errors. For instruments and test implementations where the filters are built-in, it is impossible (or at least very difficult) for the end user to know the magnitude and direction of the error.

For filters built-in the scopes and other instruments it is impossible for the end user to determine the actual bandwidth

SuggestedRemedy

Modify the receiver conformance test setup to eliminate the 7.5 GHz filter used to calibrate the VECP of the stress signal and mandate high bandwidth receiver. Accordingly, modify Tables 52.9, 52.14 and 52.18 (the entry for the required VECP).

Response   *Response Status* **Z**

ACCEPT IN PRINCIPLE. Replace text "The vertical and horizontal eye closures to be used for receiver conformance testing are verified using an
optical reference receiver with a 7.5 GHz fourth order Bessel-Thomson response as specified in G.691 as the ITU-T STM-64 reference." with "The vertical and horizontal eye closures to be used for receiver conformance testing are verified using an
optical reference receiver with a 7.5 GHz fourth order ideal Bessel-Thomson response. Use of G.691 tolerance filters may significantly degrade this calibration."

12:3

Cl **52**   *SC* **52.9.11.3**   *P* **481**   *L* **18**   # **99203**
Lindsay, Tom   Stratos Lightwave

Comment Type **TR**   *Comment Status* **R**   *D4.3 #182*

The requirements for the filter for -S are too stressful. The transversal model is too extreme (equal-magnitude 2-path split), and we have other controlled launch specs. Also, the transversal filter is too difficult to implement.

SuggestedRemedy

Replace the transversal filter with a realizable dispersive filter with equivalent bandwidth.

If this is accepted, then delete all other instances of "transversal".

Response   *Response Status* **Z**

Withdrawn

Cl **52**　　　*SC* **52.9.11.3**　　　*P* **483**　　　*L* **21**　　　# **20**

Dawe, Piers　　　　　　　　　　　Agilent

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

"The clock recovery unit" Which? This is the first time one has been mentioned in 52.9.11.3; this first sentence seems to be a leftover. Also, number on different line to unit.

SuggestedRemedy

Merge sentences: "The clock recovery unit used in the TDP measurement has ..."
Use nonbreaking space.

Response　　　　　　*Response Status* **C**

ACCEPT IN PRINCIPLE. The Clock Recovery Unit (CRU) is the one in the referenced diagram. Edit to be submitted to the IEEE publication editor as recommendation:

Add "(CRU)" after Clock Recovery Unit.

Cl **52**　　　*SC* **52.9.2**　　　*P* **472**　　　*L* **7**　　　# **67**

Ohlen, Peter　　　　　　　　　　Optillion

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

The TIA/EIA-455-127 standard, "Spectral characterization of multimode laser diodes", is really focused on multimode lasers. It presents a method to find the center wavelength and RMS spectral width once all the peaks in the optical spectrum have been measured. For single-mode sources I cannot see how it is useful. I think it is useful for 850. For single mode PMDs, RMS spectral width is not specified, and measuring the wavelength is quite staight forward. TIA-455 does not tell you how to measure the wavelength of a single peak, it starts where the power and wavelength of all peaks are known.

SuggestedRemedy

Add "For 10GBASE-S the" on the beginning of line 9.
Change the PICS item OM2:

Status = "SR:M"
Support = "Yes" and "N/A"

Response　　　　　　*Response Status* **C**

REJECT. Spectral width not measured for 10GBASE-L or 10GBASE-E, and center wavelength can be measured by referenced standard, so this is OK.

Cl **52**　　　*SC* **52.9.6.3**　　　*P* **475**　　　*L* **9**　　　# **6**

Dawe, Piers　　　　　　　　　　　Agilent

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

Wrong step, as Petar pointed out.

SuggestedRemedy

step c)

Response　　　　　　*Response Status* **C**

ACCEPT. Edit is to be provided as recommendation to publication editor.

