Cl **00** *SC* *P* *L* # 1004

Thaler, Pat

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

This draft and the 802.3an draft are the first time I recall a recirculation being conducted with unresolved comments. The purpose of recirculation is to determine whether a draft is ready for sponsor ballot. A draft with unresolved comments is not ready to go forward to sponsor ballot and should therefore not be recirculated.

SuggestedRemedy

Resolve all comments before doing any future recirculations. Doing otherwise is a bad practice that abuses the voter's time.

Proposed Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
The TF chair and editor were advised that the requirement is that the resolution committee consider all comments, but the TF chair will ensure that all comments are resolved in the future.

Cl **00** *SC* *P* *L* # 1005

Thaler, Pat

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

In addition to the lack of consensus on the unresolved comments, there are quite a few unsatisfied comments where the task force response is inadequate. For example, comments 6, 115, 116, 160, 173, 255 (and the family of other comments that reference the response to 255), 200, 205, 216. 251, 276, 285, 300, 303, 433, 435.

I think this also applies to comment 166 where the explanation in the response where the explanation seems to say that some change to stressors is pending but not made yet, but the relationship of the response on stressors to the comment which requests a length reduction isn't entirely clear.

SuggestedRemedy

If things are broken in a draft (e.g. incomplete, incorrect, or non-interoperable), they need to be fixed before forwarding the draft even if the commentor who points out the problem doesn't know how to fix them and therefore is unable to submit a specific change. Therefore, responses that reject a comment solely with ""specific change to document not suggested"" ""no consensus for change"" are inadequate.

We do expect technical feasibility so comments that say technical feasibility has not been shown are valid (e.g. 115, 160) and deserve a valid response. For example, an acceptable response might say that operation to the desired confidence level (e.g. 95%) has been shown, preferably with reference to simulation or test presentations that substantiate that statement.

One can add to that response that no specific change was suggested, but there also needs to be a part of the response that says ""it ain't broken"". Lack of a sufficiently detailed change is a good reason to turn down an attempt to ""improve"" the draft, but it doesn't justify failing to fix a broken one.

Provide adequate responses to all unsatisfied comments - e.g.:
The draft is correct as it stands because ... <and the comment doesn't suggest a specific remedy> or <and there is no consensus for change>
Feasibility has been adequately shown, see presentations xxxx and yyyy.
Comment (e.g. 279) does not identify a problem, only a fear that a problem may be found in the future, therefore no change is necessary.
for a comment such as 285: The standard is not meant to be a test implementation spec. The signal quality to be measured is clearly defined, it is up to the implementor of the test to design the test to give adequate accuracy for the implementor's desired confidence level and based on the specifics of the test implementation.
etc.

Proposed Response *Response Status* **W**

ACCEPT.
Resolution committee agrees with the sentiment of the commenter, and will endeavour provide fuller explanations for rejected comments, for this, and future revision cycles.

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

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Comment ID # **1005**   08/08/2005 11:33:15

D2.0 comments 2, 115, 160 will be included with D2.1 recirc.

Cl **44**   *SC* **44.5**   *P* **16**   *L* **50**   # 1018

Thaler, Pat

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

Table 44-4. With the change made to 68.5, this chart doesn't tell a complete story and doesn't make it easy to choose between LX4 and LRM.

SuggestedRemedy

Add a footnote to indicate that ensured coverage to these distances depends on is provided for some types (or bandwidths) of the 50 and 62.5 u fiber and reference 68.5 for details. I believe that footnote would also apply to LX4 for 50 u fiber, so a reference to 53.6 would also be appropriate.

Proposed Response   *Response Status*   **W**

REJECT.
The committee believes that Table 44-4 is not intended to tell a complete story, nor to offer guidance between PMDs. It has to fit within ISO IEC11801 style.
Yes: 24
No: 4
Abstain: 9

Cl **68**   *SC* **68.4.1**   *P* **25**   *L* **52**   # 1031

Swanson, Steve

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

Since FDDI fiber is not specified to support a center launch (and current analysis suggests that greater than 60% of the links would fail the center launch), the IEEE Draft P802.3aq should require the mode-conditioning patch cord per 38.11.4 as the specified launch. This is the same launch that has been previously specified for 1000BASE-LX on multimode fiber and 10GBASE-LX-4 on multimode fiber in the current Ethernet standard. If the Working Group elects to include the center launch, it should be included only as part of an informative annex.

