Cl **00**   *SC*   *P*   *L*   **#** **33**

Stoltz, Mario   ChipIng.de, an Intel co

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

Mixed usage of "baud" (20 occurrences) and "b/s" (many, many more) in the draft does not seem to follow any plan.

SuggestedRemedy

Replace all "bauds" with "b/s" unless there actually WAS a plan that simply escaped the commentor's limited viewfield.

Proposed Response   *Response Status* **C**

REJECT.

There are cases where baud and b/s do imply different things. The editor respectfully requests that the commenter re-submit a comment in the next ballot period that indicates where this wording should be changed.

Cl **00**   *SC*   *P*   *L* **48**   **#** **507**

Law, David J   3Com

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

The address for the IEEE on the front sheet is incorrect

SuggestedRemedy

Please correct the address to read:-

3 Park Avenue,
New York,
NY 10016-5997,
USA

Proposed Response   *Response Status* **C**

ACCEPT.

Change incorporated in D2.2.

Cl **00**   *SC* **00**   *P*   *L*   **#** **664**

William G. Lane   CSU, Chico

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

There is a general inconsistency in the way clock frequencies and transmission rates are specified in the various clauses, including for example:

Clause 46
9.58 Gb/s STS-192 payload rate (see 46.1.3),
156.25 MHz+/-0.01% (46.3.1.1 -- TX_CLK at the XGMII),
nominally 156.25 MHz (46.3.2.1 - RX_CLK at the XGMII),

Clause 47
nominal rate of 3.125 Gbaud (47.1.3)
3.125 Gbaud +/-100ppm (47.3.3)

Clause 48
3.125 Gbaud +/-100ppm (47.3.3)
312.5 MHz +/-100 ppm (48.3.1.1)
nominal rate of 312.5 MHz (100 ppm, as governed by frequency and tolerance of XGMII TX_CLK (48.3.2.1.2)

Clause 49
644.53 Mtransfers/s and 599.04 Mtransfers/s (49.1.5)

Clause 50
payload capacity of STS-192c / VC-4-64c, i.e., 9.58464 Gb/s. (50.1)
9.95328 Gb/s effective data rate (50.1.2)
nominal rate of 599.04 MHz corresponding to the STS-192c payload rate of 9.58464 Gb/s (50.2.1..2)

Clause 51
nominal clock rate of 644.53125 MHz and 622.08 MHz in 10GBASE-R and 10GBASE-W operations, respectively. (51.4)
9.95328Gb/s (10GBASE-W family) or 10.3125Gb/s (10GBASE-R family) bit clock (51.4)

Clause 52
10.3125 +/- 100 ppm (table 52-6)
9.95328 +/- 100 ppm (table 52-6)

Clause 53
2.48832 GHz bit clock to generate the 622.08 MHz data-group clock (53.1.3)
rate of 2.48832 GHz (53.3.2)

Clause 54
3.125 GBd +/-100ppm (table 54-7)
2.48832 Gbd +/-100ppm (table 54-11)

The problem is more than just terminology. The number of significant digits used in defining transfer rates varies from 4 to 8 for values that are all supposedly derived from the same TX_CLK which has a specified tolerance of +/-0.01%.

TYPE: TR/technical required T/technical E/editorial   COMMENT STATUS: D/dispatched A/accepted R/rejected   SORT ORDER: Clause, Page, Line, Subclause   Page 1 of 144

RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *Cl* **00**   *SC* **00**

SuggestedRemedy

The editors need to agree as a group on:

A consistent terminology, when and when not to use nominal, whether to use Hz, b/s, or Baud
How to specify tolerance values for transfer rate - % or ppm.
The number of significant digits that should be used in representing these rates.

Proposed Response   *Response Status*   **C**

REJECT.

The Editor-in-Chief rejected this comment because the comment doesn't provide direction and relies on the editors to determine the terminology and significant figures. The Editor-in-Chief will re-submit this comment in the next ballot cycle, on behalf of the commenter, to provide a specific direction that the editors should take.

Cl **00**   *SC* **00**   *P*   *L*   **#** **638**

William G. Lane   CSU, Chico

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

The representation of logic values zero and one are sometimes represented in lower case and other times in upper case.

SuggestedRemedy

Chose a consistent way for all editors to use.

Proposed Response   *Response Status*   **C**

REJECT.

ONE and ZERO are used as a variable expression; whereas, zero and one are used as a logic value. The editor respectfully requests that the commenter review the use of these in the next draft and submit comments in the next ballot cycle to indicate which are used incorrectly.

Cl **00**   *SC* **00**   *P***00**   *L*   **#** **301**

Christensen, Benny   Intel / GIGA

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

Several clause headlines (like clause 47) and in-line text use the spelled 'TEN' Gigabit ..... for XSBI or XAUI where 'X' is the acronym for '10'Definition in clause 1.4.xxx use '10' Gigabit Attachment Unit (XAUI)not the spelled version.

SuggestedRemedy

change all 'Ten' to '10' as per definition

Proposed Response   *Response Status*   **C**

ACCEPT.

Change incorporated in D2.2.

Cl **00**   *SC* **00**   *P***00**   *L*   **#** **289**

Christensen, Benny   Intel / GIGA

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

X-referencing between/across major clauses may not be correct due to renumbering in the individual clauses.

SuggestedRemedy

Fix it.

Proposed Response   *Response Status*   **C**

REJECT.

Editor respectfully requests that commenter re-submit this comment in the next ballot cycle, and that the commenter indicate the incorrect cross-references.

Cl **00**   *SC* **53**   *P***456**   *L***1**   **#** **587**

Rich Taborek   nSerial Corporation

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

No electrical interface and associated jitter specifications is specified for the LW4-PMA as is the case for the LX4-PMA in clause 47. Clause 47 specs are not applicable to clause 53 as they apply to 8B/10B transmission code only.

SuggestedRemedy

The LW4-PMA is incomplete and should be deleted.

Proposed Response   *Response Status*   **C**

ACCEPT.

Move to accept response and remove all technical content that exclusively supports 10GBASE-LW4, and make all editorial changes necessary to remove references to 10GBASE-LW4.

Moved: B. Grow
Seconded: T. Dineen
Technical (75%)

802.3 Voting Members
Y: 54 N: 6 A: 17
PASSES

P802.3ae Task Force Members
Y: 73 N: 6 A: 37
PASSES

Cl **01**   *SC* **1.4**   *P* **5**   *L* **35**   **#** **535**
Law, David J   3Com

Comment Type   **E**   *Comment Status*   **A**
    The numbering of the side stream scrambling definition does not match the Y2K 802.3 edition.

SuggestedRemedy
    Correct the definiotn numbering to match the Y2K edition.

Proposed Response   *Response Status*   **C**
    ACCEPT.

Cl **01**   *SC* **1.4**   *P* **5**   *L* **35**   **#** **536**
Law, David J   3Com

Comment Type   **E**   *Comment Status*   **A**
    The term 'Lane' needs to be added to the definitions.

SuggestedRemedy
    Add the term 'Lane' to the definitions.

Proposed Response   *Response Status*   **C**
    ACCEPT.

Cl **01**   *SC* **1.5**   *P* **7**   *L* **10**   **#** **5**
Stoltz, Mario   ChipIng.de, an Intel co

Comment Type   **E**   *Comment Status*   **A**
    "OIF" is wrongly explained as "optical interface forum".

SuggestedRemedy
    Replace with correct reading "optical internetworking forum"

Proposed Response   *Response Status*   **C**
    ACCEPT.

Cl **02**   *SC* **2.3.1.2**   *P* **10**   *L* **43**   **#** **176**
Edwards, Gareth D.   Xilinx

Comment Type   **E**   *Comment Status*   **A**
    Missing "the" in sentence "There is sufficient information associated with
    mac_service_data_unit for the MAC sublayer entity to determine the length of the data unit."

SuggestedRemedy
    Change sentence to "There is sufficient information associated with the mac_service_data_unit
    for the MAC sublayer..."

Proposed Response   *Response Status*   **C**
    ACCEPT.

Cl **04**   *SC* **4.2.8**   *P* **27**   *L* **17**   **#** **64**
Brown, Benjamin   AMCC

Comment Type   **T**   *Comment Status*   **R**
    The MAC should only use the provided FCS if it is present and the MAC supports that mode.

SuggestedRemedy
    Define new Transmit State Variable: supportsFCSParam: Boolean; {Indicates that the MAC
    supports using a provided fcsParamValue from the MAC Client}Then replace "if
    fcsParamPresent then" with "if fcsParamPresent and supportsFCSParam then"
    Alternative solution: Modify definition of fcsParamPresent to only be true when the MAC
    supports this mode, but this presupposes the MAC Client knows the modes the MAC operates
    in.

Proposed Response   *Response Status*   **C**
    REJECT.
    I do not believe the additional variable is necessary. The proposed "alternative
    solution" has already been incorporated into Clause 4, in principle.
    The behavior of the MAC in the presence and absence of fcsParamPresent in
    both modes has been adequately described in Clause 4, with the appropriate
    "shall" statements, and there is no need to complicate the Pascal more than
    necessary.
    See 4.1.2.1.1 (Pg. 14, Ln. 28-31), 4.2.3.1 (Pg. 19, Ln. 8-10),
        4.3.2 (Pg. 39, Ln. 20-21).

Cl **04**   *SC* **4.4.2**   *P* **41**   *L* **29**   **#** **614**
Bottorff, Paul   Nortel Networks

Comment Type   **T**   *Comment Status*   **R**
    The ifsStretchRatio inserts more idles than necessary.

SuggestedRemedy
    Change the value from 104 to 105.

Proposed Response   *Response Status*   **C**
    REJECT.
    I believe that the value for ifsStretchRatio is correct. It has been defined such
    that for the specified number of bits, one octet of IPG will be generated by the
    Pascal code. The editor humbly requests that the commenter re-submit this
    comment in the next ballot cycle, with a detailed explanation why this value
    should be any different.

Cl **30**   *SC* **30**   *P* **48**   *L* **51**   # **530**
Law, David J   3Com

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

Clarify that the attributes provided for AUI are for 10Mb/s ports without integrated PHYs only.

SuggestedRemedy

Suggest that the text 'For ports without ...' should read 'For 10Mb/s ports without ...'.

Proposed Response   *Response Status* **C**
ACCEPT.

In D2.2

Cl **30**   *SC* **30.1**   *P* **48**   *L* **29**   # **527**
Law, David J   3Com

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

In the case of 100Mb/s it is more that one sublayer that is being referenced here so 'sublayer' should be replaced with 'device'.

SuggestedRemedy

Suggest the text 'The sublayer that ...' should read 'The device that ...'.

Proposed Response   *Response Status* **C**
ACCEPT.

In D2.2

Cl **30**   *SC* **30.1**   *P* **48**   *L* **31**   # **528**
Law, David J   3Com

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

Make it clear that it is that PMA and PMD sublayer combination that is equivalent to a MAU.

SuggestedRemedy

Suggest that text '... MAUs and the PMA and PMD sublayers as a group.' should read '... MAUs and the PMA and PMD sublayer combination as a group.'

Proposed Response   *Response Status* **C**
ACCEPT.

In D2.2

Cl **30**   *SC* **30.1.1**   *P* **48**   *L* **44**   # **529**
Law, David J   3Com

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

Implementations of DTE management for all speeds should follow this clause, not just 10Mb/s DTEs.

SuggestedRemedy

Suggest the text 'Implementations of management for 10Mb/s DTEs, repeater ...' should read 'Implementations of management for DTEs, repeater ...'.

Proposed Response   *Response Status* **C**
ACCEPT.

In D2.2

Cl **30**   *SC* **30.1.4**   *P* **49**   *L* **4**   # **531**
Law, David J   3Com

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

Need to add the additional managed objects subclause to the list in subclause 30.1.4.

SuggestedRemedy

Add managed objects subclause 30.7 and 30.8 to the list in subclause 30.1.4.

Proposed Response   *Response Status* **C**
ACCEPT.

In D2.2

Cl **30**   *SC* **30.2.1**   *P* **49**   *L* **25**   # **65**
Brown, Benjamin   AMCC

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

Editorial cleanup

SuggestedRemedy

Replace "unless other indicated" with "unless otherwise indicated."

Proposed Response   *Response Status* **C**
ACCEPT.

In D2.2

Cl **30**   *SC* **30.3.1.2.4**   *P* **55**   *L* **33**   *#* **532**
Law, David J   3Com

Comment Type **E**   *Comment Status* **A**
Typo.

SuggestedRemedy
Suggest the text '... Clause 45 MDC/MDIO interface ...' should read '... Clause 45 MDIO interface ...'.

Proposed Response   *Response Status* **C**
ACCEPT.

In D2.2

Cl **30**   *SC* **30.3.1.2.4**   *P* **55**   *L* **35**   *#* **533**
Law, David J   3Com

Comment Type **E**   *Comment Status* **A**
Add text to state that where multiple loopbacks are avalible in a set of MMDs that for a PHY at 10Gb/s the loopback nearest the MDI shoudl be used.

SuggestedRemedy
Add at the end of the behavior defined as text 'In the case of a Clause 45 MDIO interface where multiple loopbacks are available the loopback in the MMD closes to the MDI should be used.'

Proposed Response   *Response Status* **C**
ACCEPT.

In D2.2

Cl **30**   *SC* **30.5.1.1.4**   *P* **59**   *L* **51**   *#* **66**
Brown, Benjamin   AMCC

Comment Type **E**   *Comment Status* **A**
Extraneous PMD

SuggestedRemedy
Replace "PMD/PMD receive" with "PMD receive"

Proposed Response   *Response Status* **C**
ACCEPT IN PRINCIPLE.

Text should actually read "PMA/PMD receive" to match the MMD function.

In D2.2

Cl **30**   *SC* **30.5.1.1.4**   *P* **60**   *L* **34**   *#* **534**
Law, David J   3Com

Comment Type **E**   *Comment Status* **A**
The name and states references in this attribute do not match those in Clause 47.

SuggestedRemedy
Update the state machine name and states referenced to match those in Clause 47.

Proposed Response   *Response Status* **C**
ACCEPT.

In D2.2

Cl **30**   *SC* **30.8.1.1**   *P* **636**   *L*   *#* **68**
Brown, Benjamin   AMCC

Comment Type **E**   *Comment Status* **A**
Missing semicolons and period after "Behaviour" section

SuggestedRemedy
Add semicolons at the end of the "BEHAVIOUR DEFINED AS" sections in the following subclauses:30.8.1.1.9,10,11,12,26,28Add period before semicolon at the end of the "BEHAVIOUR DEFINED AS" sections in the following subclause:30.8.1.1.19

Proposed Response   *Response Status* **C**
ACCEPT.

In D2.2

Cl **30**   *SC* **30.8.1.1.25**   *P* **67**   *L* **11**   *#* **44**
Figueira, Norival   Nortel Networks

Comment Type **T**   *Comment Status* **A**
The WIS G1 register is implemented with a latching function (see 50.3.9.1.9 on page 388). The latching function is not defined here. In the same way as aSectionStatus, aLineStatus, and aPathStatus have actions defined to clear the latched bits, aFarEndPathStatus should have an associated "acClearFarEndPathStatus" action defined to clear latched bits.

SuggestedRemedy
Explain that aFarEndPathStatus is implemented with a latching function (see 50.3..9.1.9 for details on when to latch) and that bits remain set until cleared through the acClearFarEndPathStatus action. Create a subclause describing acClearFarEndPathStatus and update Table 30-3 to include this new action.

Proposed Response   *Response Status* **C**
ACCEPT IN PRINCIPLE.

In addition the GDMO changes for the new Action will be made.

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 **30**   *SC* **30.8.1.1.25**

Cl **30**   *SC* **50.5.1.1.4**   *P* **60**   *L* **34-39**   **#** **67**

Brown, Benjamin   AMCC

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

Line 34: replace comma with colon
Line 39L make plural

SuggestedRemedy

Line 34: Replace "as follows, the state" with "as follows: the state"
Line 39: Replace "Where multiple reason for" with "Where multiple reasons for"

Proposed Response   *Response Status* **C**

ACCEPT.

In D2.2

Cl **31B**   *SC* **31B.3.7**   *P* **160**   *L* **8**   **#** **537**

James A. Markevitch   Evergreen Technology

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

The text in 31B.3.7 reads "... shall not begin to transmit a (new) frame more than sixty pause quantum bit times ...", whereas the table in 31B.4.6, page 160, line 42, reads "Delay at MDI <= (40 x pause quantum) bits.
The "sixty" is inconsistent with the "40".

SuggestedRemedy

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **31B**   *SC* **31B.3.7**   *P* **160**   *L* **8**   **#** **475**

Healey, Adam   Agere Systems

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

Extend 10Gb/s station round-trip delay specifations to 64 pause_quanta BT based on the following justification.

Data delay constraints for 10GBASE-X PCS (and thereby XGXS) are too restrictive. Original D2.0 comment recommended a round-trip delay of 1584 BT. D2.1 Clause 48 allocated 2048 BT round-trip delay. However, Table 44-2 only allocated 2048 BT for the XAUI extender and 1024 for 10GBASE-X PCS.

SuggestedRemedy

Change:
"At operating speeds of 10 Gb/s and above, a station shall not begin to transmit a (new) frame more than sixty pause_quantum bit times after the reception of a valid PAUSE frame..."

To:
"At operating speeds of 10 Gb/s and above, a station shall not begin to transmit a (new) frame more than 64 pause_quantum bit times after the reception of a valid PAUSE frame..."

Proposed Response   *Response Status* **C**

REJECT.
The commenter seems to have an issue with the delay budget that was allocated to the 10GBASE-X PCS and the XAUI extender. Therefore, the essence of this comment should be addressed in the context of Clause 48.
Regardless of the resolution of this comment in Clause 48, there is no need to change the overall station round-trip delay in Annex 31B. Even if the delay budget in Clause 48 is increased by 4 pause quanta, it will leave 15 pause quanta for the MAC, RS and MAC Control, which is more than adequate.

Cl **31B**   *SC* **31B.4.6**   *P* **160**   *L* **42**   **#** **69**

Brown, Benjamin   AMCC

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

Change pause quantum number in table to match that in 31B.3.7

SuggestedRemedy

Replace "40" with "60"

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **31B**   *SC* **31B.4.6**   *P* **160**   *L* **42**   # **596**
Thaler, Pat   Agilent Technology

Comment Type **T**   *Comment Status* **A**
Shows old value of delay

SuggestedRemedy
"40" should be "60"

Proposed Response   *Response Status* **C**
ACCEPT.

Cl **31B**   *SC* **31B.4.6**   *P* **160**   *L* **42**   # **47**
Stephen Haddock   Extreme Networks

Comment Type **E**   *Comment Status* **A**
Pause response time for 10 Gb/s operation changed to 60 pause quantum, but PICs still says 40.

SuggestedRemedy
Change PICs to 60 x pause quantum.

Proposed Response   *Response Status* **C**
ACCEPT.

Cl **44**   *SC* **44.1.4**   *P* **166**   *L* **11**   # **70**
Brown, Benjamin   AMCC

Comment Type **T**   *Comment Status* **A**
Wrong ANSI reference

SuggestedRemedy
Replace T1.141 with T1.416-1999

Proposed Response   *Response Status* **C**
ACCEPT.

Change incorporated in D2.2.

Cl **44**   *SC* **44.3**   *P* **166**   *L* **45**   # **105**
Shimon Muller   Sun Microsystems, Inc

Comment Type **E**   *Comment Status* **A**
Typo.

SuggestedRemedy
Replace "Figure 44-2" with "Table 44-2".

Proposed Response   *Response Status* **C**
ACCEPT.

Change incorporated in D2.2.

Cl **44**   *SC* **44.3**   *P* **166**   *L* **51**   # **48**
Stephen Haddock   Extreme Networks

Comment Type **T**   *Comment Status* **A**
a) The variable "n" in the equation needs to be defined.
b) A default value of "n" should be given for use where no value is provided by the manufacturer. Previous generations (clause 29, 42) have used a default value of n=0.66 (and have noted that this is a conservative value which leads to over-estimates of the delay).
c) It would be considerate to include the value of the speed of light.

SuggestedRemedy
Reword the paragraph as follows:"Equation (1) specifies the calculation of bit time per meter of fiber based upon the parameter "n" which represents the ratio of the speed of light in the fiber to the speed of light in a vacuum. The value of n should be available from the fiber manufacturer, but if no value is known then a conservative delay estimate can be calculated using a default value of n = 0.66. The speed of light in a vaccum is c = 3 x 10e9 m/s. Table 44-3 can be used to convert fiber delay values specified relative to the speed of light or in nanoseconds per meter."

Proposed Response   *Response Status* **C**
ACCEPT.

Change incorporated in D2.2.

Cl **44**   *SC* **44.3**   *P* **167**   *L* **1**   # **474**
Healey, Adam   Agere Systems

Comment Type **T**   *Comment Status* **R**
Data delay constraints for 10GBASE-X PCS (and thereby XGXS) are too restrictive. Original D2.0 comment recommended a round-trip delay of 1584 BT. D2.1 Clause 48 allocates 2048 BT round-trip delay. However, Table 44-2 only allocated 2048 BT for the XAUI extender and 1024 for 10GBASE-X PCS.

In accordance with the changes suggested here, recommend change 31.B.7 to make total allocation for 10Gb/s stations be 64 pause_quantum bit times.

SuggestedRemedy
Change delay allocation for XGXS and XAUI to 4096 BT (8 pause_quantum).
Change delay allocation for 10GBASE-X PCS to 2048 BT (4 pause_quantum).

Proposed Response   *Response Status* **C**
REJECT.

The delay constraint parameters have been changed so that the values shown in clause 44 are correct. The editor respectfully requests the commenter to verify the delay constraints in the next revision of the draft, and issue a comment in the next ballot cycle if the commenter desires the values to be changed.

Cl **44** *SC* **44.3** *P* **167** *L* **25** # **598**
Thaler, Pat Agilent Technology

Comment Type **E** *Comment Status* **A**
There is no mention of what "n" is and no units are given for c.

SuggestedRemedy
After the equation add:
where:
  c is the speed of light in m/s, and
  n is the speed of the media relative to the speed of light.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See response to comment 48.

Cl **44** *SC* **44.3** *P* **167** *L* **54** # **175**
Edwards, Gareth D. Xilinx

Comment Type **E** *Comment Status* **R**
Bottom of Table 44-3 is truncated.

SuggestedRemedy
Fix table formatting

Proposed Response *Response Status* **C**
REJECT.

The table follows the IEEE style guide.

Cl **44** *SC* **Table 44-3** *P* **167** *L* **29** # **597**
Thaler, Pat Agilent Technology

Comment Type **E** *Comment Status* **R**
The table is unnecessary. The equation provides the information and the table burns a page.

SuggestedRemedy
Delete the table

Proposed Response *Response Status* **C**
REJECT.

See comment 48.

Cl **44A** *SC* **44A.1** *P* **171** *L* **15-48** # **71**
Brown, Benjamin AMCC

Comment Type **E** *Comment Status* **A**
Add description to data path

SuggestedRemedy
Line 15: Replace "transmit" with "LAN serial transmit"
Line 17: Replace "receive" with "LAN serial receive"
Line 26: Replace "serial transmit" with "WAN serial transmit"
Line 28: Replace "receive" with "WAN serial receive"
Line 36: Replace "WWDM transmit" with "WAN WWDM transmit"
Line 38: Replace "WWDM receive" with "WAN WWDM receive"
Line 46: Replace "WWDM transmit" with "LAN WWDM transmit"
Line 48: Replace "WWDM receive" with "LAN WWDM receive"

Proposed Response *Response Status* **C**
ACCEPT.

Change incorporated in D2.2.

Cl **44A** *SC* **44A.1** *P* **173** *L* **15** # **106**
Shimon Muller Sun Microsystems, Inc

Comment Type **E** *Comment Status* **A**
Typo.

SuggestedRemedy
In the rightmost column replace "Cg39" with "Cg30".

Proposed Response *Response Status* **C**
ACCEPT.

Change incorporated in D2.2.

Cl **44A** *SC* **44A.4** *P* **178** *L* **43** # **107**
Shimon Muller Sun Microsystems, Inc

Comment Type **E** *Comment Status* **A**
Typo.

SuggestedRemedy
In the rightmost column replace "Rcg39" with "Rcg30".

Proposed Response *Response Status* **C**
ACCEPT.

Change incorporated in D2.2.

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 **44A** *SC* **44A.4**

Cl **44A**　　*SC* **44A-2**　　　　　　*P* **173**　　　*L* **32**　　　# **72**

Brown, Benjamin　　　　　　　AMCC

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

It's not obvious where the Sync Header bits come from in this figure

SuggestedRemedy

Add an arrow, branched off the existing line, from the S0 bit to the Sc1 bitThis same comment applies to Figures 44A-4 & 44A-6

Proposed Response　　　*Response Status* **C**

ACCEPT IN PRINCIPLE.

Moved "Sync Header Bits" to point to lower Sc0 and Sc1. Changed arrow to come out of top of S0 into Descrambler. Shifted S0 to S64 to align with Sc0 and Sc1.

Change incorporated in D2.2.

Cl **45**　　*SC* **45**　　　　　　　*P* **45**　　　*L*　　　# **400**

Turner, Ed　　　　　　　　3Com

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

The tables are inconsistant with their use of capitals after an '='.

SuggestedRemedy

Capitalise the word following the '=' for all tables.

Proposed Response　　　*Response Status* **C**

ACCEPT.
Change applied in D2.2.

Cl **45**　　*SC* **45.1.2**　　　　*P* **180**　　　*L* **27**　　　# **510**

Law, David J　　　　　　　3Com

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

The text starting 'If a device supports the MDIO interface it shall respond to all ...' is not really part of the overview but part of the specification of operation.

SuggestedRemedy

The text starting 'If a device supports the MDIO interface it shall respond to all ...' to the end of the paragraph should be moved into subclause 45.2.

Proposed Response　　　*Response Status* **C**

ACCEPT.
Change applied in D2.2.

Cl **45**　　*SC* **45.1.2**　　　　*P* **180**　　　*L* **28**　　　# **511**

Law, David J　　　　　　　3Com

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

The explination of what a MMD is and how many MMDs can be supported by the MDIO interface needs to be clarified.

SuggestedRemedy

Reword the first two sentences of subclause 45.1.2 to read 'This Clause defines a management interface between Station Management (STA) and the sublayers that form a 10Gb/s Physical Layer device (PHY) entity. Where a sublayer, or a grouping of sublayers, is an individually manageable entity, it is known as a MDIO Manageable Device (MMD). This Clause allows a single STA, through a single MDIO interface, to access up to 32 PHYs consisting of up to 32 MMDs as shown in Figure 45-1.

Proposed Response　　　*Response Status* **C**

ACCEPT.
Change applied in D2.2.

Cl **45**　　*SC* **45.1.2**　　　　*P* **180**　　　*L* **30**　　　# **512**

Law, David J　　　　　　　3Com

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

Suggest the text 'Each device can have up to 65 536 registers' should read 'The MDIO interface can support up to a maximum of 65 536 regsiters in a MMD.'