Cl **52**　　　*SC* **52.9.7**　　　*P* **472**　　　*L* **41**　　　# **99110**

Dawe, Piers　　　　　　　　　　　Agilent

Comment Type **TR**　　　*Comment Status* **R**　　　*D4.1 #116*

Time definitions "measured at the average value of the optical eye pattern" is what we want, but specifying it involves straying too far into the inner workings of oscilloscopes. I had a quick look at this: what they do seems to be good enough, and we have bigger issues to settle.

SuggestedRemedy

Delete "measured at the average value of the optical eye pattern".

Response　　　　　　*Response Status* **Z**

REJECT. The definition is trying to emulate AC coupling which is typical for receivers.

12:2

Cl **52**　　　*SC* **52.9.7**　　　*P* **475**　　　*L* **17**　　　# **7**

Dawe, Piers　　　　　　　　　　　Agilent

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

Is "as per" good formal English?

SuggestedRemedy

per ?

Response　　　　　　*Response Status* **Z**

Withdrawn.

Cl **52**   *SC* **52.9.7**   *P* **475**   *L* **45**   **#** **8**

Dawe, Piers   Agilent

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

This comment is not about measuring jitter: I'm happy to measure that at the average level of the signal.

As I understand it, measuring the average timing of the edges away from the crossing level (waist) introduces a new form of error, because the scope will sample a random proportion of rising edges vs. falling edges, which then occur at different times. For typical sample sizes, this creates a random timing error which largely negates any benefit of moving the expected timing to the desired place. In the example I looked at we were talking 1 ps.

The mask dimensions are not chosen to 1 ps precision.
Mask measurements are disappointingly inaccurate already. This would make it worse.
For us, the mask is not the primary measure of transmitter quality; TDP is.
There is an industry standard way of mask alignment already. It adds cost and confusion to all users, on an ongoing basis, to create another way of doing it.

Greg LeCheminant can elaborate.

In other words, don't re-invent the wheel. We pay test equipment manufacturers to do a good job, let them!

SuggestedRemedy

Delete "measured at the average value of the optical eye pattern".

Response   *Response Status*   **C**

REJECT. This comment is out of the scope of the recirculation. As written, "eye crossing means measured at average value of optical eye pattern" is written in the standard how we would like oscilloscope manufacturers to do the measurement, and how receivers see the signal, but is not how it is currently done on oscilloscopes. The difference is negligible in most cases, but pushes oscilloscope manufacturers to change their implementation over time.

17:1

Cl **52**   *SC* **52.9.8**   *P* **476**   *L* **38**   **#** **62**

Booth, Brad   Intel

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

Remove heading.

SuggestedRemedy

Please don't do this again. :)

Response   *Response Status*   **C**

ACCEPT.   Edit to be submitted as a recommended change to the IEEE publication editor.

Cl **52**   *SC* **52.9.8.XXXX**   *P* **476**   *L* **38**   **#** **76**

Lindsay, Tom   Stratos Lightwave

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

Clause does not appear to be as removed as it says it is...

SuggestedRemedy

Remove.

Response   *Response Status*   **Z**

Withdrawn.

Cl **52**   *SC* **6.2**   *P* **450**   *L* **14**   **#** **99046**

Geoffrey Garner   Lucent Technologies

Comment Type   **TR**   *Comment Status*   **R**   *D4.0 #11 clock tolerance*

For the 10GBASE-LW receive optical specifications a clock toleranceof +/-100ppm is specified in table 52-14. This is more than is required inrelation to the transmitter specification and any possible transport network suchas SDH/SONET, OTN, and also old legacy 10 G WDM transponder equipment. As such,the specification is internally inconsistent and also inconsistent with respect totransport equipment. There is no reason to require the receiver to have a tolerance of+/- 100 ppm because no received signal will ever have a frequency offset greater than+/- 20 ppm. Thereceiver specification should be changed to what is required in line with thetransmitter and transport network specification.

SuggestedRemedy

Add an extra column for 10GBASE-LW with 139.95328 GBd as rate and +/-20ppm as clock tolerance in the same way as it isin Table 52-12.