SuggestedRemedy

Replace: ""The optical launch condition at TP2 is either the preferred launch or the alternative launch (at the userÆs choice), as specified in 68.5.1. A compliant PMD shall support both options. The launch is selected by using either a single-mode fiber offset-launch mode-conditioning patch cord or a regular multimode fiber patch cord inserted between the MDI and TP2, consistent with the media type.""

With: ""To ensure that the requirements of 68.5.1 are met, the 10GBASE-LRM transmitter output shall be coupled through a single-mode fiber offset-launch mode-conditioning patch cord as defined in 38.11.4""

Proposed Response   *Response Status*   **U**

REJECT.
This topic has been debated at length during previous revision cycles and there is clear consensus within the Task Force in favour of using both Offset Launch and Center Launch for 62.5um and 50um OM2 fiber types.

Comments, and voting results, on this topic during Draft 1.0 cycle are as follows:

Comment 52 - Include both offset and centre launch encirlced flux specs for 62.5um MMF - For: 31; Against: 0; Abstain: 6

Comment 56 - Include both offset and centre launch encirlced flux specs for 50um, OM2 MMF - For: 30; Against: 0; Abstain: 10

Yes:25
No: 6
Abstain: 8

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

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Comment ID # **1031**   08/08/2005 11:33:15

Cl **68**   *SC* **68.5**   *P* **28**   *L* **50**   # 1035

Thaler, Pat

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

The relationship of Table 68-2 and Figure 68-5 is unclear. I think there should be some transition statement to make it clear that the FDDI fiber is a different fiber type from the fibers addressed in the Table. Also the text that references the figure uses a couple of forms of ""legacy multimode fiber"" to describe the fiber but the figure calls it FDDI-grade multimode fiber which gives a more specific understanding of the fiber type.

SuggestedRemedy

Insert after ""For information:"" ""Legacy 62.5/125 fiber that was installed to meet the requirements of FDDI does not necessarily provide the characteristics of fiber types in Table 68-2.""

Proposed Response   *Response Status* **W**

ACCEPT IN PRINCIPLE.
Change title of Figure 68-5 to "Percentile coverage of randomly selected 62.5 um 160/500 and 62.5um 200/500 multimode fibers"

Cl **68**   *SC* **68.5**   *P* **28**   *L* **50**   # 1036

Diab, Wael

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

The note and figure (68-5) on coverage are not consistant with previous optical clauses. It is not clear to me that this adds any value but introduces confusion.

SuggestedRemedy

Please delete the informative note and figure 68-5

Proposed Response   *Response Status* **W**

ACCEPT IN PRINCIPLE.

Reject
In order to maintain technical integrity of standard it is necessary to set customer expectations relative to past optical PMDs.
Yes: 32
No: 2
Abstain: 6

Reconsideration (approved by acclamation)
Straw poll conducted on the following 4 proposed responses. Voting results shown next to each response heading.

Diab Response 39 votes
  Abhijit's stressors from comment 1063;
  In Table68-2: 220m for both 62.5um fibers and for 50um OM2.
  Remove coverage figure and accompanying text

Bhoja Response 18 votes
  Use stressors from Abhijit's comment for normative test
  (Coverage figure remains)

Shanbhag Response 15 votes
  Use stressors from Abhijit's comment for normative test
  (Coverage figure remains)
  Add informative annex with stressors from Sudeep's comment

Ghiasi Response 15 votes
  Use stressors from Abhijit 1063 for split symmetric, 4.11 dB
  Pre Ewen Channel 16, and
  4.2 dB Post
  Remove figure

Motion on Diab Response:
Moved: Wael Diab
Seconded: Jan Peeters Weem
Accept in principle all comp rx stress test stressor comments with:
  Abhijit's stressors from comment 1063;

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

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Comment ID # **1036**   08/08/2005 11:33:15

In Table68-2: 220m for both 62.5um fibers and for 50um OM2.
Remove coverage figure and accompanying text
Editor has authority to implement resulting changes.