SuggestedRemedy

See comment.

Proposed Response　　　*Response Status* **C**

ACCEPT IN PRINCIPLE.
Change the proposed text '..regsiters in a MMD.' to '..registers in each MMD.'
Change applied in D2.2.

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 **45**　　*SC* **45.1.2**

Cl **45**   *SC* **45.2**   *P* **181**   *L* **26**   *#* **376**

William G. Lane   CSU, Chico

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

This is the only register definition that covers two physical sublayers and as such, can lead to confusion about which register function applies to which sublayer.

SuggestedRemedy

The PMA/PMD register definitions either should be separated into two different sets or the registers themselves should be clearly designated by sublayer.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.
The registers will be clearly identified by sublayer. Note that this will apply to the transmit disable and signal detect registers (see #390, #391 and #395).
Loopback could be either the PMA or PMD (see #379) and power down would apply to both the PMD and PMA (although it is still implementation dependent).
Local fault can be either in the PMA or PMD, and the port type selection bits apply to both the PMA and PMD.
Change applied in D2.2

Cl **45**   *SC* **45.2**   *P* **181**   *L* **3**   *#* **513**

Law, David J   3Com

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

The word 'wire' should be replaced with the word 'signal' in reference to MDC and MDIO as is done in clause 22.

SuggestedRemedy

Globally replace 'wire' with 'signal' in reference to MDC and MDIO.

Proposed Response   *Response Status* **C**

ACCEPT.
Change applied in D2.2.

Cl **45**   *SC* **45.2**   *P* **181**   *L* **4**   *#* **515**

Law, David J   3Com

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

Suggest that the text '... connect a management entity ...' should read '... connect a Station Management entity ...'.

SuggestedRemedy

See comment.

Proposed Response   *Response Status* **C**

ACCEPT.
Change applied in D2.2.

Cl **45**   *SC* **45.2**   *P* **181**   *L* **4**   *#* **516**

Law, David J   3Com

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

Suggest the text in the last part of the first sentence of this subclause be aligned to the similar text of Clause 22 (22.1.1, item c) since it is describing Clause 22.

SuggestedRemedy

Suggest the text '... for the purpose of controlling the PHY and gathering status from the PHY.' to read '... providing access to management parameters and services.'

Proposed Response   *Response Status* **C**

ACCEPT.
Change applied in D2.2.

Cl **45**   *SC* **45.2**   *P* **181**   *L* **9**   *#* **514**

Law, David J   3Com

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

The meaning of MMD has already been spelled out so no need to do it again.

SuggestedRemedy

Replace the text '... each MDIO Manageable Device (MMD).' with '... each MMD.' or '... each MDIO Manageable Device.'

Proposed Response   *Response Status* **C**

ACCEPT.
Change applied in D2.2.

Cl **45**   *SC* **45.2.1**   *P* **182**   *L* **1**   *#* **108**

Shimon Muller   Sun Microsystems, Inc

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

The name of the registers in the Table 45-2 title is not consistent with the name used in Table 45-1.

SuggestedRemedy

Delete "10G" from the Table 45-2 title.

Proposed Response   *Response Status* **C**

ACCEPT.
Change applied in D2.2.

Cl **45**　　　*SC* **45.2.1**　　　　　*P* **182**　　　*L* **25**　　　# **479**

David Kabal　　　　　　　　　　Picolight

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

Please re-allocate 16KB of the reserved or vendor specific PMA/PMD register space to be allocated to generic PHY Management to be defined by a Transceiver Management Services (TMS) document under development in the SFF SSWG forum for use across all PHY (transceiver) modules and standards implementations. (The current TMS proposal is to provide 1) Features and Controls for the PHY above and beyond current 802.3 and GBIC/SFP definitions and 2) provide data structures that inter-translate 802.3, GBIC 5.5, SNMP and RMON MIB/data structures to unify the host/network management programming model independently of each existing and new PHY definition)

SuggestedRemedy

Subdivide table line reading
1.25 through 1.32 767　Reserved
changing to two lines in the table reading
1.25 through 1.16 383　Reserved
1.16 384 through 1.32 767 Reserved for PHY management

Proposed Response　　　*Response Status*　**C**

REJECT.
We recommend that vendors participating in the TMS effort agree on a space in the vendor specific area to use for their features.

Cl **45**　　　*SC* **45.2.1**　　　　　*P* **182**　　　*L* **33**　　　# **109**

Shimon Muller　　　　　　　　　Sun Microsystems, Inc

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

The term "Higher layers" is not appropriate in this context. The devices thatwill reside on top of the PMA/PMD will typically belong to the same Layer inthe OSI stack.

SuggestedRemedy

Replace "Higher layers" with "Upstream MMDs".

Proposed Response　　　*Response Status*　**C**

ACCEPT.
Change applied in D2.2.

Cl **45**　　　*SC* **45.2.1**　　　　　*P* **182**　　　*L* **41**　　　# **377**

William G. Lane　　　　　　　　CSU, Chico

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

Figure 45-2 is ambiguous in that none of the boxes and the location of the PMD service interface are not identified.

SuggestedRemedy

Since both the serial and the WWDM PMDs define loopback, the loopback path should be between the adjacent sides of the two lower boxes and a horizontal line indicating the PMD service interface should be included between the upper and lower sets of boxes. The upper boxes should be labeled PMA transmit and PMA receive; the lower boxes, PMD transmit and PMD receive.

Proposed Response　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.
Loopback position to be discussed and clarified. See #379.
Other changes accepted.
Change applied in D2.2.
Change applied in D2.3.

Cl **45**　　　*SC* **45.2.1.1**　　　　*P* **183**　　　*L* **23**　　　# **487**

Dawe, Piers　　　　　　　　　　Agilent

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

As far as I am aware, there is no mandate for a power down feature. It does not appear in http://www.ieee802.org/3/ae/public/jan01/hudgins_1_0101.pdf . As pointed out in 54.4.6, the text in 45.2.1.1.4 raises problems.

SuggestedRemedy

Delete the line.

If you want to introduce a new feature, bring a thought-through proposal and beg the group's indulgence to bend the rules.

Proposed Response　　　*Response Status*　**C**

REJECT.
This feature existed in Clause 22 and has existed since D1.0 for 10GbE. Though the bit is mandatory, the function that it controls is implementation specific and may, in fact, be a null function.

Cl **45**   *SC* **45.2.1.1.1**   *P* **183**   *L* **38**   **#** **378**

William G. Lane   CSU, Chico

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

Reset in this subclause is defined as a separate PMA/PMD function (it is separately defined for other MMDs also). However the statement: "This action may also initiate a reset in an MMDs that share the MDIO interface" seems to imply that other MMDs may also be reset by the setting bit 1.0.15 to a one. The latter is a global function and is different from the defined individual sublayer by sublayer reset.

SuggestedRemedy

If a global reset required, it should be defined earlier in the clause as an MDIO global function that sets the individual reset bit in each MMD control 1 register. Also, the sentence : "This action may also initiate a reset in an MMDs that share the MDIO interface" should be deleted (see also 45.2.2.1.1, 45.2.3.1.1, 45.2.4.1.1, and 45.2.5.1.1). NOTE: the same problem exists with power down.

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.
See comment #508 which clarifies the reset function.
Change applied in D2.2.

Cl **45**   *SC* **45.2.1.1.1**   *P* **183**   *L* **38**   **#** **508**

Law, David J   3Com

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

The text 'This action may initiate a reset in any MMDs that share the MDIO interface' is slightly unclear as this could mean a MMD in another port since that other port could be sharing the same MDIO interface. I believe that the intent of this text was to say that any other MMDs that share the same chip may also be reset.
This problem exists with all instances of the reset and a similar problem exists with the Power Down bit.

SuggestedRemedy

Change the reset bit text to read 'This action may also initiate a reset in any other MMDs that are instantiated in the same chip'.
Change the Power Down bit to read 'This action may also initiate a power down in any other MMDs that are instantiated in the same chip'.

Proposed Response   *Response Status*   **C**

ACCEPT.
Raised from editorial to technical.
Change applied in D2.2.

Cl **45**   *SC* **45.2.1.1.1**   *P* **183**   *L* **43**   **#** **612**

Thaler, Pat   Agilent Technology

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

The requirement on management registers during reset and power down makes the device present bits useless. Management can't count on them to report device presence because they aren't responded to during power down and reset.

SuggestedRemedy

Add device present to the bits that must be responded to during power down and reset.

Proposed Response   *Response Status*   **C**

ACCEPT.
Change applied in D2.2.

Cl **45**   *SC* **45.2.1.1.2**   *P* **183**   *L* **53**   **#** **379**

William G. Lane   CSU, Chico

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

Loopback is defined as a separate PMD function, not a PMA/PMD function.

SuggestedRemedy

The second sentence in line 53 should be changed from "A PMA/PMD that ." to "A PMD that .".

Proposed Response   *Response Status*   **C**

REJECT.
A PMA can implement loopback (see 51.8 for serial, 48.3.3 for 10GBASE-LX4 PMA). Whether the loopback is in the PMA or PMD is implementation specific.

Cl **45**   *SC* **45.2.1.1.2**   *P* **183**   *L* **53**   **#** **110**

Shimon Muller   Sun Microsystems, Inc

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

It seems that in this draft there has been an attempt to specify the first three registers in each device to be speed independent, while all the speed-dependentbits have been moved to separate registers. This is very good. However, in the description of some of the bits in these registers there is text that implies speed-dependent operation.

SuggestedRemedy

Change the second paragraph in this subclause to read as follows:
"The loopback function is optional. A device's ability to perform the loopback function is advertised in the loopback ability bit of the related speed- dependent status register. A PMA/PMD that is unable to perform the loopback function shall ignore writes to this bit, and return a value of zero when read. For 10Gb/s operation, the loopback functionality is detailed in 52.1.10, and the loopback ability bit is specified in the 10G PMA/PMD Status 2 register."

Proposed Response   *Response Status*   **C**

ACCEPT.
Change applied in D2.2.

Cl **45**　　*SC* **45.2.1.1.2**　　　　*P* **184**　　*L* **2**　　　　# **380**

William G. Lane　　　　　　　　　CSU, Chico

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

The reference "52.1.10" does not exist for serial PMDs and there is no reference to loopback for WWDM PMDs.

SuggestedRemedy

Determine the correct the reference for loopback in serial PMDs (the loopback function definition in clause 52 also needs to be corrected) and add a reference to subclauses 54.2.1.3 and 54.2.2.2 for the WWDM PMDs.

Proposed Response　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.
Propose adding references to 52.3.8 for serial PMDs and 54.2 for WWDM PMDs.
Change applied in D2.2.

Cl **45**　　*SC* **45.2.1.1.2**　　　　*P* **184**　　*L* **5**　　　　# **264**

Christensen, Benny　　　　　　　Intel / GIGA

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

Find correct reference. Clause 52.1.10 does not exist

SuggestedRemedy

Proposed Response　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.
See comment #380.
Change applied in D2.2.

Cl **45**　　*SC* **45.2.1.1.3**　　　　*P* **184**　　*L* **14-18**　　# **111**

Shimon Muller　　　　　　　　　Sun Microsystems, Inc

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

I find the specification for the Speed Selection bits for all the MMDs extremely confusing:
1. These bits imply that they are intended to allow for speed selection in the MMD. However, their functionality as specified does not support this function.
2. In Table 45-3 these bits are specified as read only. Since this is a control register, how can a control bit be read only?
3. The description of the functionality of these bits in Table 45-3 and in sub- clause 45.2.1.1.3 contradict each other.
Finally, clause 45 at this time supports only 10Gb/s operation. It is probably a good bet to assume that in the future there will be other speeds that it will have to support. Therefore, it would be wise to allocate a few more bits at this time for future speeds.

SuggestedRemedy

1. Allocate additional three (?) bits for speed selection (1.0.5:3).
2. Define bits 1.0.6 and 1.0.13 as bits [4:3] for speed selection.
3. Define bits 1.0.5:3 as bits [2:0] for speed selection.
4. All the speed selection bits should be specified as R/W in the table.
5. Define the following encoding of the speed selection bits:
　1.0.6:　1 = Operation at 10Gb/s and above.
　　　　　0 = Unspecified.
　1.0.13: 1 = Operation at 10Gb/s and above.
　　　　　0 = Unspecified.
　1.0.5:3: 000 = Operation at 10Gb/s.
　　　　　001 = Reserved.
　　　　　010 = Reserved.
　　　　　011 = Reserved.
　　　　　100 = Reserved.
　　　　　101 = Reserved.
　　　　　110 = Reserved.
　　　　　111 = Reserved.
6. Change the text in 45.2.1.1.3 to reflect all of the above. In this text you can mention that "Implementations are allowed (but are not required) to force bits 1.0.6 and 1.0.13 to a logic one."
7. This change also requires adding bits to the corresponding Status 1 register. See my comment against subclause 45.2.1.2.

Proposed 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 13 of 144

RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn　　　　　　　　　　　　　　　　　　　　　　　　　　　*Cl* **45**　　*SC* **45.2.1.1.3**

Cl **45**   *SC* **45.2.1.1.4**   *P*   *L*   # **45003**

Turner, Ed

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

In implementing #612 on D2.1, bit 1.0.11 was inadvertantly changed to 1.0.15 in all MMD power down descriptions.

SuggestedRemedy

Change the second x.0.15 in all MMD power down sections to x.0.11 in D2.2.

Proposed Response   *Response Status*   **C**

ACCEPT.
Change applied in D2.3.

Cl **45**   *SC* **45.2.1.1.4**   *P* **184**   *L* **19**   # **486**

Dawe, Piers   Agilent

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

Notwithstanding that "Power down" should not / not yet be in the draft, powering up is an unavoidable concept. Some PMD/PMAs may be physically large and take many seconds literally to warm up. 0.5s from cold to no errors is not reasonable, we should not specify a time.

SuggestedRemedy

Don't mention a "power up time".

Proposed Response   *Response Status*   **C**

REJECT.
Suggested remedy is incomplete. The commenter is requested to re-submit the comment at the next ballot with a method for indicating when the PMD is ready for MAC frame transmission.

Cl **45**   *SC* **45.2.1.1.4**   *P* **184**   *L* **19**   # **484**

Dawe, Piers   Agilent

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

As far as I am aware, there is no mandate for a power down feature. It does not appear in http://www.ieee802.org/3/ae/public/jan01/hudgins_1_0101.pdf . As pointed out in 54.4.6, the text in 45.2.1.1.4 raises problems:
1. Cannot avoid "spurious signals", even continuously in off state. These must be masked in a higher layer.
2. Text is somewhat contradictory about response to management.
But anyway, there is no need for this material unless or until it is voted into the PMD/PMA.

SuggestedRemedy

Delete the subclause.

If you want to introduce a new feature, bring a thought-through proposal and beg the group's indulgence to bend the rules.

Proposed Response   *Response Status*   **C**

REJECT.
This feature existed in Clause 22 and has existed since D1.0 for 10GbE. Though the bit is mandatory, the function that it controls is implementation specific and may, in fact, be a null function.
See #487.

Cl **45**   *SC* **45.2.1.1.4**   *P* **184**   *L* **24**   # **610**

Thaler, Pat   Agilent Technology

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

Statement on management transactions is contrary to statement on line 29.

SuggestedRemedy

Delete the statement.

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.
And apply to all the other MMDs power down text.
Change applied in D2.2.

Cl **45**　　*SC* **45.2.1.1.4**　　　　*P* **184**　　*L* **25**　　　# **381**
William G. Lane　　　　　　　　　CSU, Chico

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

The statement "shall not generate spurious signals that could be interpreted as valid data on data interfaces" seems to imply transmit disable.

SuggestedRemedy

If power down does imply transmit disable, the sentence should so state. If it does not imply power down, negotiation is needed between clause 45 and clauses 52 and 54 to clear up the confusion.

Proposed Response　　　　*Response Status*　**C**

REJECT.
Transmit disable is not implied.
This function is implementation specific, and the statement serves as guidance to implementers.

Cl **45**　　*SC* **45.2.1.1.4**　　　　*P* **184**　　*L* **27**　　　# **382**
William G. Lane　　　　　　　　　CSU, Chico

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

Power down in this subclause is defined as a separate PMA/PMD function (it is separately defined for other MMDs also). However the statement: "This action may also initiate power down in any MMDs that share the MDIO interface" seems to imply that other MMDs may also be powered down by the setting bit 1.0.11 to a one. The latter is a global function and is different from the defined individual sublayer by sublayer power down.

SuggestedRemedy

If a global power down required, it should be defined earlier in the clause as an MDIO global function that sets the individual power down bit in each MMD control 1 register. Also, the sentence : "This action may also initiate power down in any MMDs that share the MDIO interface" should be deleted (see also 45.2.2.1.4, 45.2.3.1.4, 45.2.4.1.4, and 45.2.5.1.4). NOTE: the same problem exists with reset.

Proposed Response　　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.
See comment #508 which clarifies the power down function.
Change applied in D2.2.

Cl **45**　　*SC* **45.2.1.1.4**　　　　*P* **184**　　*L* **32**　　　# **383**
William G. Lane　　　　　　　　　CSU, Chico

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

0.5s may not be enough time for all PMDs to complete the power up sequence.

SuggestedRemedy

Check with the PMD clause teams to determine whether 0.5s is acceptable for all PMDs.

Proposed Response　　　　*Response Status*　**C**

REJECT.
Suggested remedy is incomplete. The commenter is requested to re-submit the comment at the next ballot with a method for indicating when the PMD is ready for MAC frame transmission. See #486.

Cl **45**　　*SC* **45.2.1.1.4**　　　　*P* **184**　　*L* **34**　　　# **73**
Brown, Benjamin　　　　　　　　　AMCC

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

Wrong polarity for power up. The power up process is prompted by clearingthe power down bit to 0, not setting it to 1.

SuggestedRemedy

Replace "to one." with "to zero."This comment applies to all instances of the power down bit, subclauses:45.2.2.1.4, 45.2.3.1.4, 45.2.4.1.4 & 45.2.5.1.4

Proposed Response　　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.
Use the text '..clearing of bit x to zero.' Where x is replaced by the relevent sub-clause bit.
Change applied in D2.2.

Cl **45**　　*SC* **45.2.1.1.4**　　　　*P* **184**　　*L* **34**　　　# **74**
Brown, Benjamin　　　　　　　　　AMCC

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

Wrong register bit is referenced

SuggestedRemedy

Replace "1.0.13" with "1.0.11"

Proposed Response　　　　*Response Status*　**C**

ACCEPT.
Change applied in D2.2.

Cl **45**　　　*SC* **45.2.1.2**　　　　　　*P* **184**　　　*L* **42**　　　**#** **112**

Shimon Muller　　　　　　　　　　Sun Microsystems, Inc

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

See my comment against subclause 45.2.1.1.3.In order to accommodate the speed selection functionality this register needsan allocation of three (?) more bits for "Speed Ability".

SuggestedRemedy

Pick your favorite bits from the reserved space. Bits 1.1.5:3 seem to be a goodcandidate. The encoding of these bits has to match the encoding of bits 1.0.5:3in the Control 1 register. Add a subclause to describe their functionality.

Proposed Response　　　*Response Status*　**Z**

Withdrawn.

Cl **45**　　　*SC* **45.2.1.2.1**　　　　　*P* **184**　　　*L* **45**　　　**#** **384**

William G. Lane　　　　　　　　　CSU, Chico

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

Local fault is a global variable that could be caused by a fault condition in either (or both) the PMA or the PMD transmit or receive paths.

SuggestedRemedy

Change the first two sentences to read: "Local fault is a global PMA/PMD variable. When read as a one, bit 1.1.7 indicates that either (or both) PMA or the PMD has detected a local fault condition on either the transmit or receive paths. When read as a zero, bit 1.1.7 indicates that neither the PMA or PMD has detected a local fault condition."

Proposed Response　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.
Use the text '..neither the PMA nor the PMD ..' in the last sentence.
Change applied in D2.2.

Cl **45**　　　*SC* **45.2.1.2.1**　　　　　*P* **184**　　　*L* **47**　　　**#** **113**

Shimon Muller　　　　　　　　　　Sun Microsystems, Inc

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

The last sentence of the paragraph implies speed-dependent functionality in aspeed-independent register.

SuggestedRemedy

Change the last sentence of the paragraph to read as follows:"For 10Gb/s operation, bit 1.1.7 is set to a one when...."

Proposed Response　　　*Response Status*　**C**

ACCEPT.
Change applied in D2.2.

Cl **45**　　　*SC* **45.2.1.2.2**　　　　　*P* **185**　　　*L* **11**　　　**#** **386**

William G. Lane　　　　　　　　　CSU, Chico

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

In table 45-4, there is an inconsistency with 45.2.1.2.2 in the description of Receive link status

SuggestedRemedy

Change the description to "1 = PMA locked to receive signal", and "0 = PMA not locked to receive signal"

Proposed Response　　　*Response Status*　**C**

ACCEPT.
Change applied in D2.2.

Cl **45**　　　*SC* **45.2.1.2.2**　　　　　*P* **185**　　　*L* **7**　　　**#** **385**

William G. Lane　　　　　　　　　CSU, Chico

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

In table 45-4, there is an inconsistency with 45.2.1.2.1 in the description of local fault

SuggestedRemedy

Change the description to "1 = Local fault condition detected", and "0 = Local fault condition not detected"

Proposed Response　　　*Response Status*　**C**

ACCEPT.
Change applied in D2.2.

Cl **45**　　　*SC* **45.2.1.4**　　　　　　*P* **185**　　　*L* **31**　　　**#** **517**

Law, David J　　　　　　　　　　3Com

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

The text 'The default ... has been chosen so that ...' is incorrect as no default values are defined nor can they be defined as the default mode select is dependent on the modes supported by the device.

SuggestedRemedy

Delete the sentence.

Proposed Response　　　*Response Status*　**C**

ACCEPT.
Change applied in D2.2.

Cl **45**　　　*SC* **45.2.1.4**　　　　　*P* **185**　　　*L* **44**　　　# **518**

Law, David J　　　　　　　　　　　3Com

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

The name 'Port type selection' is incorrect as these bits only select the PMA/PMD type and setting these bits to, for example 10GBASE-SR, will only place the PMA/PMD into 10GBASE-SR mode, not the port.

SuggestedRemedy

Globally change the name 'Port type selection' to 'PMA/PMD type selection' and add the text 'PMA/PMD' to each row in the description column.

Proposed Response　　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.
Search the PMA/PMD section for other instances of 'port' and replace as necessary.
Change applied in D2.2.

Cl **45**　　　*SC* **45.2.1.4.1**　　　　*P* **186**　　　*L* **6**　　　# **521**

Law, David J　　　　　　　　　　　3Com

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

Typo.

SuggestedRemedy

Change the text '... STA management entity ...' to read '... STA entity ...'.

Proposed Response　　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.
Change the text to ' It is the responsibility of the STA entity to ensure that mutually acceptable MMD types are applied consistently across all the MMDs on a particular PHY.'
Also apply to 45.2.2.4.2 (WIS) and 45.2.3.4.2 (PCS).
Change applied in D2.2.

Cl **45**　　　*SC* **45.2.1.5.4**　　　　*P* **186**　　　*L* **42**　　　# **387**

William G. Lane　　　　　　　　　CSU, Chico

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

The reference to 52.1.7 is incorrect and there is no reference to clause 54

SuggestedRemedy

Replace "52.1.7" with "52.3.6 for serial PMDs" and add "54.4.9 for WWDM PMDs"

Proposed Response　　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.
Change the sentence to :
'The description of the transmit local fault function for serial PMDs is given in 52.3.6. The description of the transmit local fault function for WWDM PMDs is given in 54.4.9.'
Change applied in D2.2.

Cl **45**　　　*SC* **45.2.1.5.5**　　　　*P* **188**　　　*L* **14**　　　# **388**

William G. Lane　　　　　　　　　CSU, Chico

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

The reference to 52.1.8 is incorrect and there is no reference to clause 54

SuggestedRemedy

Replace "52.1.8" with "52.3.7 for serial PMDs" and add "54.4.10 for WWDM PMDs"

Proposed Response　　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.
Change the sentence to :
'The description of the receive local fault function for serial PMDs is given in 52.3.7. The description of the receive local fault function for WWDM PMDs is given in 54.4.10.'
Change applied in D2.2.

Cl **45**　　　*SC* **45.2.1.5.6**　　　　*P* **188**　　　*L* **23**　　　# **389**

William G. Lane　　　　　　　　　CSU, Chico

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

Loopback is a PMD function and should be labeled as such

SuggestedRemedy

Change the subclause title to "PMD loopback ability ." and change "device" to "PMD" (3 places)

Proposed Response　　　　*Response Status*　**C**

REJECT.
See #379.
A PMA can implement loopback (see 51.8 for serial, 48.3.3 for 10GBASE-LX4 PMA). Whether the loopback is in the PMA or PMD is implementation specific. Discuss further.

Cl **45**　　　*SC* **45.2.1.5.7**　　　　*P* **188**　　　*L* **29**　　　# **390**

William G. Lane　　　　　　　　　CSU, Chico

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

Transmit disable is a PMD function and should be labeled as such

SuggestedRemedy

Change the subclause title to "PMD transmit disable ability ." and change "device to "PMD" (3 places)

Proposed Response　　　　*Response Status*　**C**

ACCEPT.
Change applied in D2.2.

Cl **45**   *SC* **45.2.1.6**   *P* **189**   *L*   *#* **337**

Dallesasse, John M.E   Molex Incorporated

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

A global transmit disable should be provided for the WWDM PMD within the MDIO interface. The global disable function should be optional unless a device supports the transmit disable function. In this case, support of the global function should be required and per channel disable optional.

SuggestedRemedy

Modify the register bit definitions in Table 45-7 and the corresponding text to reflect the following:Bit 0: Global WWDM and Serial Transmit Disable
Bit 1: Transmit Disable on Lane 0
Bit 2: Transmit Disable on Lane 1
Bit 3: Transmit Disable on Lane 2
Bit 4: Transmit Disable on Lane 3
It will also be necessary to provide a status register that indicates the ability of the device to support transmit disable on a per-lane basis.

Proposed Response   *Response Status* **C**

REJECT.
All four bits are in the same register and can be written simultaneously.

Cl **45**   *SC* **45.2.1.6**   *P* **189**   *L* **28**   *#* **391**

William G. Lane   CSU, Chico

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

Transmit disable is a PMD function and should be identified as such

SuggestedRemedy

Change "PMA/PMD" to "PMD" (12 places in this 45.2.1.6 and its associated subclauses and table 45-7). Add PMD before transmit disable in the title of the associated subclauses (4 places) and in the bit names in table 45-7 (4 places).

Proposed Response   *Response Status* **C**

ACCEPT.
Change applied in D2.2.

Cl **45**   *SC* **45.2.1.6**   *P* **189**   *L* **37**   *#* **392**

William G. Lane   CSU, Chico

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

The reference to 52.1.6 is incorrect and there is no reference to clause 54

SuggestedRemedy

Change 52.1.6 to "52.3.5 for the serial PMDs" and add " 54.4.7 for the WWDM PMDs"

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.
Use the text : 'The transmit disable function for serial PMDs is described in 52.3.5. The transmit disable function for WWDM PMDs is described in 54.4.7.'
Change applied in D2.2.