Response   *Response Status*   **U**

REJECT.

See response to comment 96 of D4.2 for an updated explanation.

Cl **52**   *SC* **6.2**   *P* **450**   *L* **14**   **#** **99045**

Rick Townsend   Lucent Technologies

Comment Type **TR**   *Comment Status* **R**   *D4.0 #35 clock tolerance*

For the 10GBASE-LW receive optical specifications a clock toleranceof +/-100ppm is specified in table 52-14. This is more than is required inrelation to the transmitter specification and any possible transport network suchas SDH/SONET, OTN, and also old legacy 10 G WDM transponder equipment. As such,the specification is internally inconsistent and also inconsistent with respect totransport equipment. There is no reason to require the receiver to have a tolerance of+/- 100 ppm because no received signal will ever have a frequency offset greater than+/- 20 ppm. Thereceiver specification should be changed to what is required in line with thetransmitter and transport network specification.

SuggestedRemedy

Add an extra column for 10GBASE-LW with 139.95328 GBd as rate and +/-20ppm as clock tolerance in the same way as it isin Table 52-12.

Response   *Response Status* **U**

REJECT.

See response to comment 96 of D4.2 for an updated explanation.

Cl **52**   *SC* **7.2**   *P* **453**   *L* **14**   **#** **99047**

Rick Townsend   Lucent Technologies

Comment Type **TR**   *Comment Status* **R**   *D4.0 #34 clock tolerance*

For the 10GBASE-EW receive optical specifications a clock toleranceof +/-100ppm is specified in table 52-18. This is more than is required inrelation to the transmitter specification and any possible transport network suchas SDH/SONET, OTN, and also old legacy 10 G WDM transponder equipment. As such,the specification is internally inconsistent and also inconsistent with respect totransport equipment. There is no reason to require the receiver to have a tolerance of+/- 100 ppm because no received signal will ever have a frequency offset greater than+/- 20 ppm. Thereceiver specification should be changed to what is required in line with thetransmitter and transport network specification.

SuggestedRemedy

Add an extra column for 10GBASE-LW with9.95328 GBd as rate and +/-20ppm as clock tolerance in the same way as it isin Table 52-17.

Response   *Response Status* **U**

REJECT.

See response to comment 96 of D4.2 for an updated explanation.

Cl **52**   *SC* **7.2**   *P* **453**   *L* **14**   **#** **99048**

Geoffrey Garner   Lucent Technologies

Comment Type **TR**   *Comment Status* **R**   *D4.0 #12 clock tolerance*

For the 10GBASE-EW receive optical specifications a clock toleranceof +/-100ppm is specified in table 52-18. This is more than is required inrelation to the transmitter specification and any possible transport network suchas SDH/SONET, OTN, and also old legacy 10 G WDM transponder equipment. As such,the specification is internally inconsistent and also inconsistent with respect totransport equipment. There is no reason to require the receiver to have a tolerance of+/- 100 ppm because no received signal will ever have a frequency offset greater than+/- 20 ppm. Thereceiver specification should be changed to what is required in line with thetransmitter and transport network specification.

SuggestedRemedy

Add an extra column for 10GBASE-LW with9.95328 GBd as rate and +/-20ppm as clock tolerance in the same way as it isin Table 52-17.

Response   *Response Status* **U**

REJECT.

See response to comment 96 of D4.2 for an updated explanation.

Cl **52**   *SC* **Figure 52–11**   *P* **481**   *L* **12**   **#** **19**

Dawe, Piers   Agilent

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

P1 and P0 look like the 1 and 0 levels: if so they should be next to the horizontal lines, not the histogram boxes.

SuggestedRemedy

Move "P1" and "P0" to be next to the horizontal lines.

Response   *Response Status* **C**

ACCEPT. Edit to be submitted as a recommended change to the IEEE publication editor.

Cl **52**   *SC* **Figure 52-6**   *P* **473**   *L*   **#** **83**

Lindsay, Tom   Stratos Lightwave

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

I would gladly offer a more realistic square wave. The present one is pretty bad...