Yes: 45
No: 3
Abstain: 3

Cl **68**   *SC* **68.5**   *P* **28**   *L* **50**   # 1037

Swanson, Steve

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

The addition of the informative text and Figure 68-5 into D/2.1 appear to suggest that the specified ranges in Table 68-2 for all fibers (except 50um 400/400 which is already noted as conservative) cannot be supported while meeting the stated priorities of cost, heat, size and time to market as well as the long-standing and widely accepted precedents of utilizing worst case design philosophy and plug and play operation. Since it is not clear how the Working Group will resolve the comments related to the stressed receiver sensitivity, the addition of the text and Figure 68-5 seems premature. In any event, it is recommended that the standard specify normative operating ranges based on stressors that can be supported in a robust manner and include all information on statistical coverage in an informative annex to clause 68.

SuggestedRemedy

Add a footnote tied to the operating range of all fibers in Table 68-2 (except 50um 400/400) that reads: ""For other distances, see Annex 68.x for information on the tradeoffs between operating range and coverage estimates for the installed base of legacy multimode fiber.""

Replace: ""For information: In order to provide a balance between support for installed legacy multimode fiber and lower power, higher density and lower cost, 10GBASE-LRM trades off the percentile coverage as a functionof operating range. This trade-off is illustrated in Figure 68û3. From Figure 68û3 it can be seen that 10GBASE-LRM supports the vast majority of legacy 62.5/125 multimode fiber with length of 300 m and very nearly all legacy 62.5/125 multimode fiber of length less than 220 m.""

With: ""For information: In order to provide a balance between support for installed legacy multimode fiber and lower power, higher density and lower cost, users of 10GBASE-LRM may consider the tradeoff between the estimated coverage as a function of operating range. This trade-off is illustrated in Figure 68û3.""

Modify Figure 68-5 to include duplex coverage numbers for the mode-conditioning patch cord launch. If it is decided to provide informative information on an alternate launch (e.g. center launch), include those numbers as well as the statistics of a dual launch (i.e., the graph should include all launch statistics not just the dual launch). Move this text and Figure 68-5 to a new informative annex.

Proposed Response   *Response Status* **W**

ACCEPT IN PRINCIPLE.
See response to comment 1036.

Cl **68**   *SC* **68.5**   *P* **29**   *L* **18**   # 1040

Thaler, Pat

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

If (f) is an editor's note, will it be removed before publication? Usually that statement is included. The note content won't be appropriate for after publication since it mentions the task force.

More importantly, the content of the note appears to indicate that confidence in this number is lower than for the other numbers in the table and that this fiber type is not as important as the others.

SuggestedRemedy

My preference is to either delete the fiber type or, if the type is believed to be important, get the missing data to produce a number similar in confidence to the other figures in the table. If neither of these is done, then at a minimum provide a note that indicates this is a more conservative figure than the others.

Proposed Response   *Response Status* **W**

ACCEPT IN PRINCIPLE.
Replace the footnote with: "This operating range is conservative."

Cl **68**   *SC* **68.5.1**   *P*   *L*   # 1042

Dallesasse, John

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

See Nick Weiner's Comment #167 in recirculation package.

SuggestedRemedy

Per Weiner Comment #167.