Cl **45**   *SC* **45.2.1.6**   *P* **189**   *L* **42**   *#* **393**

William G. Lane   CSU, Chico

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

A global PMD transmit disable is needed to be consistent with signal detect function defined for the WWDM PMDs (which have both a global signal detect and lane-by-lane signal detect).

SuggestedRemedy

Add a "PMD transmit disable global" variable that shall disable the output on all lanes of the transmit path. Add a new bit definition to table 45-7 (bit 1.8.4?) for PMD transmit disable.

Proposed Response   *Response Status* **C**

REJECT.
See 337.
All four bits are in the same register and can be written simultaneously.

Cl **45**   *SC* **45.2.1.6.3**   *P* **190**   *L* **28**   *#* **75**

Brown, Benjamin   AMCC

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

Wrong register bit is referenced

SuggestedRemedy

Replace "1.8.0" with "1.8.1"

Proposed Response   *Response Status* **C**

ACCEPT.
Change applied in D2.2.

Cl **45**   *SC* **45.2.1.7**   *P* **190**   *L* **39**   *#* **394**

William G. Lane   CSU, Chico

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

A global PMD signal detect is needed to be compatible with signal detect function of the WWDM PMDs (which have both a global signal detect and lane-by-lane signal detect)

SuggestedRemedy

Add a "PMD signal detect global" variable that indicates signals being received on all lanes. Add a new bit definition to table 54-8 (bit 1.9.4?) for PMD signal.

Proposed Response   *Response Status* **C**

REJECT.
All four bits are in the same register and can be read simultaneously.
It should be noted that the Link Status bit (1.1.2) will not be set without all signal detects.

Cl **45**   *SC* **45.2.1.7**   *P* **190**   *L* **39**   **#** **395**

William G. Lane   CSU, Chico

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

Signal detect is a PMD function and should be identified as such

SuggestedRemedy

Change "PMA/PMD" to "PMD" (120 places in this 45.2.1.7 and its associated subclauses and table 45-8). Add PMD before transmit disable in the title of the associated subclauses (4 places) and in the bit names in table 45-8 (4 places).

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.
Apply changes to the signal detect register definitions.
Change applied in D2.2.

Cl **45**   *SC* **45.2.1.8**   *P* **191**   *L* **32**   **#** **611**

Thaler, Pat   Agilent Technology

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

This register only applies to LW4 PMDs. LX4 PMDs don't deskew and don't synchronize the lanes.

SuggestedRemedy

Delete "LX4/" through out the subclause.

Proposed Response   *Response Status* **C**

REJECT.
Change applied in D2.2.
This comment is superceded by #587 (deletion of LW4).

Cl **45**   *SC* **45.2.1.8**   *P* **191**   *L* **34**   **#** **399**

Turner, Ed   3Com

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

Add 'that implement MDIO.' to the end of the sentence '... port types.'

SuggestedRemedy

Proposed Response   *Response Status* **C**

REJECT.
This comment is superceded by #587.

Cl **45**   *SC* **45.2.1.8**   *P* **191**   *L* **39**   **#** **396**

William G. Lane   CSU, Chico

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

Defining this register as MANDATORY for LX4/LW4 PMDs is in direct conflict with the statement in 45.1 that: "Where no physical embodiment of the MDIO exists, provision of an equivalent mechnism to access the registers is RECOMMENDED. Also, there is no prior agreement of the WWDM PMD development team to require this register in all WWDM implementations.

SuggestedRemedy

Since all registers Change "PMA/PMD" to "PMD" (120 places in this 45.2.1.7 and its associated subclauses and table 45-8). Add PMD before transmit disable in the title of the associated subclauses (4 places) and in the bit names in table 45-8 (4 places).

Proposed Response   *Response Status* **C**

REJECT.
This comment is superceded by #587 (deletion of LW4).

Cl **45**   *SC* **45.2.1.8.1**   *P* **191**   *L* **41**   **#** **583**

Rich Taborek   nSerial Corporation

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

The words "not de-skewed" are used to describe that the four lanes of a 10GBASE-LX4/LW4 PHY are not aligned. This wording is obfuscatory at best.

SuggestedRemedy

Replace all instances of "not de-skewed" associated with 10GBASE-LX4/LW4 PHYs with "not aligned".

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.
Also replace 'de-skewed' with 'aligned'.
Change applied in D2.2.

Cl **45**   *SC* **45.2.1.8.1**   *P* **191**   *L* **41**   **#** **408**

Turner, Ed   3Com

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

move 'receive' after '10GBASE-LX4/LW4 PMA/PMD'.

SuggestedRemedy

Proposed Response   *Response Status* **C**

ACCEPT.
Change applied in D2.2.

Cl **45**　　*SC* **45.2.2**　　　　　*P* **193**　　　*L* **5,7**　　　# **114**
Shimon Muller　　　　　　　　　Sun Microsystems, Inc

Comment Type　**E**　　*Comment Status*　**A**
Inconsistent naming/numbering of MMD registers.

SuggestedRemedy
In Table 45-10 replace:
- "WIS Control" with "WIS Control 1".
- "WIS Status" with "WIS Status 1".

Proposed Response　　　　*Response Status*　**C**
ACCEPT.
Change applied in D2.2.

Cl **45**　　*SC* **45.2.2.1**　　　　*P* **193**　　　*L* **36**　　　# **115**
Shimon Muller　　　　　　　　　Sun Microsystems, Inc

Comment Type　**E**　　*Comment Status*　**A**
Inconsistent naming/numbering of MMD registers.

SuggestedRemedy
Replace "WIS Control" with "WIS Control 1" in:
- Subclause 45.2.2.1 header.
- Table 45-11 header.

Proposed Response　　　　*Response Status*　**C**
ACCEPT IN PRINCIPLE.
Also apply to text in 45.2.2.1.
Change applied in D2.2.

Cl **45**　　*SC* **45.2.2.1.2**　　　*P* **194**　　　*L* **31**　　　# **116**
Shimon Muller　　　　　　　　　Sun Microsystems, Inc

Comment Type　**T**　　*Comment Status*　**A**
The last sentence of the paragraph implies speed-dependent functionality in a speed-independent register.

SuggestedRemedy
Change the last sentence of the paragraph to read as follows:"For 10Gb/s operation, the detailed behavior of the WIS...."

Proposed Response　　　　*Response Status*　**C**
ACCEPT.
Change applied in D2.2.

Cl **45**　　*SC* **45.2.2.1.3**　　　*P* **194**　　　*L* **46**　　　# **117**
Shimon Muller　　　　　　　　　Sun Microsystems, Inc

Comment Type　**T**　　*Comment Status*　**D**
See my comment against subclause 45.2.1.1.3.

SuggestedRemedy
See my comment against subclause 45.2.1.1.3.

Proposed Response　　　　*Response Status*　**Z**
Withdrawn.

Cl **45**　　*SC* **45.2.2.1.4**　　　*P* **195**　　　*L* **9**　　　# **118**
Shimon Muller　　　　　　　　　Sun Microsystems, Inc

Comment Type　**E**　　*Comment Status*　**R**
Typo.

SuggestedRemedy
Replace "power up" with "power down".

Proposed Response　　　　*Response Status*　**C**
REJECT.
See #73. Intent is power up time. See #647 on D2.0.
Should read 'clear to zero' see #78.

Cl **45**　　*SC* **45.2.2.2**　　　　*P* **195**　　　*L* **14**　　　# **119**
Shimon Muller　　　　　　　　　Sun Microsystems, Inc

Comment Type　**E**　　*Comment Status*　**A**
Inconsistent naming/numbering of MMD registers.

SuggestedRemedy
Replace "WIS Status" with "WIS Status 1" in:
- Subclause 45.2.2.2 header.
- Table 45-12 header.

Proposed Response　　　　*Response Status*　**C**
ACCEPT IN PRINCIPLE.
Also apply to text of 45.2.2.2 and update PICS entry with the new name.
Change applied in D2.2.

Cl **45**　　*SC* **45.2.2.2**　　　　*P* **195**　　*L* **19**　　　# **120**

Shimon Muller　　　　　　　　Sun Microsystems, Inc

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

See my comment against subclause 45.2.1.2.

SuggestedRemedy

See my comment against subclause 45.2.1.2.

Proposed Response　　　*Response Status*　**Z**

Withdrawn.

Cl **45**　　*SC* **45.2.2.2.2**　　*P* **195**　　*L* **49**　　　# **121**

Shimon Muller　　　　　　　　Sun Microsystems, Inc

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

The first sentence of the paragraph implies speed-dependent functionality in a speed-independent register.

SuggestedRemedy

Change the sentence to read as follows:For 10Gb/s operation, the behavior of the WIS..."Move the sentence to the end of the paragraph.

Proposed Response　　　*Response Status*　**C**

ACCEPT.
Change applied in D2.2.

Cl **45**　　*SC* **45.2.2.4**　　　　*P* **196**　　*L* **23**　　　# **519**

Law, David J　　　　　　　　3Com

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

The name 'Port type selection' is incorrect as these bits only select the WIS type and setting these bits to, for example 10GBASE-W, will only place the WIS into 10GBASE-W mode, not the port.

SuggestedRemedy

Globally change the name 'Port type selection' to 'WIS type selection' and replace the text 'port' with 'WIS' to each row in the description column.

Proposed Response　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.
Change 'port' to 'PCS' in table 45-13 and its description text.
Change applied in D2.2.

Cl **45**　　*SC* **45.2.2.4**　　　　*P* **196**　　*L* **8**　　　# **122**

Shimon Muller　　　　　　　　Sun Microsystems, Inc

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

Inconsistent naming/numbering of MMD registers.

SuggestedRemedy

Replace "WIS Control 2" with "10G WIS Control 2" in:
- Subclause 45.2.2.4 header.
- Table 45-13 header.

Proposed Response　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.
Also apply to text in 45.2.2.4.
Change applied in D2.2.

Cl **45**　　*SC* **45.2.2.4.2**　　*P* **196**　　*L* **42**　　　# **76**

Brown, Benjamin　　　　　　　AMCC

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

Wrong PCS/PMA interface speed for LAN mode

SuggestedRemedy

Replace "10" with "10.3125"

Proposed Response　　　*Response Status*　**C**

ACCEPT.
Change applied in D2.2.

Cl **45**　　*SC* **45.2.2.5**　　　　*P* **196**　　*L* **47**　　　# **123**

Shimon Muller　　　　　　　　Sun Microsystems, Inc

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

Inconsistent naming/numbering of MMD registers.

SuggestedRemedy

Replace "WIS Status 2" with "10G WIS Status 2" in:
 - Subclause 45.2.2.5 header.
- Table 45-14 header.

Proposed Response　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.
Also apply to the text in 45.2.2.5
Change applied in D2.2.

TYPE: TR/technical required T/technical E/editorial　COMMENT STATUS: D/dispatched A/accepted R/rejected　SORT ORDER: Clause, Page, Line, Subclause　　Page 21 of 144

RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn　　　　　　　　　　　　　　　　　　　　　　*Cl* **45**　　*SC* **45.2.2.5**

Cl **45** *SC* **45.2.2.9** *P* **200** *L* **33** *#* **37**
Figueira, Norival Nortel Networks

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

The G1 octet is latched as described in 50.3.9.1.8 (page 388, line 48), but the latching function is not described in 45.2.2.9. Clause 45 explains the latching function for the other WIS registers. Why is WIS G1 different?

SuggestedRemedy

Either explain the latching function in 45.2.2.9 or mention the existence of a latching function and refer to 50.3.9.1.8 for further details.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Indicate that it is a latching byte and reference 50.3.9.1.8.
Change applied in D2.2.

Cl **45** *SC* **45.2.3** *P* **203** *L* **5,7,11,13** *#* **124**
Shimon Muller Sun Microsystems, Inc

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

Inconsistent naming/numbering of MMD registers.

SuggestedRemedy

In Table 45-22 replace:
- "PCS Control" with "PCS Control 1".
- "PCS Status" with "PCS Status 1".
- "PCS Control 2" with "10G PCS Control 2".
- "PCS Status 2" with "10G PCS Status 2".

Proposed Response *Response Status* **C**

ACCEPT.
Change applied in D2.2.

Cl **45** *SC* **45.2.3.1** *P* **202** *L* **44** *#* **125**
Shimon Muller Sun Microsystems, Inc

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

Inconsistent naming/numbering of MMD registers.

SuggestedRemedy

Replace "PCS Control" with "PCS Control 1" in:
- Subclause 45.2.3.1 header.
- Table 45-23 header.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Also apply to text in 45.2.3.1.
Change applied in D2.2.

Cl **45** *SC* **45.2.3.1.1** *P* **203** *L* **54** *#* **126**
Shimon Muller Sun Microsystems, Inc

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

Incorrect reference.

SuggestedRemedy

Replace "1.0.15" with "3.0.15".

Proposed Response *Response Status* **C**

ACCEPT.
See #77.
Change applied in D2.2.

Cl **45** *SC* **45.2.3.1.1** *P* **203** *L* **54** *#* **77**
Brown, Benjamin AMCC

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

Wrong register bit is referenced

SuggestedRemedy

Replace "1.0.15" with "3.0.15"

Proposed Response *Response Status* **C**

ACCEPT.
Change applied in D2.2.

Cl **45** *SC* **45.2.3.1.2** *P* **204** *L* **12** *#* **127**
Shimon Muller Sun Microsystems, Inc

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

The last sentence of the paragraph implies speed-dependent functionality in a speed-independent register.

SuggestedRemedy

Change the last sentence of the paragraph to read as follows:
"For 10Gb/s operation, the specific behavior...."

Proposed Response *Response Status* **C**

ACCEPT.
Change applied in D2.2.

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 **45** *SC* **45.2.3.1.2**

Cl **45**   *SC* **45.2.3.1.3**   *P* **204**   *L* **26-27**   # **310**

Baumer, Howard   Broadcom

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

speed bit definition conflict
45.2.3.1.3, 45.2.4.1.3, 45.2.5.1.3 define the speed bits as read only and ignored on write.
Tables 45.23, 45.31, 45.36 define the speed bits as write to "11" and ignore on read.

SuggestedRemedy

change table definitions to mathc text definitions

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.
Change the table entry to 'Write as one. R/W'
Change the description to 'The speed selection bits shall both be written as one. Any attempt to change the bits to an invalid setting shall be ignored.'
Apply to all MMDs throughout the clause.
Change applied in D2.3.

Cl **45**   *SC* **45.2.3.1.3**   *P* **204**   *L* **26-27**   # **128**

Shimon Muller   Sun Microsystems, Inc

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

See my comment against subclause 45.2.1.1.3.

SuggestedRemedy

See my comment against subclause 45.2.1.1.3.

Proposed Response   *Response Status*   **Z**

Withdrawn.

Cl **45**   *SC* **45.2.3.2**   *P* **204**   *L* **48**   # **129**

Shimon Muller   Sun Microsystems, Inc

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

Inconsistent naming/numbering of MMD registers.

SuggestedRemedy

Replace "PCS Status" with "PCS Status 1" in:
- Subclause 45.2.3.2 header.
- Table 45-24 header.

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.
Also apply to text in 45.2.3.2 and update PICS entry with the new name.
Change applied in D2.2.

Cl **45**   *SC* **45.2.3.2**   *P* **204**   *L* **49**   # **130**

Shimon Muller   Sun Microsystems, Inc

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

See my comment against subclause 45.2.1.2.

SuggestedRemedy

See my comment against subclause 45.2.1.2.

Proposed Response   *Response Status*   **Z**

Withdrawn.

Cl **45**   *SC* **45.2.3.2**   *P* **205**   *L* **7**   # **397**

William G. Lane   CSU, Chico

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

The naming of "Fault" in table 45-24 and in 45.2.3.2.1 is inconsistent with the naming of "PCS receive link status"

SuggestedRemedy

Change "Fault" to "PCS receive fault"

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.
See #308.
(Modify to 'local fault' and have separate transmit and receive LF bits in register 5).

Cl **45**   *SC* **45.2.3.2.1**   *P* **205**   *L* **20-26**   # **308**

Baumer, Howard   Broadcom

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

Confusion in local fault definition for DTE XS, PHY XS and PCS
45.2.3.2.1 describe a local fault as a receive fault only
45.2.4.2.1 describes a local fault as either a transmit or or a receive fault
45.2.5.2.1 describe local fault as just a fault.
local fault definition should be consistant accross all devices

SuggestedRemedy

Use 45.2.4.2.1 description for all devices.

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.
Base the descripton text around that for 45.2.4.2.1 and add 'For 10Gb/s operation, ' in front of the last sentence for the description in 45.2.3.2.1.
Change applied in D2.2.

Also, the DTE XS and PCS need to swap over transmit and receive WRT the PHY XS.
Change applied in D2.2.
Undo this change.
Undo applied in D2.3.

Cl **45**　　　*SC* **45.2.3.4**　　　　　*P* **205**　　　*L* **43**　　　**#** **131**

Shimon Muller　　　　　　　　　　Sun Microsystems, Inc

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

Inconsistent naming/numbering of MMD registers.

SuggestedRemedy

Replace "PCS Control 2" with "10G PCS Control 2" in:
- Subclause 45.2.3.4 header.
- Table 45-25 header.

Proposed Response　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.
Also apply to text in 45.2.3.4.
Change applied in D2.2.

Cl **45**　　　*SC* **45.2.3.4**　　　　　*P* **206**　　　*L* **10**　　　**#** **398**

William G. Lane　　　　　　　　　CSU, Chico

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

The port selection control variable in table 25 is inconsistent with the 10GBASE port type ability status variables in table 45-26 (10GBASE-W) is missing

SuggestedRemedy

Increase the port type selection bits to 2 and add 10GBASE-W port type to the selection list

Proposed Response　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.
Move jitter test mode bit up by one. Modify the Port Type selection text accordingly and update the PICS.
Change applied in D2.2.

Cl **45**　　　*SC* **45.2.3.4**　　　　　*P* **206**　　　*L* **10**　　　**#** **520**

Law, David J　　　　　　　　　　3Com

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

The name 'Port type selection' is incorrect as these bits only select the PCS type and setting these bits to, for example 10GBASE-R, will only place the PCS into 10GBASE-R mode, not the port.

SuggestedRemedy

Globally change the name 'Port type selection' to 'PCS type selection' and replace the text 'port' with 'PCS' to each row in the description column.

Proposed Response　　　*Response Status*　**C**

ACCEPT.
Change applied in D2.2.

Cl **45**　　　*SC* **45.2.3.4.1**　　　　*P* **206**　　　*L* **19**　　　**#** **45000**

Turner, Ed

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

Clause 48 contains the jitter information for 10GBASE-X PCS.

SuggestedRemedy

Add reference to Clause 48.

Proposed Response　　　*Response Status*　**C**

ACCEPT.

Cl **45**　　　*SC* **45.2.3.5**　　　　　*P* **206**　　　*L* **32**　　　**#** **132**

Shimon Muller　　　　　　　　　　Sun Microsystems, Inc

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

Inconsistent naming/numbering of MMD registers.

SuggestedRemedy

Replace "PCS Status 2" with "10G PCS Status 2" in:
- Subclause 45.2.3.5 header.
- Table 45-26 header.

Proposed Response　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.
Also apply to text in 45.2.3.5.
Change applied in D2.2.

Cl **45**　　　*SC* **45.2.3.5.2**　　　　*P* **206**　　　*L* **50**　　　**#** **406**

Turner, Ed　　　　　　　　　　　3Com

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

Note is unclear.

SuggestedRemedy

Change 'is performing' to 'is able to perform'. Also change 'It indicates' to 'This bit indicates' and 'were attached' to 'were to be attached'

Proposed Response　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.
Also change '..is..' to '..would be..'
Change applied in D2.2.

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 **45**　　　*SC* **45.2.3.5.2**

Cl **45**   *SC* **45.2.3.6.1**   *P* **207**   *L* **40-43**   # **311**
Baumer, Howard   Broadcom

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

Different descriptions for link up / deskew
45.2.3.6.1 register bit 3.24.12 is described as all 4 lanes synchronized and deskewed
45.2.4.6.1 register bit 4.24.12 and 45.2.5.6.1 register bit 5.24.12 are descriped as link up.
Since these bits just reflect the status of their segment of the link the should all be described the same way.

SuggestedRemedy

use 45.2.3.6.1 description for all 3

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.
Apply the 45.2.3.6.1 description to the table and text of 45.2.4.5.1 and 45.2.5.5.1
Change applied in D2.3.

Cl **45**   *SC* **45.2.3.7.2**   *P* **208**   *L* **50**   # **133**
Shimon Muller   Sun Microsystems, Inc

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

The ">=" symbol used here does not conform to the IEEE style.

SuggestedRemedy

Use the symbol from the symbols table that was provided by the chief editor.

Proposed Response   *Response Status* **C**

ACCEPT.
Change applied in D2.2.

Cl **45**   *SC* **45.2.3.8.1**   *P* **210**   *L* **7**   # **78**
Brown, Benjamin   AMCC

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

You don't set bits to zero, you clear them to zero.

SuggestedRemedy

Replace both instances of the word "set" with "cleared"

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.
Also apply this across the rest of the clause.
Change applied in D2.2.

Cl **45**   *SC* **45.2.3.8.2**   *P* **210**   *L* **23**   # **79**
Brown, Benjamin   AMCC

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

A six bit counter stops at 63 not 255

SuggestedRemedy

Replace "255" with "63"

Proposed Response   *Response Status* **C**

ACCEPT.
Change applied in D2.2.

Cl **45**   *SC* **45.2.3.8.3**   *P* **210**   *L* **23**   # **134**
Shimon Muller   Sun Microsystems, Inc

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

The bad sync headers counter is defined to be 6 bits. It cannot therefore reach the value of 255.

SuggestedRemedy

Replace "255" with "63".

Proposed Response   *Response Status* **C**

ACCEPT.
See #79.
Change applied in D2.2.

Cl **45**   *SC* **45.2.3.8.3**   *P* **210**   *L* **25**   # **345**
David Gross   Nortel Networks

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

The sentence "The bad sync headers counter is defined by the bad_sh_count variable specified in 49.2.12.2" is inaccurate.

SuggestedRemedy

Change to read: "The bad sync_headers counter is defined by the ber_count counter specified in 49.2.14.2. It counts bad sync_headers received while block_lock is true."

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change the table entry to:
'3.33.13:8, BER, BER counter, RO/NR'
and the description to :
'45.2.3.8.3 BER (3.33.13:8)
The BER counter is a six bit count of the number of times that the bad_ber_sh state has been entered since the register was last accessed via MDIO. The BER counter shall be implemented as a non roll-over counter such that when the counter reaches 63 it does not roll to 0 when the bad_ber_sh state is subsequently entered. The BER counter shall clear to zero when read by management. The BER counter is defined by the ber_count variable specified in 49.2.14.2.'
Change applied in D2.2.

Cl **45**　　*SC* **45.2.3.8.4**　　　*P* **210**　　*L* **36**　　# **346**

David Gross　　　　　　　　　　Nortel Networks

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

The sentence "The errored blocks counter is defined by the errored_block_count variable specified in 49.2.12.2." is inaccurate.

SuggestedRemedy

Change to read: "The errored blocks counter is defined by the errored_block_count counter specified in 49.2.14.2. It counts the number of times an Error Block is generated by the receive state machine."

Proposed Response　　　*Response Status* **C**

ACCEPT IN PRINCIPLE.
Change to read: "The errored blocks counter is defined by the errored_block_count counter specified in 49.2.14.2."
Change applied in D2.2.

Cl **45**　　*SC* **45.2.4**　　　*P* **211**　　*L* **5,7**　　# **135**

Shimon Muller　　　　　　　　Sun Microsystems, Inc

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

Inconsistent naming/numbering of MMD registers.

SuggestedRemedy

In Table 45-30 replace:
- "PHY XS Control" with "PHY XS Control 1".
 - "PHY XS Status" with "PHY XS Status 1".

Proposed Response　　　*Response Status* **C**

ACCEPT.
Change applied in D2.2.

Cl **45**　　*SC* **45.2.4.1**　　　*P* **210**　　*L* **46**　　# **136**

Shimon Muller　　　　　　　　Sun Microsystems, Inc

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

Inconsistent naming/numbering of MMD registers.

SuggestedRemedy

Replace "PHY XS Control" with "PHY XS Control 1" in:
- Subclause 45.2.4.1 header.
- Table 45-31 header.

Proposed Response　　　*Response Status* **C**

ACCEPT IN PRINCIPLE.
Also apply to text in 45.2.4.1.
Change applied in D2.2.

Cl **45**　　*SC* **45.2.4.1.2**　　　*P* **212**　　*L* **11**　　# **137**

Shimon Muller　　　　　　　　Sun Microsystems, Inc

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

The last sentence of the paragraph implies speed-dependent functionality in a speed-independent register.

SuggestedRemedy

Change the last sentence of the paragraph to read as follows:
"For 10Gb/s operation, the specific behavior...."

Proposed Response　　　*Response Status* **C**

ACCEPT.
Change applied in D2.2.

Cl **45**　　*SC* **45.2.4.1.3**　　　*P* **212**　　*L* **25-26**　　# **138**

Shimon Muller　　　　　　　　Sun Microsystems, Inc

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

See my comment against subclause 45.2.1.1.3.

SuggestedRemedy

See my comment against subclause 45.2.1.1.3.

Proposed Response　　　*Response Status* **Z**

Withdrawn.

Cl **45**　　*SC* **45.2.4.1.4**　　　*P* **212**　　*L* **41**　　# **139**

Shimon Muller　　　　　　　　Sun Microsystems, Inc

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

Typo.

SuggestedRemedy

Replace "power up" with "power down".

Proposed Response　　　*Response Status* **C**

REJECT.
'Power up' is the intention of the sentence, but it should be '..cleared to zero'
See #73.

Cl **45**　　*SC* **45.2.4.1.4**　　　　*P* **212**　　*L* **42**　　# **405**

Turner, Ed　　　　　　　　　　3Com

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

Text describing the default value of the bit is required. Also required for DTE XS.

SuggestedRemedy

Add the same text as used for other bits (default is zero).

Proposed Response　　　*Response Status* **C**

ACCEPT.
Change applied in D2.2.

Cl **45**　　*SC* **45.2.4.2**　　　　*P* **212**　　*L* **45**　　# **140**

Shimon Muller　　　　　　　　Sun Microsystems, Inc

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

Inconsistent naming/numbering of MMD registers.

SuggestedRemedy

Replace "PHY XS Status" with "PHY XS Status 1" in:
- Subclause 45.2.4.2. header
- Table 45-32 header.

Proposed Response　　　*Response Status* **C**

ACCEPT IN PRINCIPLE.
Also apply to text in 45.2.4.2 and update PICS entry with the new name.
Change applied in D2.2.

Cl **45**　　*SC* **45.2.4.2**　　　　*P* **212**　　*L* **46**　　# **141**

Shimon Muller　　　　　　　　Sun Microsystems, Inc

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

See my comment against subclause 45.2.1.2.