Further more, it is heavily over-filtered compared to the words in step a).

SuggestedRemedy

Separate file. Filter BW used in the simulations is 0.4/UI.

Response   *Response Status* **C**

REJECT. Although not representative of a real waveform, the figure has all the necessary technical information correctly referenced.

Cl **52**   *SC* **Figure 52-8**   *P* **478**   *L* **38**   *#* **25**

Dawe, Piers   Agilent

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

You can write "BERT" on one line rather than vertically:
B
E
R
T. It makes it easier to read and possible to string-search for.

SuggestedRemedy

per comment

Response   *Response Status* **C**

ACCEPT. Edit to be submitted as a recommended change to the IEEE publication editor.

Cl **52**   *SC* **Table 52-14**   *P* **450**   *L* **22**   *#* **99049**

Pepeljugoski, Petar   IBM

Comment Type **TR**   *Comment Status* **R**   *D4.0 #114 stressed receiver*

The stressed receive sensitivity measurement is difficult to implement and calibrate (the input signal for the test). It has not been shown that it can be implemented in a repeatable manner.

SuggestedRemedy

Implement a stressed receive sensitivity measurement with input signal that has the vertical eye closure requirements, but not the jitter requirements (horizontal eye closure).

Response   *Response Status* **Z**

REJECT.   Overtaken by new stressed receiver calibration.

6:1:4

Cl **52**   *SC* **Table 52-10**   *P* **463**   *L* **40**   *#* **35**

Doug Coleman   Corning Cable System

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

Line density above 2000 doesn't match.

SuggestedRemedy

Adjust line density to match.

Response   *Response Status* **C**

ACCEPT. Edit to be submitted as a recommended change to the IEEE publication editor.

Cl **52**   *SC* **Table 52-12**   *P* **462**   *L*   *#* **86**

Lindsay, Tom   Stratos Lightwave

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

Given all the changes since D4.0, I have been reviewing all the power budget values. In the process, I realized that the budget for -L has become negligibly negative. While this in itself is truly negligible, we then set the max TDP for -L to 3.2 dB while most recently requiring negligible BLW or other distortions in the reference Rx used for the TDP measurement. With a 3.2 dB measured TDP, another 0.2 dB or so could be incurred in a real Rx, resulting in another 0.2 dB or so of negative link margin. This is arguably no longer negligible.

As a further note, the rationale for negligible BLW in the reference Rx was used to limit the TDP for -S to 3.9, and has also been used in calculating link margin with real Rx's in the recent -E study. -L is not exempt.

Supporting intuition, this also brings VECP and max TDP more closely in line.

SuggestedRemedy

Change max TDP to 3.0 dB.

Response   *Response Status* **C**

REJECT. This is a reference to an example table.

Cl **52**   *SC* **Table 52-15**   *P* **466**   *L* **35**   *#* **440001**

Brad Booth

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

extra word in footnote needs deletion

SuggestedRemedy

change "than that the" to read "than the"

Response   *Response Status* **C**

ACCEPT. Request that the IEEE editor make this change prior to publication.

Cl **52**   *SC* **Table 52–15**   *P* **466**   *L* **36**   *#* **34**

Dawe, Piers   Agilent

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

The footnote is a shaggy dog story because the reader cannot easily find what attenuation is specified.

SuggestedRemedy

Add "IEC 60793-2-50 specifies 0.30 dB/km for B1.1 and B1.3 fibers at 1550nm. However, cable specifications are different."

Response   *Response Status* **Z**

Withdrawn.

PROPOSED REJECT. This change is not critical, and there is no mistake corrected.

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

Page 21 of 24
Cl **52**   *SC* **Table 52–15**

Cl **52**   *SC* **Table 52-18**   *P* **469**   *L* **1**   *#* **75**

Lindsay, Tom   Stratos Lightwave

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

Table 52-18 specifies 0.5 dB for additional allowable insertion loss. With the new TDP method, this is no longer appropriate.