Proposed Response   *Response Status* **U**

REJECT.
This is a proposal to reconsider a resolved comment.
Motion to reconsider
Moved: John Dallesasse
Seconded: Robert Lingle Jr.
Yes: 7
No 16
Abstain: 0
Motion fails

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

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Comment ID # **1042**   08/08/2005 11:33:15

Cl **68**   *SC* **68.5.1**   *P* **31**   *L* **34**   # 1047

Swanson, Steve

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

Despite the current thinking that forcing the end user to experiment with two launches to achieve a functional link is acceptable, the standard should specify what is required to guarantee an operable link. Users may elect to try alternative launches but it is unacceptable to encourage it in the normative part of the standard.10GBASE-LRM is no different than 1000BASE-LX and 10GBASE-LX-4 in that all three PMDs are intended to support the installed base of multimode fiber with a transmitter that the fiber is not designed to support. Both 1000BASE-LX and 10GBASE-LX-4 REQUIRED the mode-conditioning patch cord to ensure that the operating range could be met; there is no reason 10GBASE-LRM should be any different.

SuggestedRemedy

Change ""Optical launch for 62.5 Ám fiber:"" to read ""Optical launch for OM1 and 160/500 62.5 Ám fiber:"" to be consistent with text used for OM2 fiber.

Delete ""Preferred for both OM1 and OM2 fibers.

Delete ""Encircled flux for alternative launch"" on lines 36 and 37 for 62.5um fiber and on lines 41 and 42 for OM2, 50um fiber as well as the associated specifications in the second column for both OM1 and OM2 fibers.

Proposed Response   *Response Status* **U**

REJECT.
See response to comment 1031.
Yes: 25
No: 5
Abstain: 7

Cl **68**   *SC* **68.5.1**   *P* **32**   *L* **2**   # 1049

Swanson, Steve

Comment Type **ER**   *Comment Status* **R**

Assuming acceptance of previous comments, footnote e is no longer required.

SuggestedRemedy

Delete footnote e.

Proposed Response   *Response Status* **U**

REJECT.
See response to comment 1031.
Yes: 28
No: 5
Abstain: 4

Cl **68**   *SC* **68.5.1**   *P* **36**   *L* **16**   # 1050

Dudek, Mike

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

Table 68-4. This is further clarification of the comment 117 from draft 2.0 that had a lack of consensus.

What matters to the Receiver is the signal to noise ratio of the equalized signal (plus a maximum amount of distortion). The existing specification assumes OMA of the Tx will represent this quantity well, however this has been found not to be true. A more accurate measure of this quantity is (OMA - TWDP) and this quantity also has the advantage that inaccuracies in the measurement of OMA cancel out. We should use this more accurate measurement for the minimum required output signal amplitude. Also there is no need to restrict the average optical power so tightly.

SuggestedRemedy

Table 68-4 page 36.
Change Launch power in OMA min to -9.5dBm +TWDP. (but no less than -5.5dBm)
Change Average power min to -7.5dBm

Change Fig 68-11 (page35) to the accompanying figure. (without the differentiation of colors which are included to show the change from the existing figure).

Table 68-5 page 37.
Change Lowest power in OMA to -7.5dBm
Change Lowest Average power to -9.5dBm.

Proposed Response   *Response Status* **U**

REJECT.
TWDP has not been shown to provide an approximation of the power penalty experienced when using a real receiver. The committee would wish to see evidence that the TWDP does provide this approximation before agreeing to the proposed change.
Yes: 16
No: 2
Abstain: 2

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

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Comment ID # **1050**   08/08/2005 11:33:15

Cl **68**   *SC* **68.5.1**   *P* **36**   *L* **37**   # 1052

Kolesar, Paul

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

Simulations of link coverage for center launch have been based on a uniform distibution of lateral offsets between the laser beam and the fiber core center that ranges from 0 to 3um. However, per Kropp and Bottacchi contribution to Task 2 of December 2004, the center launch encircled flux specification permits offsets as large as 6um. This results in incorrect coverage calculations that are to be reflected in Figure 68-5 of clause 68.5.

SuggestedRemedy

Run simulations of center launch and dual launch coverage with uniform distribution of lateral offset between laser and fiber core center ranging from 0 to 6um. Represent these results, instead of those using the current 0 to 3um range, in the coverage calculations that will be reflected elsewhere in the document.