SuggestedRemedy

See my comment against subclause 45.2.1.2.

Proposed Response　　　*Response Status* **Z**

Withdrawn.

Cl **45**　　*SC* **45.2.4.2.2**　　　　*P* **213**　　*L* **30**　　# **142**

Shimon Muller　　　　　　　　Sun Microsystems, Inc

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

The last sentence of the paragraph implies speed-dependent functionality in a speed-independent register.

SuggestedRemedy

Change the last sentence of the paragraph to read as follows:
"For 10Gb/s operation, this bit is..."

Proposed Response　　　*Response Status* **C**

ACCEPT.
Change applied in D2.2.

Cl **45**　　*SC* **45.2.4.4.2**　　　　*P* **213-214**　　*L* **53-54**　　# **306**

Baumer, Howard　　　　　　　Broadcom

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

DTE is used for the PHY XS

SuggestedRemedy

replace DTE with PHY

Proposed Response　　　*Response Status* **C**

ACCEPT.
Change applied in D2.2.

Cl **45**　　*SC* **45.2.4.4.3**　　　　*P* **214**　　*L* **29-34**　　# **307**

Baumer, Howard　　　　　　　Broadcom

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

DTE is used for PHY XS

SuggestedRemedy

replace DTE with PHY

Proposed Response　　　*Response Status* **C**

ACCEPT.
Change applied in D2.2.

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 **45**　　*SC* **45.2.4.4.3**

Cl **45**　　　*SC* **45.2.5**　　　　　*P* **216**　　　*L* **11,15,17**　　# **144**
Shimon Muller　　　　　　　　　Sun Microsystems, Inc

Comment Type　**E**　　　*Comment Status*　**A**
　　Incorrect numbering of bits in the register.

SuggestedRemedy
　　Replace:
　　- "5.2.4" with "5.4".
　　- "5.2.6" with "5.6".
　　- "5.2.24" with "5.24".

Proposed Response　　　*Response Status*　**C**
　　ACCEPT IN PRINCIPLE.
　　Also change '23' to '5.23'.
　　Change applied in D2.2.

Cl **45**　　　*SC* **45.2.5**　　　　　*P* **216**　　　*L* **5,7**　　# **143**
Shimon Muller　　　　　　　　　Sun Microsystems, Inc

Comment Type　**E**　　　*Comment Status*　**A**
　　Inconsistent naming/numbering of MMD registers.

SuggestedRemedy
　　In Table 45-35 replace:
　　- "DTE XS Control" with "DTE XS Control 1".
　　- "DTE XS Status" with "DTE XS Status 1".

Proposed Response　　　*Response Status*　**C**
　　ACCEPT.
　　Change applied in D2.2.

Cl **45**　　　*SC* **45.2.5.1**　　　　*P* **215**　　　*L* **45**　　# **145**
Shimon Muller　　　　　　　　　Sun Microsystems, Inc

Comment Type　**E**　　　*Comment Status*　**A**
　　Inconsistent naming/numbering of MMD registers.

SuggestedRemedy
　　Replace "DTE XS Control" with "DTE XS Control 1" in:
　　- Subclause 45.2.5.1 header.
　　- Table 45-36 header.

Proposed Response　　　*Response Status*　**C**
　　ACCEPT IN PRINCIPLE.
　　Also apply to text in 45.2.5.1.
　　Change applied in D2.2.

Cl **45**　　　*SC* **45.2.5.1.2**　　　*P* **217**　　　*L* **6**　　# **146**
Shimon Muller　　　　　　　　　Sun Microsystems, Inc

Comment Type　**T**　　　*Comment Status*　**A**
　　The last sentence of the paragraph implies speed-dependent functionality in aspeed-
　　independent register.

SuggestedRemedy
　　Change the last sentence of the paragraph to read as follows:
　　"For 10Gb/s operation, the specific behavior...".

Proposed Response　　　*Response Status*　**C**
　　ACCEPT.
　　Change applied in D2.2.

Cl **45**　　　*SC* **45.2.5.1.3**　　　*P* **217**　　　*L* **20-21**　　# **147**
Shimon Muller　　　　　　　　　Sun Microsystems, Inc

Comment Type　**T**　　　*Comment Status*　**D**
　　See my comment against subclause 45.2.1.1.3.

SuggestedRemedy
　　See my comment against subclause 45.2.1.1.3.

Proposed Response　　　*Response Status*　**Z**
　　Withdrawn.

Cl **45**　　　*SC* **45.2.5.1.4**　　　*P* **217**　　　*L* **36**　　# **148**
Shimon Muller　　　　　　　　　Sun Microsystems, Inc

Comment Type　**E**　　　*Comment Status*　**R**
　　Typo.

SuggestedRemedy
　　Replace "power up" with "power down".

Proposed Response　　　*Response Status*　**C**
　　REJECT.
　　See #139.

Cl **45**   *SC* **45.2.5.2**   *P* **217**   *L* **42**   **#** 149

Shimon Muller   Sun Microsystems, Inc

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

Inconsistent naming/numbering of MMD registers.

SuggestedRemedy

Replace "DTE XS Status" with "DTE XS Status 1" in:- Subclause 45.2.5.2 header.- Table 45-37 header.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.
Also apply to text in 45.2.5.2 and update PICS entry with the new name.
Change applied in D2.2.

Cl **45**   *SC* **45.2.5.2**   *P* **217**   *L* **43**   **#** 150

Shimon Muller   Sun Microsystems, Inc

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

See my comment against subclause 45.2.1.2.

SuggestedRemedy

See my comment against subclause 45.2.1.2.

Proposed Response   *Response Status* **Z**

Withdrawn.

Cl **45**   *SC* **45.2.5.2.2**   *P* **218**   *L* **30**   **#** 151

Shimon Muller   Sun Microsystems, Inc

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

The last sentence of the paragraph implies speed-dependent functionality in a speed-independent register.

SuggestedRemedy

Change the last sentence of the paragraph to read as follows:
"For 10Gb/s operation, this bit is....".

Proposed Response   *Response Status* **C**

ACCEPT.
Change applied in D2.2.

Cl **45**   *SC* **45.2.5.4**   *P* **218**   *L* **43**   **#** 404

Turner, Ed   3Com

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

The status 2 register need the transmit local fault and receive local fault bits that the PHY XS MMD has.

SuggestedRemedy

Add transmit LF and receive LF bits plus desciptions to register 5.5.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.
Also update bit 5.1.7 to text based upon the definition for bit 4.1.7. (global LF bit).
Change applied in D2.2.

Cl **45**   *SC* **45.4**   *P* **222**   *L*   **#** 312

Baumer, Howard   Broadcom

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

45.4 and annex 45A have no provision for clause 45 register working directly in a clasue 22 electrical environment. Figure 45A-2 shows allowance for clause 22 registers to work in a clause 45 electrical environment without any electrical translation device. Figure 45A-3 allows clause 22 to work in a clause 45 environment with a translation device and figure 43A-4 allows clause 45 to work in clause 22 electricals but with a translation device. The one remaining option should also be given even billing.By not allowing for clause 45 registers to be accessed directly in a clasue 22 electrical environment the objective of making clause 45 register to be compatible to clause 22 is not met.

SuggestedRemedy

Add in a figure 45A-n that allows for clause 45 to be directly connected and working in a clause 22 electrical environment.

Proposed Response   *Response Status* **C**

REJECT.
Allowing Clause 45 registers the option to be accessed directly from a Clause 22 electrical environment would hinder interoperability. A vendor would have to choose which interface to implement and some parts would use the Clause 22 interface and some would choose the Clause 45 interface. In addition, retaining the Clause 22 electrical interface would burden the component manufacturers with supporting 5v tolerant IO.

Cl **45**   *SC* **45.4.1**   *P* **222**   *L* **15**   # **593**

Porter, Jeff   Motorola

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

Resolution of Draft 2.0 Comment 1115 "adopt[ed] an instance of the JESD8-11 standard with a VDD of 1.2V" JESD8-11 (www.jedec.org, "Free Standards") was selected by an apathetic ad-hoc.

However, JESD8-11 does not support 1.2v only operation. The choices, Normal and Wide range, are mentioned in the title of JESD8-11
2.2.1 Normal Range (1.4 to 1.6V Vdd)
2.2.2 Wide Range (0.9 to 1.6V Vdd)
In either case, the sending and receiving Vdd for this interface must track within 0.1V (Note 1 in 2.3.1 and 2.3.2)

An MDC/MDIO implmenter could select to support either Normal or Wide range since interoprability at 1.5V is maintained. If all connected parts in a system are wide range, a supply lower than 1.5V nominal could be used.
When an XGMII (HSTL JESD8-6) is present, 1.5V will be available.

SuggestedRemedy

Change 45.4.1 to read
"The electrical characteristics of the MDIO interface are defined in JESD8-11. Pin input capacitance is limited to 10pF maximum."

Retain NOTE, change to read ..."Vdd of 1.5V"

Delete Table 45-41.

Annex 45A, change 1.2V Vdd to 1.5V Vdd throughout.

Proposed Response   *Response Status* **C**

REJECT.
The MDIO track at the January interim discussed the electrical interface in depth and agreed upon the 1.2v specification that was written into D2.1.
See comment #1115 on D2.0.
A 1.5v interface, with its associated VIH(max) was regarded as too high a voltage for a long term solution.
We also want to maintain compatibility with older higher voltage interfaces.

Cl **45**   *SC* **45.4.2**   *P* **222**   *L* **49**   # **81**

Brown, Benjamin   AMCC

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

Line begins with a period

SuggestedRemedy

Remove period at beginning of line.

Proposed Response   *Response Status* **C**

ACCEPT.
Change applied in D2.2.

Cl **45**   *SC* **45.45.2.4.4**   *P* **213214**   *L* **51-52**   # **309**

Baumer, Howard   Broadcom

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

register 4.5 has both a transmit and receive local fault status bit (bits 4.5.11,10) but registers 3.5 & 5.5 do not

SuggestedRemedy

define both transmit and receive loacal fault status bits for registers 3.5, 4.5 & 5.5. Update the corresponding pics perform to reflect this change

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.
(See #308.)
Change applied in D2.2.

Cl **45**   *SC* **45.5.5.3**   *P* **227**   *L* **41**   # **488**

Dawe, Piers   Agilent

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

As far as I am aware, there is no mandate for a power down feature. It does not appear in http://www.ieee802.org/3/ae/public/jan01/hudgins_1_0101.pdf . As pointed out in 54.4.6, the text in 45.2.1.1.4 raises problems.

SuggestedRemedy

Remove item MM4.

If you want to introduce a new feature, bring a thought-through proposal and beg the group's indulgence to bend the rules.

Proposed Response   *Response Status* **C**

REJECT.
This feature existed in Clause 22 and has existed since D1.0 for 10GbE. Though the bit is mandatory, the function that it controls is implementation specific and may, in fact, be a null function.
See #487.

Cl **45**   *SC* **45-41**   *P* **222**   *L* **35**   # **80**

Brown, Benjamin   AMCC

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

No content to footnote 1

SuggestedRemedy

Either remove the footnote or add some text to describe it.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.
Remove the footnote.
Change applied in D2.2.

Cl **45**　　　*SC* **Figure 45-1**　　　　*P* **180**　　　*L* **36**　　　# **509**
Law, David J　　　　　　　　　　　3Com

Comment Type　**E**　　　*Comment Status*　**A**
Please update the figure to show more detail.

SuggestedRemedy
Include the routing of the MDC and MDIO signals to each of the illustrated MMDs. Also mark each MMD, split the DTE into separate MACs and add the STA.

Proposed Response　　　　*Response Status*　**C**
ACCEPT.
Change applied in D2.2.

Cl **45**　　　*SC* **Figure 45-2**　　　　*P* **182**　　　*L* **35**　　　# **407**
Turner, Ed　　　　　　　　　　　3Com

Comment Type　**E**　　　*Comment Status*　**A**
'Receive' label is missing from right hand arrow.

SuggestedRemedy
Add label.

Proposed Response　　　　*Response Status*　**C**
ACCEPT.
Change applied in D2.2.

Cl **45**　　　*SC* **Table 45-15**　　　　*P* **198**　　　*L* **5**　　　# **401**
Turner, Ed　　　　　　　　　　　3Com

Comment Type　**E**　　　*Comment Status*　**A**
'2.32.15:8' should read '2.33.15:8'.

SuggestedRemedy
Modify as above.

Proposed Response　　　　*Response Status*　**C**
ACCEPT.
Change applied in D2.2.

Cl **45**　　　*SC* **Table 45-26**　　　　*P*　　　*L*　　　# **45002**
Turner, Ed

Comment Type　**E**　　　*Comment Status*　**A**
Typos on D2.2.

SuggestedRemedy
Change 13 to 9 on line 32 and add RO to line 34 entry.

Proposed Response　　　　*Response Status*　**C**
ACCEPT.
Change applied in D2.3.

Cl **45**　　　*SC* **Table 45-32**　　　　*P* **213**　　　*L* **8**　　　# **402**
Turner, Ed　　　　　　　　　　　3Com

Comment Type　**T**　　　*Comment Status*　**A**
This local fault bit should not be latching high.

SuggestedRemedy
Remove '/LH' from the 'R/W' column of the local fault bit.

Proposed Response　　　　*Response Status*　**C**
ACCEPT.
Change applied in D2.2.

Cl **45**　　　*SC* **Table 45-37**　　　　*P* **218**　　　*L* **7**　　　# **403**
Turner, Ed　　　　　　　　　　　3Com

Comment Type　**T**　　　*Comment Status*　**A**
Local fault bit should not be latching high.

SuggestedRemedy
Remove '/LH' from the 'R/W' column of the local fault bit, and remove the associated text describing the latching function from 45.2.5.2.1.

Proposed Response　　　　*Response Status*　**C**
ACCEPT.
Change applied in D2.2.

Cl **45A**　　　*SC* **45A.2**　　　　*P* **248**　　　*L* **24**　　　# **522**
Law, David J　　　　　　　　　　　3Com

Comment Type　**E**　　　*Comment Status*　**A**
Typo.

SuggestedRemedy
The text 'This is arrangement is shown ...' should read 'This arrangement is shown ...'.

Proposed Response　　　　*Response Status*　**C**
ACCEPT.
Change applied in D2.2.

Cl **45A**   *SC* **45A.2**   *P* **248**   *L* **25**   **#** **152**

Shimon Muller   Sun Microsystems, Inc

Comment Type   **E**   *Comment Status* **A**
   Typo.

SuggestedRemedy
   Delete "is" between "This" and "arrangement".

Proposed Response   *Response Status* **C**
   ACCEPT.
   See #522.
   Change applied in D2.2.

Cl **45A**   *SC* **45A.2**   *P* **248**   *L* **53**   **#** **523**

Law, David J   3Com

Comment Type   **E**   *Comment Status* **A**
   Typo.

SuggestedRemedy
   Suggest the text '... voltage translation ...' should read '... voltage translator ...' to match the text in the figure.

Proposed Response   *Response Status* **C**
   ACCEPT.
   Change applied in D2.2.

Cl **45A**   *SC* **45A.2**   *P* **249**   *L* **2**   **#** **525**

Law, David J   3Com

Comment Type   **E**   *Comment Status* **A**
   Typo.

SuggestedRemedy
   The text 'This is arrangement is shown ...' should read 'This arrangement is shown ...'.

Proposed Response   *Response Status* **C**
   ACCEPT.
   Change applied in D2.2.

Cl **45A**   *SC* **45A.2**   *P* **249**   *L* **2**   **#** **153**

Shimon Muller   Sun Microsystems, Inc

Comment Type   **E**   *Comment Status* **A**
   Typo.

SuggestedRemedy
   Delete "is" between "This" and "arrangement".

Proposed Response   *Response Status* **C**
   ACCEPT.
   See #525.
   Change applied in D2.2.

Cl **45A**   *SC* **45A.2**   *P* **249**   *L* **33**   **#** **526**

Law, David J   3Com

Comment Type   **E**   *Comment Status* **A**
   Typo.

SuggestedRemedy
   Suggest the text '... voltage translation ...' should read '... voltage translator ...' to match the text in the figure.

Proposed Response   *Response Status* **C**
   ACCEPT.
   Change applied in D2.2.

Cl **46**   *SC* **46**   *P* **251**   *L* **2**   **#** **173**

Edwards, Gareth D.   Xilinx

Comment Type   **E**   *Comment Status* **A**   *In D2.2*
   Abbreviation MII in clause title is wrong.

SuggestedRemedy
   Change title to read "46. Reconciliation Sublayer (RS) and 10 Gigabit Media Independent Interface (XGMII)

Proposed Response   *Response Status* **C**
   ACCEPT.

Cl **46**   *SC* **46.1**   *P* **252**   *L* **3**   **#** **82**

Brown, Benjamin   AMCC

Comment Type   **E**   *Comment Status* **A**   *In D2.2*
   Extraneous comma

SuggestedRemedy
   Remove comma after the word "logical"

Proposed 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 **46**   *SC* **46.1**

Cl **46**   *SC* **46.1.2**   *P* **253**   *L* **29**   # **6**

Stoltz, Mario   ChipIng.de, an Intel co

Comment Type **E**   *Comment Status* **A**   *In D2.2*

Text reads "wave division multiplexed".

SuggestedRemedy

Replace with "wavelength division multiplexed".

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **46**   *SC* **46.1.3**   *P* **253**   *L* **37**   # **50**

Stephen Haddock   Extreme Networks

Comment Type **E**   *Comment Status* **A**   *In D2.2*

"LAN PHY" is not defined.

SuggestedRemedy

Replace "LAN PHYs" with "10GBASE-X and 10GBASE-R PHYs"

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **46**   *SC* **46.1.3**   *P* **253**   *L* **39**   # **154**

Shimon Muller   Sun Microsystems, Inc

Comment Type **T**   *Comment Status* **A**   *In D2.2*

The last sentence of this paragraph may be interpreted that the adaptation to the OC-192 rate is done by shrinking the minimum IPG of the MAC, which is not true.

SuggestedRemedy

Replace the last sentence of the paragraph with the following:
"10GBASE-W PHYs operate at a slightly lower effective data rate, mapping the encoded data stream into the 9.58 Gb/s STS-192 payload rate. This mapping is performed by discarding the additional interpacket gap octets that have been generated by the MAC in this mode of operation, as described in Clause 4."

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Replace the last sentence of the paragraph with the following:
"10GBASE-W PHYs operate at the STS-192 line rate of 9.95328 Gb/s, mapping the encoded data stream at a 9.58464 Gb/s payload rate. On transmit, this mapping is performed by discarding Idle control characters corresponding to the stretched interpacket gap created by the MAC in this mode of operation, and on receive, by adding interpacket gap Idle control characters as required to adapt to the XGMII RX_CLK rate."

Cl **46**   *SC* **46.1.3**   *P* **253**   *L* **39**   # **352**

Tim Warland   Nortel Networks

Comment Type **T**   *Comment Status* **A**   *In D2.2*

The text correctly indicates the payload rate in WAN mode is 9.58Gbps. But most of the document refers to 9.95328Gbps for WAN mode

SuggestedRemedy

To avoid confusion, include the "WAN mode line rate is 9.95328Gbps "

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.   See comment #154.

Cl **46**   *SC* **46.1.6.2.3**   *P* **255**   *L* **52**   # **49**

Stephen Haddock   Extreme Networks

Comment Type **E**   *Comment Status* **A**   *In D2.2*

Dates? I'll take a guess and say this is a spell-checker corrected version of "DTEs".

SuggestedRemedy

Change "Dates" to "DTEs".

Proposed Response   *Response Status* **C**

ACCEPT. This comment wins for guessing the cause corectly.

Cl **46**   *SC* **46.1.6.2.3**   *P* **255**   *L* **52**   # **155**

Shimon Muller   Sun Microsystems, Inc

Comment Type **E**   *Comment Status* **A**   *In D2.2*

Typo.

SuggestedRemedy

Replace "Dates" with "DTEs".

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **46**   *SC* **46.1.6.2.3**   *P* **255**   *L* **52**   # **83**

Brown, Benjamin   AMCC

Comment Type **E**   *Comment Status* **A**   *In D2.2*

Wrong word

SuggestedRemedy

Replace "Dates" with "DTEs"

Proposed Response   *Response Status* **C**

ACCEPT.

Cl 46   *SC* **46.1.6.5.3**   *P* **256**   *L* **44**   **#** **600**

Thaler, Pat   Agilent Technology

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

The text says: "DATA_VALID_STATUS shall assume the value DATA_VALID when a PLS_DATA.indicate transaction is generated in response to reception of a Start control character on lane 0." This may not be strong enough. As written, one error during a frame corrupting the frame Start or causing a control character after Start will cause DATA_VALID to be deasserted. A second error that creates a false Start delimiter, DATA_VALID will be asserted by the current text. The 10GBASE-X decoder does not protect against this.

SuggestedRemedy

Replace with: "DATA_VALID_STATUS shall assume the value DATA_VALID when a PLS_DATA.indicate transaction is generated in response to reception of a Start control character on lane 0 occurs if the prior RXC<3:0> and RXD<31:0> contained four Idle characters."

If this change is accepted, it changes my suggested remedy on DATA_VALID deassertion. Delete "Start or" from the remedy text.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.   Included in an editors note in D2.0. Change the first sentence to read:
"DATA_VALID_STATUS shall assume the value DATA_VALID when a PLS_DATA.indicate transaction is generated in response to reception of a Start control character on lane 0 if the prior RXC<3:0> and RXD<31:0> contained four Idle characters or a Sequence ordered set."

Modify PICS PL10 to agree.

Cl 46   *SC* **46.1.6.5.3**   *P* **256**   *L* **45**   **#** **476**

Robert Grow   Intel

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

The descriptions of conditions for deassertion of DATA_VALID_STATUS are less than clear.

SuggestedRemedy

Change the third sentance of the paragraph to read:
"DATA_VALID_STATUS shall assume the value DATA_NOT_VALID when RXC of the current lane in sequence is asserted for anything except a Start control characer in Lane 0 or an Error control character."

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. See comment #599.

Cl 46   *SC* **46.1.6.5.3**   *P* **256**   *L* **45**   **#** **599**

Thaler, Pat   Agilent Technology

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

Current text says: "Reception of an Error control character does not change the value of DATA_VALID_STATUS. DATA_VALID_STATUS shall assume the value DATA_NOT_VALID at all other times (RXC of the current lane in sequence asserted for anything except a Start control character or an Error control character received within a frame)." However, it isn't DATA_NOT_VALID at all other times because it should stay DATA_VALID while data comes in after a start character.

Also, it seems that there is a bit of a race condition between deassertion of DATA_VALID and ensuring an error condition when terminating due to reception of a control character other than Terminate or Error. If the RS immediately deasserts DATA_VALID, then how does it have time to mess up the CRC?

SuggestedRemedy

Replace with: "Reception of an Error control character or a data character does not change the value of DATA_VALID_STATUS. DATA_VALID_STATUS shall assume the value DATA_NOT_VALID when a Terminate control character is received. When DATA_VALID is asserted and any control character other than Start, Terminate, or Error is received, the RS shall deassert DATA_VALID after ensuring that the MAC will detect a FrameCheckError (see 46.3.3.1)."

This will still result in maintaining DATA_VALID when a Start character is received in the midst of a frame. Other text in the clause does ensure an error in the frame in that case. See my comment on assertion of DATA_VALID.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Text must agree with resolution of #600. Included in D2.0.

Delete second sentence of the paragraph, replace third sentence with:
"DATA_VALID_STATUS shall assume the value DATA_NOT_VALID when RXC of the current lane in sequence is asserted for anything except an Error control character. In the absence of errors, DATA_NOT_VALID is cause by a Terminate control character. When DATA_VALID_STATUS changes from DATA_VALID to DATA_NOT_VALID because of a control character other than Terminate, the RS shall ensure that the MAC will detect a FrameCheckError prior to indicating DATA_NOT_VALID to the MAC (see 46.3.3.1)."

Add new PICs item "PL11, Frame not ending with Terminate control character, 46.1.6.5.3, Ensure MAC detects CRC error, M, Yes [ ]".

Cl **46**   *SC* **46.1.6.5.3**   *P* **256**   *L* **46-48**   **#** **156**

Shimon Muller   Sun Microsystems, Inc

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

The last sentence of this paragraph is poorly written."...at all other times" implies that DATA_VALID_STATUS may become DATA_NOT_VALID as soon as the next data character after Start. The text in the parenthesis, however, is more precise and adequate.

SuggestedRemedy

Replace the last sentence of the paragraph with the following:
"DATA_VALID_STATUS shall assume the value DATA_NOT_VALID when the RXC of the current lane in sequence is asserted for anything except for a Start control character or an Error control character received within a frame."

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. See comment #599.

Cl **46**   *SC* **46.2.1**   *P* **257**   *L* **40**   **#** **606**

Thaler, Pat   Agilent Technology

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

There doesn't seem any place where the minimum receive IPG is specified. This would be a good spot.

SuggestedRemedy

Add to end of paragraph: "The IPG may be reduced by clock compensation in the PHY. The minimum IPG at the XGMII of the receiving RS is 5 octets."

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.
IPG changes may be either to reduce or increase IPG length and may be the result of RS alignment, WAN rate compensation or PHY clock rate compensation.

"The length of the interpacket gap may be changed between the transmitting MAC and receiving MAC by one or more functions (e.g., RS lane alignment, PHY clock rate compensation or 10GBASE-W data rate adaptation functions). The minimum IPG at the XGMII of the receiving RS is 5 octets."

Cl **46**   *SC* **46.3.1.1**   *P* **259**   *L* **4**   **#** **171**

Ross, Tam J   Intel

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

"The TX_CLK frequency shall be 156.25MHz +/-0.01%, one-sixty-fourth of the MAC transmit data rate." has the shall in the wrong place. The requirement is that TX_CLK is one-sixty-fourth of the MAC's clock, which implies 156.25MHz +/-0.01%. Unless it is the intention to allow bit stuffing in the RS layer.

SuggestedRemedy

The TX_CLK frequency shall be one-sixty-fourth of the MAC transmit data rate.

Proposed Response   *Response Status* **Z**

PROPOSED REJECT. WITHDRAWN. The MAC only specifies the nominal rate, it relies on the XGMII to provide a clock specification with tolerance.

Cl **46**   *SC* **46.3.1.2**   *P* **259**   *L* **14**   **#** **84**

Brown, Benjamin   AMCC

Comment Type **E**   *Comment Status* **A**   *In D2.2*

extra comma

SuggestedRemedy

Remove the comma after "TXD"

Proposed 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   Page 35 of 144

RESPONSE STATUS: O/open   W/written C/closed   U/unsatisfied Z/withdrawn   *Cl* **46**   *SC* **46.3.1.2**

Cl **46**   *SC* **46.3.1.4**   *P* **261**   *L* **5**   **#** **613**

Thaler, Pat   Agilent Technology

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

A reconcilliation sublayer does not need to maintain any count to ensure appropriate frame spacing. It merely needs to vary its delay to position the frame correctly. This text specifies unnecessary implementation details that are more appropriate to how the implementation is tested than to how it is implemented.