If it is correct as/where it is, then the min Rx power in Table 52-17 must be decreased by this amount.

SuggestedRemedy

Set addtional insertion loss allowed to 0 dB and set allocation for penalties to 4.1 dB.

Response   *Response Status*   **C**

REJECT.   See #4.

Cl **52**   *SC* **Table 52–18**   *P* **469**   *L* **12**   *#* **4**

Dawe, Piers   Agilent

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

There can't be as much as 0.5 dB additional insertion loss allowed at 30 km because we can't know that the path penalty will change by that much in the last 10 km. (An implementer can offer extra performance outside the standard). Notice that this table is informative.

SuggestedRemedy

0 dB. Increase allocation for penalties from 3.6 to 4.1.

Response   *Response Status*   **C**

REJECT. The comment is out of the scope of the recirculation ballot, and is not a required change (the numbers in the informative budget are imperfect, but not part of the specification).

12:2:2

Cl **52**   *SC* **Table 52-19**   *P* **470**   *L* **6**   *#* **60**

Booth, Brad   Intel

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

Frequency range should be sorted.

SuggestedRemedy

Swap entries in 3rd and 4th rows.

Response   *Response Status*   **C**

ACCEPT. Edit to be submitted as a recommended change to the IEEE publication editor. (ENTIRE rows to be swapped)

Cl **52**   *SC* **Table 52–20**   *P* **470**   *L* **48**   *#* **26**

Dawe, Piers   Agilent

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

"0x" notation is a programmer's trick that we don't need to introduce in an optics clause to be used just twice. It is an obstacle to understanding if the reader does not know what it means (reader may be thwarted, or may read 0 as 0 and x as "don't care").   Other optical PMD clauses 38 and 53 do not use it, nor clauses 4 to 39. It is "legal" because we say so, and it might be appropriate in a digital-oriented treatise. But the explanation will be about 1600 pages away and not referenced here. In this clause, the notation is not appropriate and not required.

If this comment reads familiar, it is, but it has been handled under editorial license through lack of time. This time we should have a light enough load to discuss all the comments.

SuggestedRemedy

Add "in hexadecimal format" in p470 line 36, to read "specified in hexadecimal format in Table 52–20". Delete "0x" (twice).

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE. Request that the IEEE editor, prior to publication, insert a cross-reference to 1.2.5 at the first instance of "0x" in 10GE, and also for this table reading: "See 1.2.5 for hexadecimal notation."

Cl **52**   *SC* **Table 52-25**   *P* **488**   *L* **22**   *#* **52**

Booth, Brad   Intel

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

Update reference.

SuggestedRemedy

Change reference to read ANSI/TIA/EIA-568-B.3-2000.

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE. Request that the IEEE editor change the text to read ANSI/TIA/EIA-568-B.3.

Cl **52**   *SC* **Table 52-25**   *P* **488**   *L* **25**   *#* **50**

Booth, Brad   Intel

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

Update reference.

SuggestedRemedy

Change reference to be ANSI/TIA/EIA-455-204-2000.

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE. Request that the IEEE Editor change the entry to be ANSI/TIA/EIA-455-204.

Cl **52**　　*SC* **Table 52-25**　　*P* **488**　　*L* **26**　　# **51**

Booth, Brad　　　　　　　　　　　Intel

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

Update reference.

SuggestedRemedy

Change reference to read TIA-492AAAC-2002.

Response　　　　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.　Request that the IEEE editor change the text to read TIA-492AAAC.

Cl **52**　　*SC* **Table 52-25**　　*P* **491**　　*L*　　# **85**

Lindsay, Tom　　　　　　　　　　Stratos Lightwave

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

Pointing to footnote e in draft 4.2, there was an editors note to remove the sentence "TIA...... is presently in ballot". D4.3 removed the editors note, but didn't remove the sentence.

Per Mike.

SuggestedRemedy

Remove the sentence.

Response　　　　　　*Response Status*　**C**

ACCEPT.　See response to comment #89.