Proposed Response   *Response Status*   **U**

REJECT.
The TP2 group have modelled launches and discussed them at length during the task force process. It is believed that the launch modelling is already adequate for development of this standard.
Yes: 22
No: 9
Abstain: 5

Accept in principle, changing 6um to 4.5um
Yes: 11
No: 22
Abstain: 8

Reject.
It is not clear to the committee that the document should be changed at this time. The commenter and others are encouraged to perform simulations and advise the committee if the results support changes to the document
Yes:30
No: 0
Abstain: 3

Cl **68**   *SC* **68.5.1**   *P* **36**   *L* **38**   # 1053

Kolesar, Paul

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

Simulations of link coverage for center launch have been based on a uniform distibution of lateral offsets between the laser beam and the fiber core center that ranges from 0 to 3um. However, the center launch encircled flux specification permits offsets as large as 6um per Kropp and Bottacchi contribution to Task 2 of December 2004. This results in incorrect coverage calculations that are to be reflected in Figure 68-5 of clause 68.5.

SuggestedRemedy

Modify the encircled flux specifications to be consistent with the current simulations. Specifically change the alternate launch specifications for 62.5um fiber to read:
30% within 4.5 um radius;
86% within 10.5 um radius.
And change the alternate launch specifications for OM2, 400/400 MHz-km, and OM3 50um fiber to read:
30% within 4.0 um radius;
86% within 9.5 um radius.

Proposed Response   *Response Status*   **U**

REJECT.
Standard, as written, does not allow 6um offset, as suggested by commenter, due to constraints on coupling ratios between single mode launch (for use of mode conditioning patch cord) and multi-mode launch (for direct launch into MMF) implied by TP2 tx OMA limits.
Yes: 24
No: 5
Abstain: 6

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

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Comment ID # **1053**   08/08/2005 11:33:15

Cl **68**   *SC* **68.5.3.1**   *P* **32**   *L* **24**   # 1066
Dallesasse, John

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

Clause 68.5.3.1 is still very weak. Link adaptation time and adaptation penalties have not been specified by this document, and the body of work to support the assertion that the time variation of the channel is limited to 10 Hz, while a good starting point, is very thin. This is a complex topic that cannot be dismissed based upon a fairly limited data set. If the group is not willing to specify a test for adaptation time, it needs to at least highlight that the PHY vendor should provide a specification for it. The approach suggested below is consistent with what has been done in the past, such as in Clause 52.11, where manufacturers are encouraged to provide a specification defining the range of environmental conditions over which normative requirements are met.

SuggestedRemedy

Add sentance to end of section as follows:

""It is further recommended that manufacturers indicate in the literature associated with the PHY the minimum adaptation time over which the normative specifications in this clause are met.""

Proposed Response   *Response Status* **U**

REJECT.
The committee believes that stronger statements on dynamic performance, beyond that already in Clause 68, are not required and are beyond the scope of Clause 68.
Yes: 21
No: 5
Abstain: 6

Cl **68**   *SC* **68.6**   *P* **40**   *L* **35**   # 1072
Thaler, Pat

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

What is the purpose of the editor's note? It appears to indicate that this value is uncertain.

SuggestedRemedy

Values should be determined before balloting a draft. If any work is necessary to validate this value, please complete before doing further ballots and remove the note.

Proposed Response   *Response Status* **W**

ACCEPT.

Cl **68**   *SC* **68.6.6**   *P* **39**   *L* **48**   # 1089
Dudek, Mike

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

The present TWDP code uses a very long equalizer as the reference receiver. This can equalize transmitter impairments that realistic equalizers cannot. Also due to the finite length PRBS pattern used in the test(511 bits) some non-linearities in the transmitter waveform which equalizers cannot equalize will be converted into time shifted linear interfers which the very long equalizer will equalize. Vivek Telang presented a paper at the TP2 conference call on 7/12/05 that showed that there was better correlation between a wide variety of realistic equalizers than between the realistic equalizers and the very long equalizer. We should use a shorter equalizer for the reference receiver. The choice of which shorter equalizer does not seem to make much difference based on Vivek's presentation and I propose a 14,5 (14 feedforward and 5 feedback). The TWDP allowed penalty needs to be adjusted as it now includes the implementation penalty of the shorter equalizer. I am suggesting a change that is equivalent to the difference in TWDP for the 47ps Gaussian pulse for the pre-cursor case between the very long equalizer and the 14,5 equalizer, (0.51dB) plus an additional allowance of 0.29dB for realistic transmitters. (see separate comment)