I submitted this comment on the D2.0 ballot when it was rejected but the reason for the rejection was not valid. The suggested remedy limits WIS buffer requirements as well as the existing text.

SuggestedRemedy

Replace second alternative with:
The RS may vary the delay of packets up to 3 octets over its minimum delay in order to align the Start character to lane 0. Note that this may cause the interframe spacing observed on the XGMII to be up to three octets shorter than the minimum produced by the MAC. Looked at over multiple frames, average interframe spacing will be equal or greater than the minimum. If an RS is using the second method, its conformance can be tested by observing the value of Deficit Idle Count (DIC). DIC is initiated at zero and calculated at the end of each interpacket gap as DIC = max(0, DIC + 12 + ifsStretchSize - IPG_length)where IPG_length is the observed interpacket gap in octets.For a conformant implementation, DIC will never exceed 3.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Add to item 2):
"Equivalent techniques may be employed to control RS alignment of the Start control character provided that the result is the same as if the RS implemented DIC as described."

Cl **46**   *SC* **46.3.2.1**   *P* **261**   *L* **25**   **#** **602**

Thaler, Pat   Agilent Technology

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

This statement: "The frequency of RX_CLK may not be derived from the received signal if the PHY data rate is not directly coupled to the MAC data rate (e.g., a 10GBASE-W PHY)." is not true. As long as the PHY clock tolerance is within the 100 PPM required for the MAC clock (and it is for all our PHYs), one can design a fractional PLL that produces the XGMII receive clock derived from the incoming clock. It doesn't matter that they are at a different frequency.

SuggestedRemedy

Delete the sentence.

Proposed Response   *Response Status* **C**

ACCEPT. Included in D2.2.

Cl **46**   *SC* **46.3.2.1**   *P* **261**   *L* **27**   **#** **603**

Thaler, Pat   Agilent Technology

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

The RX_CLK tolerance was deleted. It should not have been since the PHY is allowed to create RX_CLK. Also, since it may be derived from the PHY recovered clock by means other than a simple divide down, it is necessary to spec its accuracy even when derived from the PHY recovered clock.

Also, I note that some of our clock tolerance specs use 100 PPM and some use +/- 0.01%. They are equivalent, but consistency would be nice. I've used % in the suggested text to match TX_CLK.

SuggestedRemedy

Replace the last sentence of the paragraph with: When the receive data rate at the PHY is within tolerance, the RX_CLK frequency shall be 156.25MHz +/-0.01%, one-sixty-fourth of the MAC transmit data rate.

This wording is such that the PHY does not have to monitor the tolerance of the received clock. It just has to ensure that its output is in spec given in spec input.

Proposed Response   *Response Status* **C**

ACCEPT. Included in D2.2. Also edit PICs entry FS9 to add tolerance.

Cl **46**   *SC* **46.3.2.1**   *P* **261**   *L* **31**   # **178**

Edwards, Gareth D.   Xilinx

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

Restrictions on when and how the RX_CLK signal can transition from local to recovered have been dropped in the rewrite.

SuggestedRemedy

Add the following paragraph (shamelessly plagiarised from Shimon's accepted comment #255 on D2.0):

"Transitions from nominal clock to recovered clock or from recovered clock to nominal clock shall be made only while RXC<3:0> are all asserted. During the interval between the detection of activity on the medium and the placing of the Start control character on the XGMII, and after the PHY has successfully locked onto the recovered clock, the PHY may extend a cycle of RX_CLK by holding it in either the high or the low condition for an interval that shall not exceed one nominal clock period. Following the assertion of all control signals RXC<3:0> at the end of a frame, the PHY may extend a cycle of RX_CLK by holding it in either the high or the low condition for an interval that shall not exceed one nominal clock period."

Proposed Response   *Response Status* **Z**

REJECT. WITHDRAWN. Mr. Edwards is thanked for reviewing the integration of D2.0 comments into D2.1. The suggested remedy is overly restrictive, and Mr. Muller was unable to attend comment resolution as chair of a parallel track. He helped draft the D2.1 text, and the early comment database does not reflect these actions.

Complicated limitations on switching clocks like that proposed in comment D2.0 #255, was required when a continous receive clock is not present and clock switching was required on a frame-by-frame basis. All that is required for 10 Gb/s is that the switch of clock sources not generate a runt clock pulse, which the current text specifies.

Cl **46**   *SC* **46.3.2.2**   *P* **261**   *L* **46**   # **157**

Shimon Muller   Sun Microsystems, Inc

Comment Type **E**   *Comment Status* **A**   *In D2.2*

Typo.

SuggestedRemedy

Replace "TXD, and TXC" with "RXD and RXC". Delete the comma.

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **46**   *SC* **46.3.2.2**   *P* **261**   *L* **50**   # **477**

Robert Grow   Intel

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

The paragraph is redundant with text in 46.3.3.1 and can be interpreted ambiguously.

SuggestedRemedy

Delete the paragraph.

Proposed Response   *Response Status* **C**

REJECT.

Cl **46**   *SC* **46.3.2.3**   *P* **263**   *L* **45-46**   # **158**

Shimon Muller   Sun Microsystems, Inc

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

The reference provided in this paragraph is inadequate, since it refers to the WIS only. A broader issue is that currently there is no provision for a loopback function in the RS. Although we have not done this in the past, many implementations have this function. It allows to verify the functionality of all the layers in a DTE, excluding the Physical Layer. I believe it would be beneficial to provide some guidance to implementors to that effect.

SuggestedRemedy

1. Replace this paragraph with a new subclause as follows:
"46.3.3 Loopback
An implementation of the XGMII may optionally provide a loopback function in the Reconciliation Sublayer. In this mode of operation, the data and control characters transmitted on TXD<31:0> shall be looped back to RXD<31:0>, the control signals TXC<3:0> shall be looped back to RXC<3:0>, and the TX_CLK shall be looped back to to RX_CLK. While in the loopback mode, the RS shall transmit a continuous stream of Idle characters to the Physical Layer, and shall ignore all data presented to it by the Physical Layer."

2. Provide a management attribute in clause 30 for a loopback mode in the RS.

3. Renumber the subsequent subclauses.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Delete the paragraph, we don't need anymore loopback points.

Cl **46**   *SC* **46.3.3.1**   *P* **263**   *L* **52**   # **478**

Robert Grow   Intel

Comment Type   **T**   *Comment Status*   **A**   *Frame error*

The paragraph is incomplete in definition of conditions causing a CRC error.

SuggestedRemedy

Change the first sentence to read:
"If, during frame reception (i.e., when DATA_VALID_STATUS = DATA_VALID), a control
character other than a Terminate control character is signaled on a received lane, the RS . . ."

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.   Included in D2.2.
Change the first sentence to read:
"If, during frame reception (i.e., when DATA_VALID_STATUS = DATA_VALID), a control
character other than a Terminate control character is signaled on a received lane, the RS . . ."

In addition, add to end of paragraph: "The RS generates eight PLS_DATA.indicate primitives for
each Error control character received within a frame, and may generate eight
PLS_DATA.indicate primitives to ensure FrameCheckError when a control character other than
Terminate causes the end of the frame."

Cl **46**   *SC* **46.3.3.1**   *P* **263**   *L* **52**   # **601**

Thaler, Pat   Agilent Technology

Comment Type   **T**   *Comment Status*   **A**   *Frame error*

Text does not cover errors with other control characters happening during frame reception. For
instance, the case where the Terminate character has been corrupted.

SuggestedRemedy

replace "an Error control character" with "any control character other than Terminate"

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.   See #478.

Cl **46**   *SC* **46.3.3.1**   *P* **263**   *L* **52**   # **604**

Thaler, Pat   Agilent Technology

Comment Type   **T**   *Comment Status*   **R**   *Frame error*

This subclause needs to also include a requirement to create a FrameCheckError when an E is
detected in any lane on in the same transfer as the T character. If it doesn't, the error protection
provided by the XGXS and 10GBASE-X is compromised.

This comment is being resubmitted. The response indicated that the PCS is required to
propagate such an error back into the frame, but it doesn't and it would be more complex to fix in
the PCS than in the RS.

The situation is with a 10GBASE-X PCS, an error occurs during the frame that changes the
disparity in, for example, lane 3 but it doesn't cause a disparity error. That is, it is an error that
changes a non-disparity-flipping character into disparity-flipping character or vice versa, the new
character is correct for the current disparity, and the remaining characters in that lane to the end
of the packet are neutral disparity. The Terminate character falls in an earlier lane such as lane
0. The 10GBASE-X PCS will detect an error in the K that follows the last data byte in lane 3.
Therefore, the Error character will be in lane 3 of the transfer with the Terminate character in
lane 0.

SuggestedRemedy

Replace: "If, during frame reception, an Error control character is signaled on a receive lane, the
RS shall ensure that the MAC will detect a FrameCheckError in that frame."
with:
"If an Error control character is signaled during frame reception or on the same RX_CLK as the
Terminate character of a frame, the RS shall ensure that the MAC will detect a
FrameCheckError in that frame."

Proposed Response   *Response Status*   **C**

REJECT.   Because PCS types may vary in error symptoms like the disparity error discussed in
the comment any error that is detected outside the frame must be propagated into the frame by
the PCS. While it is possible for the RS to require Idle in the Terminate column, that solution
might not be adaquate for a future PCS (if any).

The group agreed that this problem should be solved, but voted 10:1 in a straw poll that the PCS
should handle this. Subsequently, the group working on clause 48 agreed that they would
accept a comment on this problem and fix it in the PCS.

Cl **46**　　*SC* **46.3.3.1**　　　　*P* **263**　　　*L* **54**　　　# **85**

Brown, Benjamin　　　　　　　AMCC

Comment Type　**E**　　*Comment Status*　**R**　　　　　*Frame error*

Wrong word

SuggestedRemedy

Replace "frame data sequence" with "frame check sequence"

Proposed Response　　　*Response Status*　**C**

REJECT. The MII refers to delivering the result of this function in the last nibble(s) at the end of the received frame. The clause 46 text is identical to that in clause 35, having been changed during 802.3z development because it was not felt necessary to restrict the implementer to changing the last four bytes, just that the CRC test fail.

Cl **46**　　*SC* **46.3.3.3**　　　　*P* **264**　　　*L* **16**　　　# **177**

Edwards, Gareth D.　　　　　　Xilinx

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

It is not clear that the Start control character and the SFD may legally appear in the same column of XGMII data.

SuggestedRemedy

Add the following text to the end of clause 46.3.3.3:"If there is preamble shrinkage, the SFD may be in same column as the Start control character."

Proposed Response　　　*Response Status*　**C**

ACCEPT.

Cl **46**　　*SC* **46.3.4**　　　　*P* **264**　　　*L* **24**　　　# **86**

Brown, Benjamin　　　　　　　AMCC

Comment Type　**E**　　*Comment Status*　**A**　　　　　*In D2.2*

double period

SuggestedRemedy

Remove one of the 2 periods after the word "path"

Proposed Response　　　*Response Status*　**C**

ACCEPT.

Cl **46**　　*SC* **46.3.4**　　　　*P* **264**　　　*L* **32,34,48,5**　　　# **560**

Dedrick, Joel H.　　　　　　　PMC-Sierra

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

Based on reflector discussion, this text is not an accurate description of the semantic meaning of Local Fault and Remote Fault, and in fact the names themselves are misleading. Local Fault and Remote Fault do not mean "local" and "remote" respectively, since if a PCS detects a fault in the outbound direction the appropriate action is (per reflector discussion) to transmit a Local Fault code to the far-end RS. The actual meaning of the two is:

Local Fault: A fault has been detected somewhere in the data path which flows in the same direction as the LF message itself, (implying the detection was upstream of or before the point where LF is generated).
Remote Fault: A fault has been detected somewhere in the data path which flows in the opposite direction as the RF message itself.

SuggestedRemedy

1) Make the following substitution throughout the document:

"Local Fault" becomes "Forward Path Fault"
"Remote Fault" becomes "Return Path Fault"

2) Replace the sentences contained in lines 32-34 on page 264 ("Though most fault...   PHY with a Local Fault Status") with the following text:
Faults may be detected by any phy sublayer in either direction of data flow. Any error detected by a layer below the RS should be signalled only in the direction in which the error exists, using the Forward Path Fault message.

3) Replace lines 48-50 on page 264 with the following text:
The RS reports the fault status of the link. Forward Path Fault indicates a fault detected on the data path in the direction in which the FPF message travels. Return Path Fault indicates a fault has been detected on the data path in the direction opposite to that in which the RPF message travels. The RS layer terminates FPF messages and generates RPF messages by implementing the link fault state machine, Figure 46-9.

Proposed Response　　　*Response Status*　**C**

REJECT.   To many, the suggested remedy is not an improvement over the current language. The names in the suggested remedy are perhaps clearer to some implementers, but provide no improvement in clarity to a network manager.

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 **46**　　*SC* **46.3.4**

Cl **46**   *SC* **46.3.4**   *P* **264**   *L* **41-43**   # **351**

Tim Warland   Nortel Networks

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

The choice for the Data Octets of Local Fault and Remote Fault could take better advantage of bits available to them. A 2-bit error could result in a Local Fault appearing as a Remote Fault and vica versa. This could easily be made more robust by choosing different values.

SuggestedRemedy

Change the Lane 3 Value of Local Fault to 0x66, and that of Remote Fault to 0x99. This offers more protection against bit corruption.

Proposed Response   *Response Status* **C**

REJECT.
The current code points combined with encoding properties and the Link Fault state machine are more than adaquate. On the XGMII, two parallel signals have to be corrupted. This is much less likely than two bits corrupted in a serial transmission line. The current data values when encoded for transmission probably have greater distance than two bits. For example 8B/10B produces codes with four bits different plus the disparity protection of the code. The recommended values are not guaranteed to produce any greater protection than the chosen values when scrambled by the 64B/66B encoder for transmission. The Link Fault state machine also provides robustness by requiring multiple occurances of a Sequence code before changing state.

Cl **46**   *SC* **46.3.4**   *P* **265**   *L* **38**   # **314**

Baumer, Howard   Broadcom

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

col_cnt does not increment properly
col_cnt is defined as incrementing at RX_CLK rate which is 1/2 the byte rate (RX_CLK is a DDR clock). this will cause the "Link Fault Signaling State machine" to want to see 3 sequence events every other time instead of in a row.

SuggestedRemedy

Change col_cnt descriptio to increment at the RX transfer rate.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Included in D2.2.
There are a number of bad assumptions in the comment. The RX_CLK rate is the DDR rate (rate is not the same as frequency). An active edge of RX_CLK occurs every four MAC octet times. The state machine transitions to FAULT when 4 Sequence ordered sets are received with a maximum separation of 128 columns between any two Sequence ordered sets (no sequential or every other column requirement). To clarify, change the last sentence of the definition of col_cnt to: "This counter increments at RX_CLK rate (on both the rising and falling RX_CLK transitions) unless reset.

Cl **46**   *SC* **46.3.4**   *P* **265**   *L* **45**   # **59**

Yariv, Anafi   Galileo Technology

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

variable link_fault defined to have 3 possible values:
OK, local, remote fault. the variable seq_type also can have 3 values:
local, remote fault or other. In Figure 46-9 in state FAULT the value of seq_type is assigned into link_fault. It is not defined what is the value of link_fault in case seq_type had value other then local or remote fault.

SuggestedRemedy

in page 265 line 45 add another value to link_fault :
"Other fault; unrecognized fault."
in page 266 line 23 change the text:
"b) link_fault = Local Fault or Other fault
The RS shall continuously generate Remote Fault Sequence ordered_sets."

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Included in D2.2 Editors Note. There is a deficiency in the state machine related to the handling of "Other" Sequence ordered sets. The state machine should not enter FAULT for "Other" Sequence ordered sets.

Only two fault values are defined, Local and Remote. The intent when reserving values is to maximize their use for future functions. The committee might want to use the Sequence ordered set for signaling something other than faults in the future, that is why reception of the required number of other Sequence ordered should set link_fault to OK and not "other_fault".

Change "sequence" to "fault_sequence" in the state machine. Change the definition of sequence to fault sequence and replace "and data a octet in lanes 1,2,3 to "data octets in lanes 1, 2, 3 indicating Local Fault or Remote Fault."

Cl **46**   *SC* **46.3.4**   *P* **265**   *L* **45**   # **460**

Lynskey, Eric   UNH IOL

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

The link_fault variable is set in the FAULT state by the value of the seq_type variable. The seq_type variable can take on one of three values; Local Fault, Remote Fault, or Other. However, the link_fault variable can only take on a value of OK, Local Fault, or Remote fault. It should be made clear what happens when the RS receives multiple Sequence ordered_sets that are not Local Fault or Remote Fault.

SuggestedRemedy

Add to the definition of link_fault: Other; Sequence ordered_set other than Local or Remote fault detected by the PHY.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. See related response #59.

Cl **46**　　*SC* **46.3.4**　　　　　　*P* **265**　　　*L* **49**　　　*#* **51**

Stephen Haddock　　　　　　　Extreme Networks

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

link_fault gets assigned the value of last_seq_type, but there is no mapping of last_seq_type = Other to a link_fault value.

SuggestedRemedy

Change description of value "OK" to "OK; No fault or last_seq_type = Other."

Proposed Response　　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.　Also see comment #59.

Cl **46**　　*SC* **46.3.4**　　　　　　*P* **266**　　　*L* **27**　　　*#* **461**

Lynskey, Eric　　　　　　　UNH IOL

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

This section does not say what happens when link_fault = Other. If the RS is receiving valid Sequence ordered_sets, then it will be stuck in the FAULT state, and the link_fault variable will be set to something other than Local fault or Remote fault. It should be set to Other, even though the definition of link_fault does not allow this (see an earlier comment). If the RS is receiving valid Sequence ordered_sets that are not Fault messages, then it should be allowed to still send MAC frames, and this should be made clear in either the text or state diagram.

SuggestedRemedy

Add a case (d) to the textual description of how the link_fault variable controls the output of the RS. d) link_fault = Other
The RS shall send MAC frames as requested through the PLS service interface. In the absence of MAC frames, the RS shall generate Idle control characters.

Proposed Response　　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE. See response #59.

Cl **46**　　*SC* **46.4**　　　　　　*P* **266**　　　*L* **35**　　　*#* **353**

Tim Warland　　　　　　　Nortel Networks

Comment Type　**E**　　　*Comment Status*　**A**　　　　　　　*In D2.2*

second paragraph change from "High Speed Transceiver Logic, specified for a 1.5 volt output buffer supply voltage (HSTL)"

SuggestedRemedy

to "High Speed Transceiver Logic (HSTL), specified for a 1.5 Volt output buffer supply voltage."

Proposed Response　　　　*Response Status*　**C**

ACCEPT.

Cl **46**　　*SC* **46.4**　　　　　　*P* **266**　　　*L* **45-48**　　　*#* **4**

Vinu Arumugham　　　　　　Cisco Systems, Inc.

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

The AC test load under which timing measurements are performed should be unambiguously specified. Fig 46-11 cannot be used as a test load (if that was intended) because it has optional circuit elements.

SuggestedRemedy

Replace lines 45-48 with the following text:
ReplacementTextStart
The XGMII chip-to-chip signals shall meet the timing requirements shown in Figure 46-12.
Driver timing measurements shall be performed at the pins/balls of the driving device. The HSTL (EIA/JESD8-6) Class I AC test load circuit should be used with CLOAD changed to 10pF. The 10pF capacitance includes capacitance from all sources.
Vddq/2 shall be used as the timing reference level.
ReplacementTextEnd
In practice, measurements are performed at the receiver in the test circuit and the delay of the transmission line is subtracted out to obtain the delay at the driver pins/balls.

Proposed Response　　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.　Make edits to text to change measurement point to driver output with the optional pull-up required leaving the 10 pF total load.

Cl **46**　　*SC* **46.5.3.4**　　　　　*P* **272**　　　*L* **37**　　　*#* **584**

Rich Taborek　　　　　　　nSerial Corporation

Comment Type　**E**　　　*Comment Status*　**A**　　　　　　　*In D2.2*

FS16, RXD clock, says it is Synchronous to TX_CLK. Should be RX_CLK.

SuggestedRemedy

Change TX_CLK to RX_CLK in Value/Comment column.

Proposed Response　　　　*Response Status*　**C**

ACCEPT.

Cl **46**　　*SC* **Fig 46-1**　　　　*P* **252**　　　*L* **31**　　　*#* **313**

Baumer, Howard　　　　　　Broadcom

Comment Type　**E**　　　*Comment Status*　**A**　　　　　　　*In D2.3*

XAUI is not defined for figure 46-1

SuggestedRemedy

add XAUI definition to the legend

Proposed Response　　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.　XAUI is in the legend, third row of right column. The commenter subsequently indicated it is XGSX that is not defined. Add XGSX and its expansion to the figure.

TYPE: TR/technical required T/technical E/editorial   COMMENT STATUS: D/dispatched A/accepted R/rejected   SORT ORDER: Clause, Page, Line, Subclause　　Page 41 of 144

RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn　　　　　　　　　　　　　　　　　　　　　　　　　*Cl* **46**　　*SC* **Fig 46-1**

Cl **46** *SC* **Figure 46-9** *P* **265** *L* **17** *#* **473**
Lynskey, Eric   UNH IOL

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

It is theoretically possible for two link partners with two XAUI/XGXS to space 4 ||Q|| columns over approximately 188 columns. This means that under certain circumstances, the XGMII will not be able to see 4 ||Q|| in 128 columns, even though the XGXS is sending them up as ""fast"" as it can. The number of columns should be increased from 128 to 256.

SuggestedRemedy

On page 265 lines 17 and 28, change to col_cnt > 255. On page 266, lines 13 and 15, change 128 to 256.

Proposed Response *Response Status* **Z**

REJECT. WITHDRAWN. The window for reception of the four Sequence ordered sets is not 128. Each Sequence can be as many as 128 columns after the previous one. So, the four sequences can be equally spread over a maximum of 385 columns (3*128+1) and the fault will be detected.

Cl **46** *SC* **Figure 46-9** *P* **265** *L* **23** *#* **464**
Lynskey, Eric   UNH IOL

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

The seq_cnt <= 0 statement is unnecessary in the FAULT state. This variable is set to zero upon entrance to both the NEW_FAULT_TYPE and INIT states. Since it is evaluated for any of its exit conditions, it is a redundant resetting of the variable.

SuggestedRemedy

Remove the seq_cnt <= 0 statement from the FAULT state.

Proposed Response *Response Status* **C**

ACCEPT. Included in D2.2

Cl **46** *SC* **Figure 46-9** *P* **265** *L* **7** *#* **463**
Lynskey, Eric   UNH IOL

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

The col_cnt <= 0 statement is redundant. The col_cnt variable gets set to zero whenever the COUNT state is entered. Since this variable is not evaluated in the exit transition from INIT to COUNT, there is no need to have it reset upon entrance to INIT.

SuggestedRemedy

Remove the col_cnt <= 0 line from the INIT state.

Proposed Response *Response Status* **C**

ACCEPT. Included in D2.2.

Cl **47** *SC* *P* *L* *#* **205**
Kesling, Dawson   Intel

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

"Table" and "Figure" should not be capitalized mid-sentence.

SuggestedRemedy

Change "Table" to "table" on p. 278 l. 8, p. 279 l. 40, p. 281 l. 11, p. 283 l. 36, p. 284 l. 42. Change "Figure" to "figure" on p. 281 l. 11.

Proposed Response *Response Status* **Z**

REJECT.

Cl **47** *SC* *P* *L* *#* **206**
Kesling, Dawson   Intel

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

Editors' notes no longer needed.

SuggestedRemedy

Remove editors's notes from p. 278 l. 16 and p. 283 l. 39.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **47** *SC* **47.1** *P* **276** *L* **45** *#* **621**
Christensen, Benny   GIGA

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

The item d) mentions low voltage swing. Now the differential swing is raised to 800 mVpp, one may discuss whether this is low voltage. (LVDS specs typical max. 400 mVpp)

SuggestedRemedy

Proposed Response *Response Status* **C**

REJECT. LVDS is 400 mVp, or 800 mVp-p.

Cl **47**   *SC* **47.1**   *P* **276**   *L* **54**   **#** **622**
Christensen, Benny   GIGA

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

A formal / functional / general description of the XAUI characteristics would be logical feasible here as the folowing text starts to refer to the XAUI lanes and deskew functionality.

ie. AC coupled differential dual 4 lane interface

Also define something a la (to get the right nomenclature):
XAUI: path = 4 lanes
lane: 8B/10B coded 3.125 Gb/s differential
interface: 2 XAUI datapath in opposite directions

SuggestedRemedy

Insert XAUI functional characteristics for logical reading clearness.

Proposed Response   *Response Status*   **C**

REJECT. This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle as an editorial comment.

Cl **47**   *SC* **47.1.1**   *P* **277**   *L* **9**   **#** **623**
Christensen, Benny   GIGA

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

The summary in item c) is short and unprecise compared to item b)

insert 8B/10B decode and deskew

The deskew process is not described in this clause. Is deskewing in XGSMII, XGXS or the PCS. I guess it is in the XGXS sublayer (as govern by the the clause title) but it needs a reference.

SuggestedRemedy

insert: ...XAUI lanes and 'it 8B/10B decodes and' deskews ...

deskew description or relevant reference

Proposed Response   *Response Status*   **C**

REJECT. This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle as editorial comment.

Cl **47**   *SC* **47.1.2**   *P* **277**   *L* **22**   **#** **624**
Christensen, Benny   GIGA

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

missing 'up' to approx....

SuggestedRemedy

insert 'up'

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE. Use suggested remedy of #7.

Cl **47**   *SC* **47.1.2**   *P* **277**   *L* **22**   **#** **7**
Stoltz, Mario   ChipIng.de, an Intel co

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

Text reads "...distance to approx...".

SuggestedRemedy

Replace with "...distances of approx..." which is more easily understood.

Proposed Response   *Response Status*   **C**

ACCEPT. Use "maximum distance of approximately 50 cm". Similar change to p. 279 l. 35 and p. 285 l. 23. (Related comment: #624.)

Cl **47**   *SC* **47.1.2**   *P* **277**   *L* **22**   **#** **204**
Kesling, Dawson   Intel

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

7 cm implies excessive accuracy, and may be too pessimistic.

SuggestedRemedy

Change "7 cm" to "10 cm".

Proposed Response   *Response Status*   **Z**

REJECT. 46.1.4 also uses 7 cm.

TYPE: TR/technical required T/technical E/editorial   COMMENT STATUS: D/dispatched A/accepted R/rejected   SORT ORDER: Clause, Page, Line, Subclause   Page 43 of 144

RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *Cl* **47**   *SC* **47.1.2**

Cl **47** *SC* **47.1.3** *P* **277** *L* **23** **#** **625**
Christensen, Benny GIGA

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

Unclear use of 'rate' / 'data stream' / meaning capacity?