Cl **52**　　*SC* **Table 52–25**　　*P* **488**　　*L* **25**　　# **29**

Dawe, Piers　　　　　　　　　　Agilent

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

Typo: unwanted "s"?

SuggestedRemedy

Delete?

Response　　　　　　*Response Status*　**C**

ACCEPT.　Edit to be submitted as a recommended change to the IEEE publication editor.

Cl **52**　　*SC* **Table 52-7**　　*P* **461**　　*L* **37**　　# **49**

Booth, Brad　　　　　　　　　　　Intel

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

Reference to TIA-455-203.

SuggestedRemedy

Change to read ANSI/TIA/EIA-455-203-2001.

Response　　　　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.　Request that the IEEE Editor change the entry to be ANSI/TIA/EIA-455-203.

Cl **53**　　*SC* **53.14.3**　　*P* **527**　　*L* **13**　　# **37**

Doug Coleman　　　　　　　　　Corning Cable System

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

61753-1-1 is a published standard, 61753-022-2 is listed as "Publication being printed"; however, it is not currently available for purchase at the website. and 61753-021-2 is in draft form and may not be published in time for release of the 802.3ae document. The 802.3ae document should include reference to TIA/EIA-568 B.3 guidance for connectors as an alternative. TIA/EIA-568 B.3 includes mechanical, environmental and interoperability guidance that is transparent to the referenced IEC standardards.　The TIA/EIA-568 B.3 standard has withstood public scrutiny to provide reiliable connector performance.　Note that TIA/EIA-785, 100 Mb/s Physical Layer Dependent Sublayer and 10 Mb/s Auto-Negotiation on 850 nm Fiber Optics includes reference to TIA/EIA-568 B.3 for connector performance.

SuggestedRemedy

Insert in line 18, Connector designs meeting the requirements of the corresponding connector intermateability standard and the optical connector requirements of ANSI/TIA/EIA 568 B.3.may be used to demonstrate conformance to items a, b, and c.

Response　　　　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.　See response to comment #36.

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

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Cl **53**　　*SC* **53.14.3**

Cl **53**　　*SC* **53.15**　　　　　*P* **52931**　　*L*　　　# **23**

Dawe, Piers　　　　　　　　　Agilent

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

Each conditionally mandatory PICS needs a "N/A" check box.   I think each does not need a "No" box.

SuggestedRemedy

Add "N/A" check box to each conditionally mandatory PICS which does not already have one.

Response　　　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE. Request that the IEEE Editor make the following change prior to publication:
- FN11 and FN12 make support Yes[ ], No[ ], N/A[ ]
- MR2, MR3, MR5, MR6, and MR7 change support Yes[ ], No[ ], N/A[ ]
- LI2 and LI3 change support Yes[ ], No[ ], N/A[ ]

Cl **53**　　*SC* **53.15.3**　　　　*P* **529**　　*L* **26**　　　# **24**

Dawe, Piers　　　　　　　　　Agilent

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

Delay constraints are not optional but conditionally mandatory.

SuggestedRemedy

!INS:M   and add "N/A check box.

Response　　　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE. See response to comment #64.

Cl **53**　　*SC* **53.8.1.1**　　　　*P* **509**　　*L* **31**　　　# **48**

Booth, Brad　　　　　　　　　Intel

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

Update reference

SuggestedRemedy

Change TIA/EIA-455-175A to ANSI/TIA/EIA-455-175A-92.

Repeat on page 516, line 49.

Response　　　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE. Request that the IEEE Editor change the reference to "ANSI/TIA/EIA-455-175" prior to publication.

Cl **53**　　*SC* **Table 53-14**　　　*P* **526**　　*L* **24**　　　# **53**

Booth, Brad　　　　　　　　　Intel

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

Update reference.

SuggestedRemedy

Change reference to read ANSI/TIA/EIA-568-B.3-2000.

Response　　　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE. Request that the IEEE Editor change the reference to "ANSI/TIA/EIA-568-B.3" prior to publication

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