SuggestedRemedy

Page 39 line 48 change ""equalizer with many taps"" to ""equalizer with 14 feedforward taps and 5 decision feedback taps.
Section 68.6.6.2 Associated changes to the TWDP code.
Table 68-4 page 36 line 31. change ""TWDP Max 5dB"" to ""TWDP Max 5.8dB""
page 68 line 10 change ""with 100 feedforward taps (at T/2 spacing) and 50 feedback taps"" to ""with 14 feedforward taps (at T/2 spacing) and 5 feedback taps""
page 68 line 25 (change W(-25),W(-24.5),...W(24.5)"" to ""W(-7),W(-7.5),...W(6.5)""
page 68 line 30 Change ""B(1),B(2),...,B(50)"" to ""B(1),B(2),...,B(5)""
page 68 line 32 Change ""50 anticausal taps and 50 causal taps"" to ""7 anticausal taps and 7 causal taps""

Proposed Response   *Response Status* **U**

REJECT.
Committee recognizes that there is interest in further study of this topic. However, evidence that proposed changes are required has not been presented.
Yes: 29
No: 6
Abstain: 10

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

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Comment ID # **1089**   08/08/2005 11:33:15

Cl **68** *SC* **68.6.6.2** *P* **42** *L* **40** # 1100

Diab, Wael

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

Remove the Matlab code. Maintaining Matlab code over time may be difficult if something underlying to the matlab changes so that the code does not comply.

SuggestedRemedy

Replace with Math functions.

Proposed Response *Response Status* **W**

REJECT.
After extensive discussion at the June meeting, it was decided that the benefits of using MATLAB code outweight the disadvantages. The benefits being that the code is: testable; unambiguous; compact; open source alternatives exist, with which the code runs correctly; useful to implementers. Also, there is precedent in 802.3 standards for the use of MATLAB code.

Cl **68** *SC* **68.6.9.1** *P* *L* # 1116

Dallesasse, John

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

See Paul Kolesar's comment #333 in recirculation package.

SuggestedRemedy

Per Kolesar's comment #333, or George's comment 369.

Proposed Response *Response Status* **U**

REJECT.

This is a proposal to reconsider a resolved comment.

21st July 2005
Motion to reconsider Draft 2.0 comment 333 (here as 1117)
Moved: Paul Kolesar
Seconder: John Abbott
Motion withdrawn by mover and seconder.

Cl **68** *SC* **Previous comment 116** *P* *L* # 1146

Lindsay, Tom

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

There are several reasons for implementing a finite length EQ in TWDP.
1. In a straw poll in London, the committee made it clear that finite EQ lengths should be used in TWDP. Specifically,
2. Finite EQ length would better represent practical equalizers.
3. TP3 recommends verification of the stress level via use of TWDP. Reflections are quite possible in TP3 tester setups, and a very long equalizer would compensate these reflections, potentially causing TWDP to underestimate the stress imposed on practical receivers.
4. Nonlinearities can appear as linear distortions shifted by some length of time. A long equalizer will more likely span these shifts and unfairly correct for them, whereas as a practical length receiver may not be able to.
5. It is known that pre-cursor pulse shapes are more difficult to equalize for finite length equalizers, and so the standard should discourage such pulse shapes and even encourage pre-compensation for such pulse shapes. A finite EQ in TWDP would naturally do that.

SuggestedRemedy

Implement a finite length EQ with 14 T/2 feedforward and 5 T feedback taps into the TWDP algorithm. MATLAB code can be made available if this is accepted.

Proposed Response *Response Status* **U**

REJECT.
Committee recognizes that there is interest in further study of this topic. However, conclusive evidence that the proposed changes are required has not been presented.
For: 25
Against: 4
Abstain: 8

Cl **68** *SC* **Previous comment 173** *P* *L* # 1149

Lindsay, Tom

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

This comment (eye mask coordinates) was not satisfied, but the work must still be done.