It depends on how the words are interpreted:
to me 'rate' means either a serial Y Gb/s data rate
or a N bit wide parallel bus with the rate Y/N Gbaud. (In XGMII N=32)
I interprete a 'stream' as serial data

'10 Gb/s MAC data stream' seems a bit unclear as it actually is 32 bit * 311 MBaud?

SuggestedRemedy

use the wording 10 Gb/s data capacity or specific bus width and parallel baud rate.

Furhtermore, move clause 47.1.3 to after 47.1.4, as the latter is a more general description (logically coming first) whereas the first is a more technical specific paragraph

Proposed Response *Response Status* **C**

REJECT. This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle as editorial comment.

Cl **47** *SC* **47.1.3** *P* **277** *L* **26** **#** **170**
Ross, Tam J Intel

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

"The XGMII Extender shall support the 10 Gb/s data rate of the XGMII." is not verifiable. What does "support" imply. Save the shall statementsfor precise or quantifiable requirements.

SuggestedRemedy

"The XGMII Externder supports the 10 Gb/s data rate of the XGMII."Or, if the intent is to specify the allowed clock frequencies, give them.

Proposed Response *Response Status* **C**

REJECT. This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle.

Cl **47** *SC* **47.2** *P* **277** *L* **50** **#** **626**
Christensen, Benny GIGA

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

text says 'data stream striped over four lanes ...', which seems incorrect. Lanes refers to XAUI not the 32 bit XGMII.

SuggestedRemedy

replace 'striped over four lanes' with
a) (4 octets)
b) (32 bit data word)

and it is not 'striped'. I guess 'distributed' is the right word

Proposed Response *Response Status* **C**

REJECT.   XGMII data is arranged into lanes per 46.1.5.

Cl **47** *SC* **47.2** *P* **278** *L* **1** **#** **627**
Christensen, Benny GIGA

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

missing word 'subclauses' 48.2 and 48.3 ....

line 4: a mapping scheme (ore reference to annex 44-A) relevant here.

SuggestedRemedy

insert word 'subclauses'

bit mapping reference

Proposed Response *Response Status* **C**

REJECT. This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit only the mapping part of this comment in the next ballot cycle.

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 **47** *SC* **47.2**

Cl **47**   *SC* **47.2**   *P* **278**   *L* **5-14**   # **561**

Dedrick, Joel H.   PMC-Sierra

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

Signal Detect:

Analog signal detect for XAUI should be removed from the specification, because:
It is not needed -- it was proposed as an alternative fault signalling mechanism. This replicates an existing well-defined and simple method for achieving the same end.
It reduces the reach, bit error rate performance, and reliability of all XAUI implementation

The comment which spawned this requirement (#930 to D2.0) follows:

"If the XGXS is providing the PCS and PMA functionality, we need to add signal detect line to the XGXS interface because a PHY end that is a simple retimer is unlikely to want to generate LF codes."

This comment presumes the existence of a simple retimer in the PMA, which notices that a signal is absent at the optical interface, and wants to send this notification over XGXS (XAUI) without use of a LF code, presumably by squelching its output. Since the XGXS is AC coupled, this will result in differential inputs at the DTE end which are biased at their switching point. The addition of a signal detect function is an attempt to recognize this condition and ensure that the lack of a valid signal is detected at the DTE.

This solution is not needed because even simple retimers could easily implement the transmit process (Fig. 48-6) which outputs the LF sequence interspersed with randomized idles when a fault condition such as inactive signal detect input from the optics is present. This method for communicating LF is extraordinarily simple -- there's no reason to define another one.

This new function will significantly impair performance and reliability of all XAUI implementations in support of a rare case. Here's why:
Typical forward crosstalk for 50 Ohm signals implemented with stripline construction and 9 mil space is about 5%. This value saturates in only 2 cm of side-by-side run for the risetimes typical of XAUI signals. 5% crosstalk with a 800 mV single-ended drive results in 40 mV of single-ended noise coupled to the line, from a single interferer and a coupled length of 2 cm. For even modest run lengths, and including other noise effects, a minimum of 100mV of effective differential noise would be expected. This is by no means worst case.

In theory, signal detect functionalilty could be implemented either as an analog envelope detector, or by differentially biasing the inputs and then detecting a continuous zero at the input. But, an envelope detector which can reliably detect a signal smaller than the 200mV XAUI sensitivity but larger than the 100mV expected noise across process, voltage, and temperature is a challenging design, which would significantly complicate the already difficult XAUI receiver. This receiver is required by the deterministic jitter and ISI requirements to provide gain to a pulse of less than 200 ps. duration and 200 mV differential amplitude. Such a high gain, wide bandwidth amplifier will almost certainly oscillate if its inputs are biased at zero differential voltage, with undriven, AC coupled inputs. So, if squelched outputs on XAUI lanes are an acceptable way to indicate failure, then offset bias must be used to prevent oscillation. However, 100mV of differential offset would directly subtract from the sensitivity of the receiver, resulting in a severe reduction in reach. In addition, it would displace received edges in time,

adding the equivalent of .1 to .2 UI of deterministic jitter. This seems like an unacceptable penalty.

SuggestedRemedy

Remove paragraph beginning on line 5 of page 278, and remove table 47-1.
Remove PICS item F11 in table 47.6.4.2

Proposed Response   *Response Status*   **Z**

REJECT. This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle.

Cl **47**   *SC* **47.2**   *P* **278**   *L* **5-14**   # **2**

Subtask Force

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

Comment #930 against D2.0 was formerly resolved, but due to confusion between the commentor, task force, and/or editors, the Task Force Chair recommended that the comment be formally reconsidered at the March '01 Plenary. The original comment stated:
"If the XGXS is providing the PCS and PMA functionality, we need to add signal detect line to the XGXS interface because a PHY end that is a simple retimer is unlikely to want ot generate LF codes."
The following changes were made in D2.1 in response to the Jan '01 Interim resolution of this comment: Added paragraph beginning on line 5 of page 278; added table 47-1, added PIC's entries F10, F11 and F12 to table 47.6.4.2.
After XAUI subtask force review and discussion at the March '01 Plenary, the commentor withdrew the orginal comment.

SuggestedRemedy

From D2.1, remove the paragraph beginning on line 5 of page 278 and remove table 47-1. (This paragraph and table have been put in an editor's box on p. 276 of D2.2. The editor's box will be removed.). Remove PICS item F10, F11 and F12 from table 47.6.4.2.

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **47**   *SC* **47.3**   *P* **279**   *L* **21**   # **172**

Ross, Tam J   Intel

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

Many of the electrical characteristics (jitter, amplitude, template) cannot be met for all possible data patterns. There is no statement restricting any of the electrical requirements to valid data patterns.

SuggestedRemedy

Add to last line of 47.3: "Unless otherwise specified, the electrical characteristics defined in 47.3 shall be met for all valid code groups."

Proposed Response   *Response Status*   **C**

ACCEPT. (Editor notes that "valid code groups" is defined in 36.2.4.3, and is not re-defined in any of the new 10G clauses.)

Cl **47**   *SC* **47.3.2**   *P* **279**   *L* **34**   **#** **629**
Christensen, Benny   GIGA

Comment Type **T**   *Comment Status* **R**
inconsisten use of 'path' / 'lane'

are the synonyms

SuggestedRemedy
use consistent wordings

Proposed Response   *Response Status* **C**
REJECT. Paths and lanes are different. Each is defined earlier in the clause.

Cl **47**   *SC* **47.3.3**   *P* **279**   *L* **40**   **#** **214**
Kesling, Dawson   Intel

Comment Type **T**   *Comment Status* **R**
100 ohm load is under-specified.

SuggestedRemedy
Replace, "The transmitter load ... unless otherwise noted." with, "Unless noted otherwise, the load for these measurements shall be 100 ohms +/- 5% differential, and have better than 30 dB return loss to 2.5 GHz."

Proposed Response   *Response Status* **C**
REJECT. This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle.

Cl **47**   *SC* **47.3.3.1**   *P* **279**   *L* **47**   **#** **630**
Christensen, Benny   GIGA

Comment Type **T**   *Comment Status* **R**
amplitude meaning swing
mV peak-to-peak => mVpp

Absolute voltage constraints values on output voltages seem redundant/obsolete as the XAUI lanes are AC coupled.

SuggestedRemedy
remove absolute driver voltages constraints

Proposed Response   *Response Status* **C**
REJECT. Absolute voltages are used to control the DC voltage applied across the AC coupling.

Cl **47**   *SC* **47.3.3.2**   *P* **280**   *L* **5**   **#** **631**
Christensen, Benny   GIGA

Comment Type **E**   *Comment Status* **R**
insert ISI after (EMI), as shorter transitions also tends to spread pulse energy into neighbouring bit periods due to the HF group delay variations

SuggestedRemedy
insert ISI after (EMI)

Proposed Response   *Response Status* **C**
REJECT. This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle.

Cl **47**   *SC* **47.3.3.4**   *P* **281**   *L* **3**   **#** **215**
Kesling, Dawson   Intel

Comment Type **T**   *Comment Status* **R**
Differential return loss of 10 dB to 2.5 GHz is not necessary and restricts some implementations.

SuggestedRemedy
Change "differential return loss better than 10 dB and a common mode" to "differential return loss better than 10 dB from 100 MHz to 1.56 GHz and better than 8 dB from 1.56 GHz to 2.5 GHz, and a common mode"

Proposed Response   *Response Status* **C**
REJECT. This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle.

Cl **47**   *SC* **47.3.3.4**   *P* **281**   *L* **6**   **#** **633**
Christensen, Benny   GIGA

Comment Type **T**   *Comment Status* **R**
'Test source impedance' meaning
Measured / load / nominal ... impedance

also variations +/- % missing for load values (or reference to other clauses) or not required if nominal.

SuggestedRemedy
change wording to: 'Nominal load impedance ...'

Proposed Response   *Response Status* **C**
REJECT. Test source impedance is the reference impedance for RL measurement.

Cl **47**   *SC* **47.3.3.5**   *P* **281**   *L* **11**   **#** 219

Kesling, Dawson   Intel

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

Driver jitter components are undefined at both the near and far-ends. (Informative values are included in table 47-6.)

SuggestedRemedy

Include the informative values for near-end and far-end TJ and DJ in the normative text of section 47.3.3.5. Do not add these values to table 47-2. Specifically: (1) Add the following sentence on p.281 l. 16, "Total jitter at the far end of the compliance interconnect shall be less than 0.60 UI peak-peak. The deterministic component shall be less than 0.36 UI peak-peak at this same point."; (2) add a paragraph break after the above sentence and before the compliance interconnect description that follows; (3) add a paragraph break just before the last sentence of 37.3.3.5 and just after the description of the compliance interconnect; (4) add the following sentence to the end of 47.3.3.5 after the near-end test description, "Total near end jitter shall be less than 0.35 UI peak-peak in this case, and the deterministic component shall be less than 0.17 UI peak-peak."

Proposed Response   *Response Status* **C**

REJECT.   This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle.

Cl **47**   *SC* **47.3.3.5**   *P* **281**   *L* **12**   **#** 594

Porter, Jeff   Motorola

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

For far-end XAUI driver template, the "scope" is triggered by either the equipment under test (the driver circuit in this case) or a golden PLL.

The results may be quite different. Any data-dependent jitter (DDJ) in the Dj (currently 0.36UI), while running CJPAT and using a golden PLL, will be amplified up to 2 times. Since the total Dj is stated, and the DDJ may be counted almost twice if a golden PLL is used, this severely limits (unfeasible?) the DDJ allowed in the far end signal (cuts in half). Also, allowing golden PLL to be used, by reducing allowed DDJ, reduces incentive to recover DDJ through receiver equalization.

The golden PLL comes from MJS, e.g. 99-151v2:

"D2.2 Golden PLL
When testing at the component level, the clock is usually stable (although it may be byte-rate clock) and available for use in triggering the oscilloscope. In the case of a system test, the clock is usually not available and/or may have low frequency jitter. [In this case, the clock may be derived using a golden PLL]"

This subclause 47.3.3.5 relates to XAUI *electrical* testing, that is, a *component* level test. The signal is retimed before appearing at a system level port (MDI) where clock recovery is needed/allowed.

SuggestedRemedy

Remove reference to golden PLL in subclause.

Note, current budget with Dj at TX near end template is limited to 0.17UI, which limits DDJ to approx 0.09UI.

Proposed Response   *Response Status* **C**

REJECT. This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle.

Cl **47**   *SC* **47.3.3.5**   *P* **281**   *L* **15**   **#** 634

Christensen, Benny   GIGA

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

Test time should be adequate to .... BER = 10^-12

For 20-30 errors (statistical representable) this corresponds to 3 hours test time!!! (ie. 30/ (3 Gb/s * 10^-12) = 10.000 seconds)

SuggestedRemedy

inappropriate formulation of test time.

Proposed Response   *Response Status* **C**

REJECT. This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle.

TYPE: TR/technical required T/technical E/editorial   COMMENT STATUS: D/dispatched A/accepted R/rejected   SORT ORDER: Clause, Page, Line, Subclause   Page 47 of 144

RESPONSE STATUS: O/open   W/written C/closed   U/unsatisfied Z/withdrawn   *Cl* **47**   *SC* **47.3.3.5**

Cl **47**   *SC* **47.3.3.5**   *P* **281**   *L* **16-30**   **#** **501**

Haulin, Tord   Optillion

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

Subclause 47.3.3.5 Driver template is mixture of requirements on the driver and requirements on the compliance interconect.

SuggestedRemedy

Move the description and requirements on the compliance intercinect to a separate subclause

Proposed Response   *Response Status* **C**

REJECT. This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle.

Cl **47**   *SC* **47.3.3.5**   *P* **281**   *L* **17**   **#** **208**

Kesling, Dawson   Intel

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

Meaning of "ISI" is unclear in this first occurance of the term.

SuggestedRemedy

Replace this occurance of "ISI" with "intersymbol interference (ISI)".

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **47**   *SC* **47.3.3.5**   *P* **281**   *L* **22**   **#** **302**

Christensen, Benny   Intel / GIGA

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

I really have problems understanding the '<=' sign of the equation in the D2.1 as well as the associated figure. It is a little matematical incorrectness to mix dB and magnitude real numbers in the equation. Also the confusion is on transfer magnitude and loss, which really have a sign difference in the log domain.s21 is the complex (magnitude and phase or Re,Im) of the channel transfer function, which magnitude is always <= 1.0 (in the passive circuit case).Strictly matematical notation speaking:
|s21| refers to the magnitude (of a complex number/function) i.e. sqrt(Re^2+Im^2)S21_limit is equal to the complex function exp{-(1+i)*[g(f)]} where g() is the frequency dependent function, g() >=0. A reasonable assumption is that the transfer MAGNITUDE (s21) of a physical implemented channel (PCB) is larger or equal to the limit (i.e. |s21|limit is a lower limit of the magnitude function) that is: |s21| >= |s21|limit.Taking the 20*log (dB) function on both side does NOT change/revert the greater/less than signs. i.e.20*log(|s21|) >= 20*log(|s21|limit).So here is my confusion.The draft requires that the magnitude of s21 is less than the limit, where it actually meas the loss should be less that the upper loss limit.

SuggestedRemedy

Use a correct matematical notation and definitions. I consider the shaded area of the figure to be the illegeal part of the figure (that seems to be consistent with other figures). According to the current figure, the standard actually prevents from using ideal short transmission lines, which have a Transmission amplitude |s21| (dB) close to 0 dB (in the limit). I.e. all XAUI transmission lines shall have a lossy and dispersive properties no matter how short they are!!!

Proposed Response   *Response Status* **C**

REJECT. The figure and table are specifying maximum magnitude response (or minimum loss) for the interconnect used for compliance testing. The standard does not specify actual interconnnect characteristics.

Cl **47**   *SC* **47.3.3.5**   *P* **281**   *L* **24**   **#** **216**

Kesling, Dawson   Intel

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

Transmission magnitude response should not be specified down to DC. It is not measurable or important.

SuggestedRemedy

Change "DC" to "10 kHz".

Proposed Response   *Response Status* **C**

REJECT. This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle.

Cl **47**   *SC* **47.3.3.5**   *P* **281**   *L* **29**   *#* **218**

Kesling, Dawson   Intel

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

Added DJ is a better way to specifiy channel phase response than group delay.

SuggestedRemedy

In place of group delay, require that the compliance interconnect introduce a miminum amount of DJ. Define the data pattern and transmit waveform for this requirement.

Proposed Response   *Response Status* **C**

REJECT. This comment does not add to the technical completeness of this draft without a specific proposal. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle with a complete technical proposal.

Cl **47**   *SC* **47.3.3.5**   *P* **281**   *L* **29**   *#* **217**

Kesling, Dawson   Intel

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

The group delay limit is too tight for practical interconnects. The specification of a pk-pk limit on group delay over a wide frequency range is not an adequate method for characterizing interconnect behavior.

SuggestedRemedy

Remove the group delay limit. Specifically: (1) remove "group delay" from p. 281 l. 17; (2) remove two entire sentences, "The group delay shall ... 3% of span. The group delay limit is plotted in Figure 47-6." from p. 281 l. 29-30; (3) remove figure 47-6.

Proposed Response   *Response Status* **C**

REJECT. This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle.

Cl **47**   *SC* **47.3.4.1**   *P* **283**   *L* **45**   *#* **635**

Christensen, Benny   GIGA

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

XAUI drivers?. XAUI is an interface so signals would be a better word

Text indicates that skew and ISI is the same. Actually they are not connected as one may have one or both effects contributing to the jitter (probably DJ).

SuggestedRemedy

replace drivers with signals.

skew and ISI wording incorrect.

Proposed Response   *Response Status* **C**

REJECT. This subclause is specifying XAUI signals and cannot make circular reference to itself. 47.3.3 specifies XAUI drivers, which this subclause can reference as a source of valid signals. The second comment about skew and ISI may bear discussion. The editor humbly requests that the commenter re-submit the skew and ISI portion of the comment in the next ballot cycle.

Cl **47**   *SC* **47.3.4.3**   *P* **284**   *L* **34**   *#* **211**

Kesling, Dawson   Intel

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

Differential return loss of 10 dB to 2.5 GHz is not necessary and restricts some implementations.

SuggestedRemedy

Change "differential return loss better than 10 dB and a common mode" to "differential return loss better than 10 dB from 100 MHz to 1.56 GHz and better than 8 dB from 1.56 GHz to 2.5 GHz, and a common mode"

Proposed Response   *Response Status* **C**

REJECT. This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle.

Cl **47**   *SC* **47.3.4.4**   *P* **284**   *L* **40**   # **327**

Lysdal, Henning   Giga

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

Draft 2.1 specifies a normative receiver input eye for compliance testing. This means that the valuable information about the actual dispersion of the channel cannot be used for receiver design. The receiver has to tolerate this eye regardless of its origin. This puts a very serious strain on CDR designs as documented on the jitter reflector by Benny Christensen. Making the transmit eye plus the added low frequency wander and the channel normative, and the receiver eye informative would allow much lower power receivers without compromising the objectives of XAUI.

SuggestedRemedy

Summary:
Make the near-end eye template (fig 47-7), the sinusoidal jitter (fig 47-8) and the transmission channel (page 281, line 22) normative. And make the far-end eye template (fig 47-4) informative.Exact wording:
Replace subclause 47.3.4.4 Jitter Tolerance with the follwing:
The jitter limits in this section and summarized in Table 47-5. The XAUI receiver shall accept (with a BER of < 10e-12) a signal complying to the driver near end template (called the normative driver signal), described in figure 47-7 and Table 47-4 - plus an additional sinusoidal jitter with frequency and amplitude defined by the mask of figure 47-8. The jitter of the normative driver signal must be 0.35UI peak-peak, of which at least 0.11UI must be deterministic jitter and where the maximum random jitter is equal to the maximum total jitter minus the actual deterministic jitter. The additional sinusoidal jitter is intended to ensure margin for low frequency jitter, wander, noise, cross talk and other variable system effects.In addition the receiver shall tolerate the above signal after transmission through the compliance interconnect described in section 47.3.3.5 and shown in figure 47-5.New Table 47-5 (only changes shown):
Jitter amplitude tolerance: (3)
 peak-peak total jitter (above 1.875MHz) 0.35 UIp-p
 Minimum peak-peak deterministic jitter (above 1.875MHz) 0.11 UIp-p
 Additional sinusoidal jitter (see figure 47-8
  below 125k 1.5UI UIp-p
  1.875MHz to 20M 0.1 UIp-p
  Above 20M 0 UIp-p
(3) The receiver must tolerate these jitter tolerances on its input, and after transmission across the compliance interconnect described in section 47.3.3.5. The jitter tolerance test is described in section 47.3.4.4.

Proposed Response   *Response Status* **C**

REJECT. This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle.

Cl **47**   *SC* **47.3.4.4**   *P* **284**   *L* **40-51**   # **562**

Dedrick, Joel H.   PMC-Sierra

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

This paragraph, and table 47-5 are somewhat misleading in that they imply aa DJ tolerance limit of .36UI, and then give an example using 0.46UI. Need to more explicitly include sinusoidal jitter in the explanation and the table.

SuggestedRemedy

Before the sentence beginning "The Maximum Random Jitter... on line 45, insert:

Assuming a deterministic jitter of 0.36 UI and a sinusoidal jitter component of 0.10 UI the effective deterministic jitter will be 0.46 UI.

In line 47, change "actual deterministic jitter of 0.46 UI" to "effective deterministic jitter of 0.46 UI"

In line 48, prepend to the sentence beginning "The XAUI receiver..." the following: "This calculation applies to jitter modulation frequencies above the 1.875 MHz breakpoint in Figure 47-8. At lower frequencies, the XAUI receiver..."

Modify the jitter tolerance section of table 47-5 to read as follows:

Jitter amplitude tolerance (3)
  Pk-Pk Total Jitter   0.60 UIp-p
  Pk-Pk Deterministic Jitter 0.36 UIp-p
  Pk-Pk Sinusoidal Jitter (4) 0.10 UIp-p

Add footnote (4) to table 47-5 as follows:
Sinusoidal jitter has frequency dependent amplitude, per the mask in figure 47-8. The limit given here applies to frequencies above 1.875 MHz.

Proposed Response   *Response Status* **C**

REJECT. This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle. The solution proposed for comment #504 partially addresses the commenter's concerns. (Related comments #210, 315, 504, 562, 637.)

Cl **47**   *SC* **47.3.4.4**   *P* **284**   *L* **42**   # **637**
Christensen, Benny   GIGA

Comment Type **T**   *Comment Status* **A**
word 'and' seem to be 'as'

line 48: A max. DJ value of 0.46 UI is indicated, but I can't find it specified anywhere else.

SuggestedRemedy
resolve errors (if any)

Proposed Response   *Response Status* **C**
ACCEPT.   Leave "and" as it is for the first portion of this comment. Use proposed remedy in #504 for the DJ portion of this comment. (Related comments: #210, 504, 562, 637.)

Cl **47**   *SC* **47.3.4.4**   *P* **284**   *L* **44**   # **502**
Haulin, Tord   Optillion

Comment Type **E**   *Comment Status* **A**
Jitter tolerance specification is not a range.

SuggestedRemedy
Add some wording to turn the jitter tolerance requirement into an inequality. E.g. "..jitter amplitude tolerance of at least 0.60UI" or "minimum"

Proposed Response   *Response Status* **C**
ACCEPT.   Change "…jitter amplitude tolerance of 0.60 UI" to "..jitter amplitude tolerance of at least 0.60 UI"

Cl **47**   *SC* **47.3.4.4**   *P* **284**   *L* **45**   # **221**
Kesling, Dawson   Intel

Comment Type **T**   *Comment Status* **R**
Spectrum of the RJ is unconstrained.

SuggestedRemedy
Add the following text after the sentence ending on line 45, "Received random jitter is defined as being above 20MHz with a 20dB/dec rolloff at lower frequency. It should be noted that the random jitter is naturally bandlimited at higher frequency by the sampled nature of the data."

Proposed Response   *Response Status* **C**
REJECT. This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle.

Cl **47**   *SC* **47.3.4.4**   *P* **284**   *L* **45-47**   # **210**
Kesling, Dawson   Intel

Comment Type **E**   *Comment Status* **R**
Sentence concerning Gaussian RJ does not belong in the text. (It is in a figure footnote in 1GE.) Furthermore, there are questions about the correct application of Gaussian BER statistics to horizontal eye openings, and even about the validity of the Gaussain assumption.

SuggestedRemedy
Delete the sentences, "Assuming a Gaussian ... 5.5 ps RMS."

Proposed Response   *Response Status* **C**
REJECT.   This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle. (Related comment #503.)

Cl **47**   *SC* **47.3.4.4**   *P* **284**   *L* **45-48**   # **503**
Haulin, Tord   Optillion

Comment Type **E**   *Comment Status* **A**
Clause 47.3.4.4 Jitter tolerance is a mixture of requirements on the receiver and requirements on test signals for the receiver.

SuggestedRemedy
Either rephrase "The maximum random jitter... or 5.5ps RMS" to express requirements on the reciver or move it to a sub-clause describibg requirements on jitter tolerance test patterns.

Proposed Response   *Response Status* **C**
ACCEPT IN PRINCIPLE.   Move suggested sentence to footnote 3 in table 47-5.

Cl **47**   *SC* **47.3.4.4**   *P* **284**   *L* **47**   # **315**
Baumer, Howard   Broadcom

Comment Type **E**   *Comment Status* **A**
The jitter example states that the maximum allowable Dj is 0.46UI but prior sentences (line 44) state Dj of 0.36UI as well as table 47.5 stating Max Dj of 0.36UI

SuggestedRemedy
Change line 44 to say 0.36UI

Proposed Response   *Response Status* **C**
ACCEPT IN PRINCIPLE. I believe the commenter meant to change line 47 (not line 44) to 0.36 UI. (Related comments #210, 504, 562, 637.)

Cl **47**   *SC* **47.3.4.4**   *P* **284**   *L* **47**   **# 504**
Haulin, Tord   Optillion

Comment Type   **T**   *Comment Status*   **A**
DJ spec on line 47 is not in agreement with that of line 44 and Table 47-5

SuggestedRemedy
Change 0.46UI to 0.36UI

Proposed Response   *Response Status*   **C**
ACCEPT.   (Related comments: #210, 315, 562, 637.)

Cl **47**   *SC* **47.3.5**   *P* **285**   *L* **28**   **# 9**
Stoltz, Mario   ChipIng.de, an Intel co

Comment Type   **E**   *Comment Status*   **A**
Usage of "mil" does not comply to ANSI/IEEE 268-1992 (Standard for Metric Practice).

SuggestedRemedy
Replace with SI unit - mm in this case. Round the numbers as the value does not seem to be of high importance here.

Proposed Response   *Response Status*   **C**
ACCEPT.   Use 0.125 to 0.300 millimeters instead of 5 to 12 mils.

Cl **47**   *SC* **47.4.1**   *P* **286**   *L* **26**   **# 481**
Dawe, Piers   Agilent

Comment Type   **T**   *Comment Status*   **R**
"The CJPAT shall be used for transmitter output jitter and receiver jitter tolerance." is too restrictive. First, test method standardisation, while valuable, in general is not necessary to robust interworking of product in the way that "mission mode" standardisation is. Second, the whole subject of jitter testing is evolving. Our precedent is in 36.3.8: "A limited set of test functions may be provided as an implementation option for testing of the transmitter function."