SuggestedRemedy

Keep this comment open until satisfied.

Proposed Response *Response Status* **U**

REJECT.
Proposal to reconsider Draft 2.0 comment 173 (now 1044), which was rejected.
Evidence that a change is needed has not been presented.

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

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Comment ID # **1149** 08/08/2005 11:33:15

Cl **68**   *SC* **Previous comment 216**   *P*   *L*   # 1150

Lindsay, Tom

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

This has not been resolved and should be decided.

SuggestedRemedy

Keep this comment open until satisfied.

Proposed Response   *Response Status* **U**

REJECT.
Draft 2.0, comment 216 was resolved.
Alternatives to OMA are being investigated by members of the committee, however
conclusive evidence that a change is warranted has not been presented.

Cl **68**   *SC* **Previous comment 251**   *P*   *L*   # 1151

Lindsay, Tom

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

OMA measurement is not an exact science, even if done within the TWDP code. However,
doing it in the code will improve consistency across the industry.

SuggestedRemedy

Add OMA extraction into TWDP code. Also, extract the decision threshold from the mean of
waveform.

MATLAB code can be made available if the committee wants to do this.

Proposed Response   *Response Status* **U**

ACCEPT IN PRINCIPLE.

Vote to reject, with explanation:
Task Force agrees that suplementing the TWDP code with an OMA calculation may be
helpful to users. However, Task Force has not been shown evidence that existing algorithm
does not provide acceptable results.
Yes:18
No: 9
Abstain: 12

Vote to Accept In Principle
With new code, to be provided by Piers Dawe.
Yes: 21
No: 5
Abstain: 13

Petar, Jan, Jim McVey, Tom, Norm and Sudeep have all agreed to review changes to code
prior to publication.

Committee agrees that new code will used provided at least 75% of reviewes respond
positively.

4th August 2005:
Extract from email received from Tom Lindsay (commenter):

.. A group of Jim, Petar, Piers, Norm, and myself have met several times by phone and
have shared numerous emails and data. Our objective has been to discuss and decide
about the automation of OMA in TWDP via the code that has been submitted by Piers ..
.. Today, we decided by a vote 3N and 2Y to not include Pier's code in D2.2. We assume
that Jan and Sudeep are non-votes or abstains. So, please proceed in your release of D2.2
without the automation code.

Note from editor:
No code changes made following this comment.

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

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Comment ID # **1151**   08/08/2005 11:33:15

IEEE P802.3aq Draft 2.1 Comments

Cl **68** *SC* **Previous comment 393** *P* *L* # 1154

Lindsay, Tom

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

This comment was submitted to help ensure interoperability between TP2 and TP3, which was a goal presented back in October and November 2004. At this point in time, I don't believe we have yet determined how to margin the implementation penalties between TP2 and TP3.

SuggestedRemedy

Keep this comment open until satisfied.

Proposed Response *Response Status* **U**

REJECT.
Draft 2.0, comment 393 was resolved.
Finite equalizer representations are being investigated by members of the committee, however conclusive evidence that a change is warranted has not been presented.

Cl **68** *SC* **Previous comment 413** *P* *L* # 1155

Lindsay, Tom

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

When Qsq was 11.5, the TP3 tester noise caused more jitter than expected during normal operation. Recently, Qsq was reduced to about 1/2 of its previous value. reducing the jitter by roughly the same amount. If TP2 jitter is allowed to increase per previous comment 413, these two changes may result in the case where the jitter being applied to TP3 may not sufficiently represent the jitter allowed by TP2.

SuggestedRemedy

Determine if TP3 tester jitter adequately represents the uncorrelated jitter allowed by TP2.

Proposed Response *Response Status* **U**

REJECT.

Draft 2.0, comment 413 appears here as comment 1170.

20th July 2005:
No evidence shown that change to spec needed.

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

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Comment ID # **1155**
08/08/2005 11:33:15