SuggestedRemedy
Change "shall" to "may" or use "is recommended". Change 48.7.4.1 CC1 to "O" following 36.7.4.1 CC1. Change "normative" to "informative" in 48A.

Proposed Response   *Response Status*   **C**
REJECT. This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle.

Cl **47**   *SC* **47.4.1**   *P* **286**   *L* **28**   **# 209**
Kesling, Dawson   Intel

Comment Type   **E**   *Comment Status*   **A**
Space mising between "XAUI" and "shall".

SuggestedRemedy
Add space between "XAUI" and "shall".

Proposed Response   *Response Status*   **C**
ACCEPT.

Cl **47**   *SC* **47.4.1**   *P* **286**   *L* **8**   **# 223**
Kesling, Dawson   Intel

Comment Type   **T**   *Comment Status*   **A**
This section is incomplete: termination is undefined; references to Annex 48B are not fully specified; receiver complance eye is not specified.

SuggestedRemedy
Editors to fix this section in coordination with other changes proposed for Clause 47 and the proposal for Annex 48B. Use the termination of 47.3.3. Reference the receiver compliance eye of fig. 47-4 but note that the eye intervals are modified to accomodate the additonal SJ. Editorial cleanup as needed.

Proposed Response   *Response Status*   **C**
ACCEPT.   Changes made to D2.2 reviewed and approved by XAUI subtask force.

Cl **47**   *SC* **47.47.3.3.5**   *P* **47.281**   *L* **17**   **# 212**
Kesling, Dawson   Intel

Comment Type   **E**   *Comment Status*   **A**
"Transmission magnitude" is confusing.

SuggestedRemedy
Change "transmission magnitude" to "transmission magnitude response" on p. 281 l. 17 and 19. Change "transmission magnitude" to "magnitude response" on p. 281 l. 25, 26 and 27.

Proposed Response   *Response Status*   **C**
ACCEPT.

Cl **47**   *SC* **47.6**   *P* **287**   *L* **1**   **#** **220**

Kesling, Dawson   Intel

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

PICs will need updating per all approved comments.

SuggestedRemedy

Editor to update PICs as needed for approved comments to D2.1.

Proposed Response   *Response Status*   **C**

REJECT.   This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle.

Cl **47**   *SC* **47.Table 47-3**   *P* **47.281**   *L* **34**   **#** **224**

Kesling, Dawson   Intel

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

The far-end template intervals of table 47-3 allow 0.65 UI of p-p total jitter, but the new recieve jitter tolerance of D2.1 47.3.4.4 is only 0.60 UI.

SuggestedRemedy

Change table 47-3 X1 value from 0.325 to 0.30 UI and X2 from 0.45 to 0.425 UI.

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **47**   *SC* **fig. 47-2**   *P* **278**   *L* **23**   **#** **628**

Christensen, Benny   GIGA

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

figure could indicate:

XGXS (the block in the middle)
XGMII (interface to the lef)
XAUI (the interface to the right)

also to indicate the signal_detect reporting to the XGXS

SuggestedRemedy

insert labels / text on block and interfaces

Proposed Response   *Response Status*   **C**

REJECT. This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment as two separate comments in the next ballot cycle.

Cl **47**   *SC* **figure 47-1**   *P* **276**   *L* **19**   **#** **620**

Christensen, Benny   GIGA

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

The XAUI link could be drawn more detailed with 4 lanes in each direction.
In the text one metions the characteristics of the XGXS, but it is not really observable on the figure.

Also the 3 clock domain may be sketched. (i.e. the clock domains splits in the receiving XGXS and between the RX and TX PHY parts.

SuggestedRemedy

Proposed Response   *Response Status*   **C**

REJECT.   Figure 47-1 is a special figure that cannot deviate from pre-determined 802.3 format.

Cl **47**   *SC* **Figure 47-5**   *P* **282**   *L* **14**   **#** **213**

Kesling, Dawson   Intel

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

Title should be more descriptive.

SuggestedRemedy

Change figure title to, "Compliance interconnect magnitude response template and ISI loss limit." Remove "Transmission amplitude" from y-axis label. Change "Transmission limit" label on template to "Limit".

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.   Change figure title to, "Compliance interconnect magnitude response and ISI loss." Remove "Transmission amplitude" from y-axis label. Remove "Transmission limit" label on template.

Cl **47**   *SC* **figure 47-8**   *P* **285**   *L* **1**   **#** **303**

Christensen, Benny   Intel / GIGA

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

I consider the shaded area of the figure to be the illegal part of the figure area (that seems to be consistent with other figures). This is wrong as the mask is a minimum limit specifying how much the CDR at least should tolerate.

SuggestedRemedy

Move the shaded area to the lower part of the curve. (This will be consistent with ITU jitter tolerance specs)

Proposed Response   *Response Status*   **C**

REJECT. The area below the line is the tolerance requirement and valid test region. (Related comment #505.)

Cl **47**   *SC* **Figure 47-8**   *P* **285**   *L* **18**   **# 505**

Haulin, Tord   Optillion

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

The figure title is ambiguous.

SuggestedRemedy

Change the figure title to "Additional single-tone sinusoidal component of jitter tolerance test signal"
The shadow above the line can be removed to indicate it is sufficient to test with the full sinusoidal amplitude.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Remove the shading as suggested. (Related comment #303.) The title change does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this portion of the comment in the next ballot cycle.

Cl **47**   *SC* **Figure 47-8**   *P* **285**   *L* **3**   **# 222**

Kesling, Dawson   Intel

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

The 125 kHz corner does not accomodate a maximum length packet.

SuggestedRemedy

Use the provided figure to change the corner in figure 47-8 from 125 kHz and 1.5 UI to 22.1 kHz and 8.5 UI. This maintains the 20 dB/dec slope.

Proposed Response   *Response Status* **C**

REJECT.   This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle.

Cl **47**   *SC* **Multiple**   *P*   *L*   **# 506**

Haulin, Tord   Optillion

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

Differential skew is the only parameter specified that is dealing with individual properties of the two branches of XAUI signals. There are quite a few more specification parameters required to safe guard against "poor differential signal properties". Already the differential skew spec requires several definitions and test setups to make the specification limits meaningful. Rather than opening this can of worms, the differential skew should be treated as the other signal quality parameters: Implementer's responsibility.

SuggestedRemedy

Remove all references to, and specifications on differential skew.

Proposed Response   *Response Status* **C**

REJECT.   This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle. (Related comment #563, 636.)

Cl **47**   *SC* **Table 47-6**   *P* **285**   *L* **33**   **# 595**

Porter, Jeff   Motorola

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

Table reflects *system* level informative budget. As such, the Sj from jitter tolerance testing is no longer required here, since jitter tolerance testing in Clause 47 XAUI electrical is component level testing.

In Irvine, we stole 0.05UI each from receiver and channel. Time to give it back.

SuggestedRemedy

CHange Tj and Dj columns of table as follows:

"   Tj   Dj   [Rj, do not include]
Driver   .35   .12   .23
Interconnect .15   .15   0
Other(2)   .26   .1   .16
Total   .65   .37   .28

Note 2: Includes such effects as crosstalk, noise, etc. Such effects are accounted for at component level testing with Sj Jitter Tolerance testing."

These numbers give receiver 0.35UI (versus current 0.30), gives system 0.25UI Dj (versus 0.19), maintains 0.16UI Rj in system Other (though I don't know where that would come from, since noise should be Dj, even if not data dependent jitter (DDJ).) Driver Dj is reduced, but with elimination of golden pll from 47.3.3.5, DDJ allowed increases from 0.09 to 0.12UI.

Other edits based on budget (e.g. 47.3.3.5, etc.)

Proposed Response   *Response Status* **C**

REJECT. This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle.

Cl **47**   *SC* **table 47-2**   *P* **280**   *L* **14**   # **632**
Christensen, Benny   GIGA

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

This is only a summary table, as all of the values are in the text, but not vice versa.

In case of inconsistency, it should be decided what counts (value in text common RL=6 dB or in table: common RL= 5 dB) .

In order to clear any conflicts, it may be advisable to only have the numbers in one place (ie. the text should refer to the table value instead of giving the number) or state that the table is only summary

SuggestedRemedy

Add 'summary' to table caption.

In order to clear any conflicts, it may be advisable to only have the numbers in one place (ie. the text should refer to the table value instead of giving the number) or state that the table is only summary.
Frequency range / conditions not taken into table. liek the 100 MHz to 2.5 GHz RL condition.

Absolute output voltages irrelevant as interface is AC coupled.

Proposed Response   *Response Status*   **C**

REJECT. There are several comments/proposals here. The "summary"and "one-place" proposal may have merit. The editor humbly requests that the commenter re-submit this portion of the comment in the next ballot cycle. The absolute output voltages are used to control the DC voltage applied across the AC coupling. (See comment #630.)

Cl **47**   *SC* **Table 47-2**   *P* **280**   *L* **30**   # **207**
Kesling, Dawson   Intel

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

CM RL of 5 dB disagrees with text value of 6 dB.

SuggestedRemedy

Change "5" to "6".

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **47**   *SC* **table 47-5**   *P* **284**   *L* **16**   # **636**
Christensen, Benny   GIGA

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

skew is not a receiver parameter but a signal condition or test parameter.

It may be stated that it shall tolerate 75 ps skew.

SuggestedRemedy

resolve conflict - clearness

Proposed Response   *Response Status*   **C**

REJECT.   This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle. (Related comments: #506, 563.)

Cl **47**   *SC* **table 47-6**   *P* **285**   *L* **43**   # **304**
Christensen, Benny   Intel / GIGA

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

the total jitter of 0.6 UIpp (plus additional SJ 0.1 UIpp) is more than most CDRs can handle.MY measurements show a max. of 0.64 UIpp SJ (i.e. total jitter) for a clean signal of a 3.125 Gb/s CDR.

SuggestedRemedy

Jitter numbers to be revised

Proposed Response   *Response Status*   **C**

REJECT. This comment does not add to the technical completeness of this draft without a specific proposal. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle with a complete technical proposal.

Cl **47**　　*SC* **Table 47-6**　　　　*P* **285**　　*L* **43**　　# **563**

Dedrick, Joel H.　　　　　　　　PMC-Sierra

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

Differential skew on a high-speed input directly translates to deterministic jitter at a modulation frequency approaching the baud rate (i.e. it displaces falling edges relative to rising ones).

75 ps. of differential skew, if taken to be in addition to other sources of deterministic jitter, would add a very large DJ component, approximately .1 to .2 UI, depending on risetime. I assume this wasn't what was intended, so we should make it clear that this source of DJ is included in the jitter tolerance budget of table 47-5

SuggestedRemedy

Add a footnote (3) to the "Skew (ns p-p) header of table 47-6. Footnote to read:

Deterministic jitter resulting from differential skew is included in the Deterministic jitter tolerance requirement given in table 47-5.

Proposed Response　　　*Response Status*　**C**

REJECT. This comment does not add to the technical completeness of this draft. The editor humbly requests that the commenter re-submit this comment in the next ballot cycle. (Related comments: #506, 636.)

Cl **48**　　*SC*　　　　　*P* **293**　　*L* **32**　　# **639**

William G. Lane　　　　　　　　CSU, Chico

Comment Type　**T**　　*Comment Status*　**A**　　　　　　　*Rich OK*

The change summary indicates that jitter test methodology has been added to annex 48B but annex 48B is missing and also, based on a text search, it is not referenced anywhere in clause 48.

SuggestedRemedy

Find annex 48B and include appropriate reference(s) in clause 48

Proposed Response　　　*Response Status*　**C**

ACCEPT. Change applied in D2.2. Annex 48B is introduced in D2.2 as an outline with Anthony Sanders assigned as Annex Editor. A reference to Annex 48B is added to 48.3.4, Test functions.

Cl **48**　　*SC* **48**　　　　　*P* **293**　　*L* **32**　　# **32**

Stoltz, Mario　　　　　　　　ChipIng.de, an Intel co

Comment Type　**E**　　*Comment Status*　**A**　　　　　　　*Rhett OK*

Change summary table states the inclusion of annex 48B, which is missing.

SuggestedRemedy

Provide annex 48B or remove this reference.

Proposed Response　　　*Response Status*　**C**

ACCEPT. Change applied in D2.2. Duplicate. See 639.

Cl **48**　　*SC* **48.2.2**　　　　*P* **298**　　*L* **17**　　# **11**

Stoltz, Mario　　　　　　　　ChipIng.de, an Intel co

Comment Type　**E**　　*Comment Status*　**A**　　　　　　　*Rhett OK*

Text reads "Each set of data signals convey..."

SuggestedRemedy

Change to "Each set of data signals conveys..."

Proposed Response　　　*Response Status*　**C**

ACCEPT. Change applied in D2.2.

Cl **48**　　*SC* **48.2.2**　　　　*P* **299**　　*L* **11-12**　　# **13**

Stoltz, Mario　　　　　　　　ChipIng.de, an Intel co

Comment Type　**E**　　*Comment Status*　**A**　　　　　　　*Rhett OK*

Awkward sentence "...link status reporting, which in turn, support the local_fault and remote_fault conditions."

SuggestedRemedy

Rephrase for clarification. E.g.: "...reporting by supporting local_fault and..." - is that what was meant?

Proposed Response　　　*Response Status*　**C**

ACCEPT. Change applied in D2.2. Changed "..status reporting, which in turn, support the local_fault.." to "..status reporting, which supports the local_fault..".

Cl **48**　　*SC* **48.2.2**　　　　*P* **299**　　*L* **9**　　# **12**

Stoltz, Mario　　　　　　　　ChipIng.de, an Intel co

Comment Type　**E**　　*Comment Status*　**A**　　　　　　　*Rhett OK*

"...to the XGMI"

SuggestedRemedy

"...to the XGMII"

Proposed Response　　　*Response Status*　**C**

ACCEPT. Change applied in D2.2.

Cl **48**　　*SC* **48.2.3**　　　　*P* **299**　　*L* **27**　　# **89**

Brown, Benjamin　　　　　　　　AMCC

Comment Type　**E**　　*Comment Status*　**A**　　　　　　　*Rhett OK*

extra word

SuggestedRemedy

Remove the word "to" at the start of this line

Proposed Response　　　*Response Status*　**C**

ACCEPT. Change applied in D2.2.

Cl **48** *SC* **48.2.4** *P* **301** *L* # **162**
R"mer, Tume   Optillion AB

Comment Type **T** *Comment Status* **R**   *Rich OK*

Inconsistency between 10GBASE-R and 10GBASE-X in table 48-2. See also pg 345, table 49-1.The reserved values are not handled constently. 10GBASE-R will map thereserved1, reserved4, reserved5 and reserved6, 10GBASE-X will not (mapsto /E/). What is the intention ? Should the reserved values be handled but notunderstood or should they be errored ?

SuggestedRemedy

Make consistent.

Proposed Response *Response Status* **C**

REJECT. The special code space of the XGMII, 8B/10B and 64B/66B are all different. The number and handling of reserved values for the three codes for the transmitter and receiver are necessarily different and need not be consistent. 10GBASE-X PCS TX and RX behavior is consistent with the requirements of the RS.

Cl **48** *SC* **48.2.4** *P* **302** *L* # **159**
R"mer, Tume   Optillion AB

Comment Type **T** *Comment Status* **R**   *Rich OK*

Table 48-2/48-3/Fsig/ is not handled consistentlyXGMII->PCS maps x5C to /K30.7/ (Error)
PCS->XGMII maps /K28.2/ to x5C
See also the mapping in clause 49.2.4.5 (pg 343) and table 49-1 (pg 345).
The 64B/66B PCS maps it forth and back to an ordered set.

SuggestedRemedy

Decide on a consistent mapping in both directions and for both PCS'sI.e, either /K28.2/ is an error or it is not.

Proposed Response *Response Status* **C**

REJECT. ||Fsig|| and /K28.2/ are not supported by IEEE P802.3. However, the code space is reserved for use by other standard projects including NCITS 10GFC. 10GBASE-X PCS TX and RX behavior is consistent with the requirements of the RS.

Cl **48** *SC* **48.2.4** *P* **302** *L* **28** # **564**
Don Alderrou   nSerial

Comment Type **T** *Comment Status* **A**   *Rich OK*

Table 48--4, Defined ordered_sets and special code-groups, lists the wrong Encoding for LF and RF. According to Table 46-4 on page 264, the lane 3 PCS code-groups should relate to the XGMII Characters of 0x01 and 0x02 respectively. According to Table 36-1a, these should be D1.0 and D2.0 instead of the D0.1 and D0.2 that are listed.

SuggestedRemedy

Change the LF Encoding to /K28.4/D0.0/D0.0/D1.0/.
Change the RF Encoding to /K28.4/D0.0/D0.0/D2.0/.

Proposed Response *Response Status* **C**

ACCEPT. Change applied in D2.2.

Cl **48** *SC* **48.2.4.2** *P* **303** *L* **1** # **317**
Baumer, Howard   Broadcom

Comment Type **E** *Comment Status* **A**   *Rich OK*

Inconsistant idle rule for minimum ||A|| spacing.
Rule d) first states that the number of non-||A|| coulumns should be between 16-31. The next sentence says the minimum spacing is 17 columns. The last sentence defines the ||A|| spacing as being measured from the end of the first ||A|| to the start of the next ||A||. This then gives a minmum of 17 non-||A|| columns between ||A||s not 16.

SuggestedRemedy

Change the ||A|| spacing definition to be from the end of the first ||A|| to the end of the last ||A||

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Change applied in D2.2. Deleted the last sentence in rule (d). Added the word "inclusive" after "between 16 and 31" to rule (d) as well as the definition of A_CNT in 48.2.5.1.5, and rephrased the third sentence. Re-phrased the second sentence of rule (d). Also see 565.

Cl **48** *SC* **48.2.4.2** *P* **303** *L* **1** # **565**
Don Alderrou   nSerial

Comment Type **T** *Comment Status* **A**   *Rich OK*

The text
"d) After each ||A||, in the absence of frame transmission, the next ||A|| shall be sent after r non-||A|| columns where ..." is inconsistent with the state machine diagram shown in Figure 48-6 on page 313 and the description of the A_CNT counter described in subclause 48.2.5.1.5 on page 311. The A_CNT counter continuously counts down once per PUDR without regard to frame transmission. Note: The sentence contains a "shall", however it is not clear which PICS are referenced in the subclause 48.7.4.2 PCS PICS on page 324. Is it PRBS or TSD?

SuggestedRemedy

The first sentence on page 303 needs word-smithing. Here are a couple choices listed in order of preference:
1) Change the sentence to read: "d) Each ||A|| is sent after r non-||A|| columns where ..."
2) If the "shall" is required, then change the sentence to read: "d) Each ||A|| shall be sent after r non-||A|| columns where ..."
3) Just delete the words ", in the absence of frame transmission," from the sentence. It would then read: "d) After each ||A||, the next ||A|| shall be sent after r non-||A|| columns where ..."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Change applied in D2.2. Changed rule (d) to read: "d) Each ||A|| shall be sent after r non-||A|| columns where r is a uniform randomly distributed number between 16 and 31, inclusive. The corresponding minimum spacing of 16 non-||A|| columns between two ||A|| columns provides a theoretical 85-bit deskew capability". Also clarified associated PICS PRBS entry by adding the qualifier "(d)" to denote rule (d) in subclause 48.2.4.2.

TYPE: TR/technical required T/technical E/editorial   COMMENT STATUS: D/dispatched A/accepted R/rejected   SORT ORDER: Clause, Page, Line, Subclause Page 57 of 144

RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *Cl* **48** *SC* **48.2.4.2**

Cl **48**   *SC* **48.2.4.2**   *P* **303**   *L* **14**   # **567**

Don Alderrou   nSerial

Comment Type **T**   *Comment Status* **A**   *Rich OK*

There is a typo in the sentence: "||A|| spacing is continuously set to the next generated value of r." It is inconsistant with the description of the A_CNT counter described in subclause 48.2.5.1.5 on page 311. The A_CNT is only loaded (which sets the ||A|| spacing) when an ||A|| is sent.

SuggestedRemedy

Delete the word "continuously" from the sentence.

Proposed Response   *Response Status* **C**

ACCEPT. Change applied in D2.2.

Cl **48**   *SC* **48.2.4.2**   *P* **303**   *L* **17**   # **465**

Lynskey, Eric   UNH IOL

Comment Type **E**   *Comment Status* **A**   *Rhett OK*

The text indicates that ||A|| selection follows the value of code_sel. This is also indicated in Figure 48-5. However, this dependence was removed from the state diagram. The text should be cleaned up to indicated that sending an ||A|| is only dependent on A_CNT=0.

SuggestedRemedy

Change the text to read: ||K|| or ||R|| selection follows the value of code_sel, which is continuously set according to the even or odd value of r.
Change Figure 48-5 so that under code_sel it reads: 1 <= r=odd <= ||R||

Proposed Response   *Response Status* **C**

ACCEPT. Change applied in D2.2.

Cl **48**   *SC* **48.2.4.2**   *P* **303**   *L* **3**   # **90**

Brown, Benjamin   AMCC

Comment Type **E**   *Comment Status* **A**   *Rhett OK*

wrong word

SuggestedRemedy

Replace "an theoretical" with "a theoretical"

Proposed Response   *Response Status* **C**

ACCEPT. Change applied in D2.2. Also see 566.

Cl **48**   *SC* **48.2.4.2**   *P* **303**   *L* **3**   # **566**

Don Alderrou   nSerial

Comment Type **E**   *Comment Status* **A**   *Rhett OK*

There is a typo in the text "||A|| spacing provides an theoretical ..."

SuggestedRemedy

Change the "an" to a "a"

Proposed Response   *Response Status* **C**

ACCEPT. Change applied in D2.2. Also see 90.

Cl **48** *SC* **48.2.4.2.3** *P* **304** *L* **24** **#** 607

Thaler, Pat Agilent Technology

Comment Type **T** *Comment Status* **A** *Rich OK*

This says that clock compensation may be done by removing R columns or by deletion of idle characters in the unencoded data stream. Removing R columns is fully specified since an IPG always contains at least 1 column of A or K.
For the case where idle characters are deleted, additional specifications are needed.

Also, now that ||Q|| ordered sets can be sent continuously, need to add deletion of those in the unencoded data stream.

SuggestedRemedy

Add a new paragraph: "When clock compensation is done in the unencoded data stream, idle insertion and deletion shall occur in groups of 4. Idles may be added following idle or ordered sets. They shall not be added while data is being received. When deleting idles, the minimum IPG of five characters shall be maintained. Sequence ordered_sets may be deleted to adapt between clock rates. Such deletion shall only occur when two consecutive sequence ordered_sets have been received and shall delete only one of the two. Only idles may be inserted for clock compensation."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Insert the following paragraph:

"When clock compensation is done in the unencoded data stream, idle insertion and deletion shall occur in groups of 4 Idle characters. Idle characters may be added following idle or ordered sets. They shall not be added while data is being received. When deleting idles, the minimum IPG of five characters shall be maintained. Sequence ordered_sets may be deleted to adapt between clock rates. Such deletion shall only occur when two consecutive sequence ordered_sets have been received and shall delete only one of the two. Only idles may be inserted for clock compensation."

Text was re-formatted for the next draft of the Clause as shown below for better consistency with the format of the document:

"When clock compensation is done in the unencoded data stream, rules for idle insertion and deletion shall be as follows:
Idle insertion or deletion occurs in groups of four Idle characters;
Idle characters may be added following idle or ordered_sets;
Idle characters are not added while data is being received;
When deleting idles, the minimum IPG of five characters is maintained;
Sequence ordered_sets may be deleted to adapt between clock rates;
Sequence ordered_set deletion occurs only when two consecutive sequence ordered_sets have been received and deletes only one of the two;
Only idles may be inserted for clock compensation."

Corresponding PICS entries to be added at next draft revision.

Cl **48** *SC* **48.2.4.4** *P* **305** *L* **10-22** **#** 318

Baumer, Howard Broadcom

Comment Type **T** *Comment Status* **A** *Rich OK*

There is no mention of what the PCS transmit process should do if an invalid XGMII control character is encountered.

SuggestedRemedy

Add in that the tansmit process replaces all illeagel XGMII control characters with /E/

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Change applied in D2.2, also change in D2.3 "illegal" to "reserved".

Cl **48** *SC* **48.2.4.5.1** *P* **305** *L* **30** **#** 467

Lynskey, Eric UNH IOL

Comment Type **E** *Comment Status* **A** *Rhett OK*

Explicitly state that the XGMII Sequence control character gets mapped to lane 0.

SuggestedRemedy

Change to ...maps to XGMII Sequence control character on lane 0...

Proposed Response *Response Status* **C**

ACCEPT. Change applied in D2.2.

Cl **48** *SC* **48.2.5.1.2** *P* **306** *L* **25** **#** 569

Don Alderrou nSerial

Comment Type **E** *Comment Status* **A** *Rich OK*

The definition of /K/ at line 5 of page 307 does not contain a reference to subclause 48.2.4.2.2. as in the definition of /A/ at line 26 of page 306. Additionally, it does not list the code-group (K28.5) as in the definition of /R/ at line 18 of page 307. The same goes for the definition of /E/ at line 46 on page 306. These four constants should be defined the same way using the same references and terminology.

SuggestedRemedy

Change the definitions of the /A/, /K/, /R/, and /E/ constants to use the same references and terminology.

Proposed Response *Response Status* **C**

ACCEPT. Change applied in D2.2.

Cl **48**   *SC* **48.2.5.1.2**   *P* **307**   *L* **5**   **#** **568**
Don Alderrou   nSerial

Comment Type **T**   *Comment Status* **A**   *Rich OK*

The definition of /K/ refers to a Fill Pad function. I think this function was changed to the cvtx_terminate/cvrx_terminate as described in subclause 48.2.4.3.2 Terminate ||T||.

SuggestedRemedy

Change the "Fill Pad" function to cvtx_terminate or just delete "Fill Pad" from the sentence.

Proposed Response   *Response Status* **C**

ACCEPT. Change applied in D2.2. Deleted the sentence referring to "pad" characters in 48.2.4.3.2. No other references to "pad characters" remain in the document.

Cl **48**   *SC* **48.2.5.1.3**   *P* **308**   *L* **22**   **#** **570**
Don Alderrou   nSerial

Comment Type **T**   *Comment Status* **A**   *Rich OK*

The sentence "Full code-groups may be discarded whenever deskew is enabled." is not complete. During the lane deskew process a full align_column may also be discarded.

SuggestedRemedy

Change the sentence to read: "Code-groups and full align_columns may be discarded whenever deskew is enabled."

Proposed Response   *Response Status* **C**

ACCEPT. Change text to read:

"Code-groups may be discarded whenever deskew is enabled."

Cl **48**   *SC* **48.2.5.1.3**   *P* **308**   *L* **34**   **#** **571**
Don Alderrou   nSerial

Comment Type **E**   *Comment Status* **A**   *Rich OK*

The sentence "To ensure the deterministic presence of ||R|| as the second ||IDLE||." is not accurate. According to Figure 48-6 the next_ifg variable is to ensure an equal and deterministic presence of both ||A|| and ||K||. This function allows the receiver to gain comma synchronization and lane alignment during packet transmission.

SuggestedRemedy

Change the sentence to read: "It is used to ensure an equal and deterministic presence of both ||A|| and ||K||"

Proposed Response   *Response Status* **C**

ACCEPT. Change applied in D2.2.

Cl **48**   *SC* **48.2.5.1.4**   *P* **310**   *L* **36-41**   **#** **319**
Baumer, Howard   Broadcom

Comment Type **T**   *Comment Status* **A**   *Eric OK*

check_end function is defined such that a good packet can be corupted if an error starts on the first column after a ||T||.48.2.4.3.2 states that running disparity errors to over flow into the first column after ||T|| are to be moved into the ||T||.check_end definitions furthers states that any non /A/ or /K/ detected will also be rolled into the ||T||. If the error starts in the column after the ||T|| it will be moved to the ||T|| and therfore corput the packet that was good.

SuggestedRemedy

Define check_end the way it is defined in 48.2.4.3.2

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Related comment number 605, see that comment for resolution.

Cl **48**   *SC* **48.2.5.1.4**   *P* **310**   *L* **37**   **#** **167**
R"mer, Tume   Optillion AB

Comment Type **T**   *Comment Status* **A**   *Rich OK*

The exact workings of the check_end in the case that a disparity errorOR (due to the definition of check_end) a code-group other than /A/ or /K/in the lane containing the TERMINATE is unclear. Should it replace the /T/with an /E/ or should it keep the /T/ and place the /E/ in the code groupwhich follows in the lane ?

SuggestedRemedy

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Related comment number 605. See that comment for resolution.

Cl **48**   *SC* **48.2.5.1.4**   *P* **310**   *L* **37**   # **605**

Thaler, Pat   Agilent Technology

Comment Type **T**   *Comment Status* **A**   *Rich OK*

The combination of check_end and RS behavior misses one class of error. Last go around I submitted a comment asking RS to fix the hole and the comment response said it was the responsibility of the PCS to fix it.

The situation is with a 10GBASE-X PCS, an error occurs during the frame that changes the disparity in, for example, lane 3 but it doesn't cause a disparity error. That is, it is an error that changes a non-disparity-flipping character into disparity-flipping character or vice versa, the new character is correct for the current disparity, and the remaining characters in that lane to the end of the packet are neutral disparity. The Terminate character falls in an earlier lane such as lane 0. The 10GBASE-X PCS will detect an error in the K that follows the last data byte in lane 3. Therefore, the Error character will be in lane 3 of the transfer with the Terminate character in lane 0.

SuggestedRemedy

My preferred remedy is to fix this still in the RS and I have resubmitted a comment (p 263 l 52) requesting it with more explanation than last time. If that fix is not accepted, it will need to be fixed here.

replace definition of check_end with:
Prescient Terminate function used by the PCS Receive process to set the RXD<31:0> and RXC<3:0> signals to indicate Error within the frame if a running disparity error was propagated to the column following ||T|| or to a lane of the ||T|| following the /T/. The XGMII Error control character is returned in all lanes in ||T|| for which a running disparity error or any code-groups other than /A/ or /K/ are recognized in the column following ||T||. Also, the XGMII Error control character is returned in lane 0 if a running disparity error is detected in a lane following the /T/ in the ||T|| and, if the /T/ was in lane 0, the Terminate control character is sent on lane 1. For all other lanes the value set previously is retained.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.   Definition of check_end replaced with:

Prescient Terminate function used by the PCS Receive process to set the RXD<31:0> and RXC<3:0> signals to indicate Error if a running disparity error was propagated to any Idle code-groups in ||T||, or to the column following ||T||. The XGMII Error control character is returned in all lanes in ||T|| for which a running disparity error or any code-groups other than /A/ or /K/ are recognized in the column following ||T||. The XGMII Error control character is also returned in all lanes greater than n in the column prior to ||T||, where n identifies the specific Terminate ordered-set ||Tn||, for which a running disparity error or any code group other than /A/ or /K/ are recognized in the corresponding lane of ||T||. For all other lanes the value set previously is retained.

Related comment to clause 46 is 604.

Also corrected corresponding text in 48.2.4.3.2 and 48.2.4.4.

Cl **48**   *SC* **48.2.5.1.4**   *P* **311**   *L* **10**   # **87**

Brown, Benjamin   AMCC

Comment Type **E**   *Comment Status* **A**   *Rhett OK*

missing some description

SuggestedRemedy

Replace "represents signal_detect" with "represents a change in the value of signal_detect"

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Change applied in D2.2. Replaced "represents signal_detect" with "represents signal_detectCHANGE".

Cl **48**   *SC* **48.2.5.2.1**   *P* **308**   *L* **39**   # **572**

Don Alderrou   nSerial

Comment Type **T**   *Comment Status* **A**   *Eric OK*

Figure 48--6, PCS transmit source state diagram, sets the Q_det variable defined on lines 39/42 on page 308 to the "True" value. Figure 48--7, PCS fault message detect state diagram, sets the Q_det variable to the "False" value. There is nothing in the definition of the Q_det variable to specify which action has precedence in the case when both state machines set Q_det in the same TX_CLK.

SuggestedRemedy

Either add states to the state diagrams so there is no conflict in setting the value or add precedence to the definition of the Q_det variable.

Proposed Response   *Response Status* **C**

PROPOSED ACCEPT.   Change applied in D2.2. Combined response to 573 and 499. Replaced Figure 48-7 with a Q_det function (as directed suggested by 573 and 499). Added precedence to Q_det as suggested.
Redefined Q_det as:
Q_det: Function to determine the need to transmit sequence ordered_sets.
If TX=||Q|| then Q_det is set to true and TQMSG is set to the result of ENCODE(TX) . Q_det remains true until set to false by the PCS transmit source state diagram. In the event that this function and the state diagram both attempt to set Q_det, the setting of Q_det to true takes priority.

Cl **48**   *SC* **48.2.5.2.1**   *P* **312**   *L*   # **168**

R"mer, Tume   Optillion AB

Comment Type   **T**   *Comment Status*   **R**   *Bob OK*

See figure 48-6 pg 313.In state SEND_DATA an IF statement is used. Clause 21.5 does not make itclear if IF are allowed as part of an action (You could always hide it inthe function definition).

SuggestedRemedy

Either hide the IF in the definition of the cvtx_terminate,OR (prefered), use the same state transaction and state as in the RX statediagram (figure 48-10 pg 317), ie create a TERMINATE state which does thecvtx_terminate.

Proposed Response   *Response Status*   **C**

REJECT. IEEE 802.3 Clause 1.2.1 permits contions to be specified within states (see Fig 1-2 State diagram notation example). The precedence for the format of the conditional expression used in the SEND_DATA state is modeled from other 802.3 state machines such as Figures: 36-7a, 37-6, 28-15 or 28-16.

While the IF could be "hidden" in the definition of cvtx_terminate, it is felt that the conditional statement clearly expresses when cvtx_terminate is called.

Cl **48**   *SC* **48.2.5.2.1**   *P* **314**   *L* **4**   # **573**

Don Alderrou   nSerial

Comment Type   **T**   *Comment Status*   **A**   *Eric OK*

The Q_DET_IDLE state in Figure 48-7, PCS fault message detect state diagram, is not timeless as listed in line 51 of page 305 (subclause 48.2.5 Detailed functions and state diagrams.) It has TX_CLK as a transition condition to exit the state, thus the state machine will remain in the state for one or more TX_CLK cycles. A Mealy state machine that sets the Q_det variable and the TQMSG vector conditionally on TX=||Q|| is required.

SuggestedRemedy

Since the state machine conventions don't allow conditional outputs, more states (and variables) need to be added/defined or this state machine needs to be replaced by a function.

Proposed Response   *Response Status*   **C**

ACCEPT. Change applied in D2.2. Replaced PCS fault message detect state diagram with function Q_det as redefined by 572.

Cl **48**   *SC* **48.2.5.2.4**   *P* **317**   *L*   # **166**

R"mer, Tume   Optillion AB

Comment Type   **T**   *Comment Status*   **A**   *Eric OK*

See figure 48-10 pg 317, also sc 48.2.5.1.4 pg 310, definitions of check_endand cvrx_terminate.The priority of the functions in state TERMINATE is unclear. Presumablythe results of check_end should override the results of cvrx_terminatewhich in turn overrides the results of ENCODE.

SuggestedRemedy

Make the priority of applications of multiple of functions to the same signal clear by stating a sequential execution of functions in a state,ordo the same by stating this at the definitions of ENCODE, check_end andcvrx_terminate.

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE. Change applied in D2.2. Modified definition of DECODE to include the following as the second to last sentence.
"When decoding ||T||, the returned XGMII RX value is further modified by the cvrx_terminate and check_end functions, the result of the check_end function takes priority over the result of the cvrx_terminate functon."

Similarly, as ENCODE and cvtx_terminate have the same problem, modified the definition of ENCODE to include the following as the second to last sentence. "When encoding ||T||, the XGMII TX values are modified by the result of the cvtx_terminate function."

Cl **48**   *SC* **48.3.3**   *P* **320**   *L* **23**   # **640**

William G. Lane   CSU, Chico

Comment Type   **T**   *Comment Status*   **R**   *Rich OK*

Loopback is a PMD function and should be defined as such

SuggestedRemedy

Delete subclauses 48.3.3, 48.3.3.1, and 48.3.3.2 for clause 48 (similar text defining the loopback function will be included in clause 54)

Proposed Response   *Response Status*   **C**

REJECT. The loopback function in clause 48 is a PMA function. An equivalent function is specified for 1000BASE-X in clause 36. Also note that 1000BASE-X does not support PMD loopback.

Cl **48**   *SC* **48.3.3**   *P* **320**   *L* **25-36**   **#** **320**

Baumer, Howard   Broadcom

Comment Type **T**   *Comment Status* **D**   *Rich OK*

loopback mode description could be in conflict with register bit 4.0.14. In 48.3.3 loopback is defined wrt the local definition of transmit and recieve. That is the TXD/C data is looped back to the RXD/C data. The defintion of bit 4.0.14 (PHY XS) says that the transmit path is looped back to the recieve path. For the PHY XS the transmit path is the MDI recieve to RXD/C and the receive path is the TXD/C to MDI transmit. This in effect flips the local transmit and receive such that the loopback no needs to take the MDI receive data and loop it back to the MDI transmit data. This is in conflict with the 48.3.3 description of loopback.

SuggestedRemedy

Add to the description in 48.3.3 to describe both cases.

Proposed Response   *Response Status* **Z**

Cl **48**   *SC* **48.5.1**   *P* **321**   *L*   **#** **163**

R"mer, Tume   Optillion AB

Comment Type **T**   *Comment Status* **A**   *Rich OK*

The delay constraint for the different PCS's are not expressed in thesame way (and look like they are not the same). Decide on one of theways to express the delay, even if it is not the same numbers.(See table 48-6 pg 321, compare 49.2.15 pg 357)10GBASE-X has a delay expressed as the time from XGMII to MDI and asthe time from MDI to XGMII. 10GBASE-R has a time express as the PCSpart of the latency from TX-XGMII to RX-XGMII.10GBASE-R has a delay of 3585 BT on it's delay path.
10GBASE-X has a delay of 1024 BT on it's delay path.
Comparable numbers is 3585+2*(pma-delay) BT versus 2048 BT.

SuggestedRemedy

Decide on one of the ways to express the delay. If there is not a reason to why the numbers are different, change to same numbers.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Change applied in D2.2. See 321 for applied solution.

Cl **48**   *SC* **48.7.4.4**   *P* **325**   *L* **10**   **#** **322**

Baumer, Howard   Broadcom

Comment Type **E**   *Comment Status* **A**   *Rich OK*

DLY is defined as MDI to GMII it s/b MDI to XGMII and XGMII to MDI

SuggestedRemedy

Defined DLY as MDI to XGMII and XGMII to MDI

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. OBE by 321.

Cl **48**   *SC* **48.Table 48-6**   *P* **48.321**   *L* **45**   **#** **34**

gaither, justin   Rocketchips

Comment Type **E**   *Comment Status* **R**   *Rhett OK*

Bit time is based on MAC bit time which is 100ps, has incorrect units.

SuggestedRemedy

change ps to ns

Proposed Response   *Response Status* **C**

REJECT. 10 GbE MAC bit time is 100 psec as stated.

Cl **48**   *SC* **Fig. 48.4**   *P* **300**   *L* **29-46**   **#** **316**

Baumer, Howard   Broadcom

Comment Type **E**   *Comment Status* **A**   *Rich OK*

Figure 48.4 shows XGMII data as 1.25 billion characters/s, the PMA service interface as 1.25 billion code gropes/s and the PMD service interface ate 12.5 bilion bits/s. The figure is stated as only showing lane 0. This then gives us the following equivilant bit rates:
XGMII = 40 billion bits/s (4lanes * 8bits/char *1.25 billion characters/s)
PMA = 50 billion bits/s (4lanes * 10bits/char * 1.25 billion code groups/s)
PMD = 50 billion bits/s (4lanes * 12.5 billion bits/s)

SuggestedRemedy

Emphisize that the figure illustrate just one of the 4 lanes and change the numbers to:
XGMII 312.5 million characters/s
PMA 312.5 code groups/s
PMD 3.125 billion bits/s
for a total of 12.5 billion bits/s accross all 4 lanes

Proposed Response   *Response Status* **C**

ACCEPT. Change applied in D2.2.

Cl **48**   *SC* **Figure 48-2**   *P* **297**   *L* **20**   **#** **53**

Stephen Haddock   Extreme Networks

Comment Type **E**   *Comment Status* **A**   *Rhett OK*

I think the signals labeled rx_code_group<39:0> should be rx_unaligned.

SuggestedRemedy

Change rx_code-group to rx_unaligned.

Proposed Response   *Response Status* **C**

ACCEPT. Change applied in D2.2.

Cl **48**   *SC* **Figure 48-2**   *P* **297**   *L* **8**   # **52**

Stephen Haddock   Extreme Networks

Comment Type **E**   *Comment Status* **A**   *Rhett OK*

The diagram implies that the MGMT block uses information from the receive side to control the transmit side. There is no longer any linkage between receive and transmit at this layer. The management block is not described by the text, so my first choice would be to delete this block. Alternatively it could be renamed Management Registers and have dual-pointed arrows to each other block, with additional arrows indicating an optional MDC/MDIO connection.

SuggestedRemedy

Delete the MGMT block.

Proposed Response   *Response Status* **C**

ACCEPT. Change applied in D2.2.

Cl **48**   *SC* **Figure 48-6**   *P* **313**   *L* **7**   # **471**

Lynskey, Eric   UNH IOL

Comment Type **T**   *Comment Status* **A**   *Bob OK*

The transition from START_TX to SEND_DATA becomes irrelevant if the transition from START_TX to SEND_K is modified to look for ||Idle|| OR ||Q||. The global transition into SEND_DATA takes makes it unnecessary.

SuggestedRemedy

Totally remove the transition from START_TX to SEND_DATA.

Proposed Response   *Response Status* **C**

ACCEPT. Change applied in D2.2.

Cl **48**   *SC* **Figure 48-6**   *P* **313**   *L* **8**   # **470**

Lynskey, Eric   UNH IOL

Comment Type **T**   *Comment Status* **A**   *Bob OK*

When in the START_TX state, if TX=||Q||, it will enter the SEND_DATA state, and send a ||Q|| which will not be preceded by an ||A||. To make things consistent, change it so it will never send a ||Q|| without sending an ||A|| first.

SuggestedRemedy

Change the exit condition from START_TX to SEND_DATA to the following: TX_CLK * !(TX=||Idle|| + TX=||Q||).
Change the exit condition from START_TX to SEND_K to the following:
TX_CLK * (TX=||Idle|| + TX=||Q||).

Proposed Response   *Response Status* **C**

ACCEPT. Change applied in D2.2. Modified transition to Send_K. Deleted transition to Send_data per 471.

Cl **48**   *SC* **Figure 48-7**   *P* **314**   *L* **4**   # **499**

Noseworthy, Robert E   UNH IOL

Comment Type **T**   *Comment Status* **A**   *Eric OK*

Race-condition between Fig 48-6 and Fig 48-7:
Figure 48-6 PCS transmit source state diagram
Figure 48-7 PCS Fault Message detect state diagram

Fig 48-7 simply sets Q_det and TQMSG when TX=||Q||
A race-condition can occur in Figure 48-6 whenever an ||A|| is currently being transmitted and Q_det=false. On the next tx_clk, if TX=||Q|| it is unclear if Q_det will be set to true by Figure 48-7 prior to the evaluation of the exit conditions from either the SEND_A or SEND_RANDOM_A states (where the value of Q_det is checked.
  Two cases exist where TX might equal ||Q||. In the case where the RS is constantly sourcing ||Q||, this race-condition is insignificant. However in the second case, when both link partners have a XAUI, then the transmitter of the PHY XGXS will receive ||Q|| to transmit up to the DTE XGXS only once every 17-32 columns. In this case, the race condition effects the maximum possible spacing of ||Q|| received at the DTE XGXS and correspondingly at the RS layer.
  This problem can be avoided if Q_det is redefined to always look at the value of TX from the previous tx_clk.
TX of PHY XGXS   -> IQII... IIQII... IIII...
tx_codegroup of PHY XGXS -> KAQR... RARKK... KAQR...
                        ^race condition avoided
This solution would limit the maximum spacing of Qs to 63 columns

SuggestedRemedy

Remove Figure 48-7
No change to Figure 48-6 is required.
Redefine Q_det as a function:
"Returns a boolean indicating the need to transmit sequence ordered_sets.
The Q_det function operates on TX from the previous TX_CLK. If TX was ||Q|| then TQMSG is set with the encoded value of TX, and Q_det is set to true.
Note: The Q_det function is cleared by the PCS transmit source state diagram."
Alternatively, Figure 48-7 might be fixed by expressing the transition from states Q_DET_IDLE to Q_DET as "TX_CLK * TX(n-1)=||Q||" and defining TX(n-1)

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Change applied in D2.2. See 572.

Cl **48**   *SC* **Figure 48-9**   *P* **316**   *L* **25**   # **472**

Lynskey, Eric   UNH IOL

Comment Type   **T**   *Comment Status* **A**   *Bob OK*

The bottom half of the deskew state machine is not consistent as it moves throughout the levels. It should be made such that a deskew_error always causes it to move down a level, and an ||A|| always causes it to move up a level. Valid columns that are not ||A|| cause it to stay in the same level. There will be four levels, ALIGN_ACQUIRED_1-4. The transitions for each state progress as listed above.

SuggestedRemedy

Replace the bottom half (beginning with ALIGN_ACQUIRED_1 and below) of the deskew state diagram with the following:
ALIGN_DETECT_3 keeps the same transition to ALIGN_ACQUIRED_1.
ALIGN_ACQUIRED_1 has align_status<=OK and AUDI
ALIGN_ACQUIRED_2 has AUDI
ALIGN_ACQUIRED_3 has AUDI
ALIGN_ACQUIRED_4 has AUDI
The transition from ALIGN_ACQUIRED_1 to ALIGN_ACQUIRED_2 is deskew_error*SUDI.
The transition from ALIGN_ACQUIRED_1 to itself is !deskew_error*SUDI. The transition from ALIGN_ACQUIRED_2 to ALIGN_ACQUIRED_3 is deskew_error*SUDI. The transiton from ALIGN_ACQUIRED_2 to itself is !deskew_error*SUDI(!||A||). The transition from ALIGN_ACQUIRED_2 to ALIGN_ACQUIRED_1 is SUDI(||A||). The transition from ALIGN_ACQUIRED_3 to ALIGN_ACQUIRED_4 is deskew_error*SUDI. The transition from ALIGN_ACQUIRED_3 to itself is !deskew_error*SUDI(!||A||). The transition from ALIGN_ACQUIRED_3 to ALIGN_ACQUIRED_2 is SUDI(||A||). The transition from ALIGN_ACQUIRED_4 to LOSS_OF_ALIGNMENT is deskew_error*SUDI. The transition from ALIGN_ACQUIRED_4 to itself is !deskew_error*SUDI(!||A||). The transition from ALIGN_ACQUIRED_4 to ALIGN_ACQUIRED_3 is SUDI(||A||).

Proposed Response   *Response Status* **C**

ACCEPT.   Change applied to D2.2.

Cl **48**   *SC* **table 48-6**   *P* **321**   *L* **44**   # **321**

Baumer, Howard   Broadcom

Comment Type   **T**   *Comment Status* **A**   *Rich OK*

The MDI to XGMII delay constraint definition possible counts the media skew as part of the measured delay. The defintion says the delay is measured from the start of ||S|| on the MDI to the rising edge of RX_CLK. This can mean or be interpreted in the following ways:Start of ||S|| is:
1) first bit of the byte in the lane that arives first at the MDI
2) first bit of the byte in the lane that arives last at the MDI
3) first bit of the /S/ byte on lane 0
Using #1 counts the media skew in the MDI-XGMII delay
#2 does not count the mdia delay
#3 might or might not count the media delay depending on the skew of lane 0 wrt the oter lanes
Also using the rising edge of RX_CLK does not guarnatee that the XGMII data transfer containg the ||S|| is counted at the right time since RX_CLK is a DDR clock and ||S|| can come on any edge of RX_CLK

SuggestedRemedy

Define the start of ||S|| as in #2 and use any edge of RX_CLK

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Change applied in D2.2. Simplified by adopting the Delay Constraint format used by clause 44. Table 48-6 is deleted and 48.5.1 is rewritten as:

48.5.1 Delay Constraints

Predictable operation of the MAC Control PAUSE operation (clause 31, annex 31B) demands that there be an upper bound on the propagation delays through the network. This implies that MAC, MAC Control sub-layer, and PHY implementors must conform to certain delay maxima, and that network planners and administrators conform to constraints regarding the cable topology and concatenation of devices. The sum of transmit and receive delay contributed by the 10GBASE-X PCS shall be no more than 1024 BT.

A corresponding change is made to PICS entry DLY.

Cl **48A**   *SC*   *P* **327**   *L* **3**   # **480**

Dawe, Piers   Agilent

Comment Type **T**   *Comment Status* **R**   *Rich OK*

This annex claims to be normative. We voted to allow this jitter test patterns work to proceed in an annex, not in the clause. We have a clear precedent in Annex 36A, which is and remains informative. There is no satisfactory reason for why this annex should be more compulsory than that one; an attempt to make unessential things mandatory could be seen as restraint of trade. Indeed, one wonders why this annex differs to 36A. If the differences reflect our evolving understanding of jitter testing, then clearly it would be harmful to attempt to freeze the state of the art now.

SuggestedRemedy

Change "normative" to "informative". Change 48.7.4.1 CC1 to "O" following 36.7.4.1 CC1. Change "shall" to "may" or similar in 47.4.1 p286 line 26.

Proposed Response   *Response Status* **C**

REJECT. Potentially controversial. This was the decision of the Working Group in Irvine. Apparent conflict between the informative requirements of 48.3.4 and the normative requirements of Annex 48A. Commenter is requested to resubmit a comment during Working Group Ballot to address these issues.

Cl **48A**   *SC* **48.A.5**   *P* **329**   *L* **20**   # **469**

Lynskey, Eric   UNH IOL

Comment Type **T**   *Comment Status* **A**   *Rich OK*

The pattern is already given containing the information for all 4 lanes. It is not correct to say that the sequence is repeated on each lane. To make both test patterns consistent, change the Modified JTPAT sequence to only specify a single lane instead of all 4.

SuggestedRemedy

MODIFIED JTPAT SEQUENCE (LOOP 8 TIMES, 2 TIMES ON EACH of 4 LANES).7E for 132 Bytes - Low Density Transition Pattern;
F4 for 1 Byte - Phase Jump;
EB for 1 Byte - Phase Jump;
F4 for 1 Byte - Phase Jump;
EB for 1 Byte - Phase Jump;
F4 for 1 Byte - Phase Jump;
EB for 1 Byte - Phase Jump;
F4 for 1 Byte - Phase Jump;
AB for 1 Byte - Phase Jump;
B5 for 40 Bytes - High Density Transition Pattern;
EB for 1 Byte - Phase Jump;
F4 for 1 Byte - Phase Jump;
EB for 1 Byte - Phase Jump;
F4 for 1 Byte - Phase Jump;
EB for 1 Byte - Phase Jump;
F4 for 1 Byte - Phase Jump;
EB for 1 Byte - Phase Jump;
F4 for 1 Byte - Phase Jump;

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Change applied in D2.2. Deleted the sentence: "The Modified RPAT sequence is repeated on each lane:"

TYPE: TR/technical required   T/technical   E/editorial   COMMENT STATUS: D/dispatched   A/accepted   R/rejected   SORT ORDER: Clause, Page, Line, Subclause   Page 66 of 144

RESPONSE STATUS: O/open   W/written   C/closed   U/unsatisfied   Z/withdrawn   *Cl* **48A**   *SC* **48.A.5**

Cl **48A**　　*SC* **48A.4**　　　　　*P* **328**　　　*L* **36-38**　　　# **88**

Brown, Benjamin　　　　　　　　　　AMCC

Comment Type **E**　　　*Comment Status* **A**　　　　　　*Rhett OK*

It is not clear how to put this pattern across all 4 lanes.

SuggestedRemedy

Re-write this subclause similar to the way 48A.5 is written, i.e.
BE for 4 btyes
D7 for 4 bytes
.
.
.
59 for 4 bytes
then this pattern is repeated 31 times.Also, in both of these subclauses, the first byte of
preamble and all the bytes of IPG do not at all match up with octet sequences as observed at
the XGMII. Either remove the XGMII part or change these bytes to match what actually does
appear on an XGMII.

Proposed Response　　　*Response Status* **C**

ACCEPT. Change applied in D2.2.

Cl **48A**　　*SC* **48A.5**　　　　　*P* **329**　　　*L* **43**　　　# **468**

Lynskey, Eric　　　　　　　　　　UNH IOL

Comment Type **T**　　　*Comment Status* **A**　　　　　　*Rich OK*

The sequence listed does not contain the proper ""killer"" pattern. After sending the B5 bytes, to
keep the killer pattern, it should be changed to EB F4 instead of the way it is now. When the
running disparity is positive coming out of the B5 bytes, sending F4 EB gives:0010110001
1101001110
Sending EB F4 gives:
1101001000
0010110111
The latter pattern contains the desirable killer pattern that is prevelant in the first half of the total
pattern, before the B5 bytes.

SuggestedRemedy

Change the pattern (in both places) to:
B5 for 160 bytes
EB for 4 bytes
F4 for 4 bytes
EB for 4 bytes
F4 for 4 bytes
EB for 4 bytes
F4 for 4 bytes
EB for 4 bytes
F4 for 4 bytes
Also, change the CRC to AD 84 E1 2D

Proposed Response　　　*Response Status* **C**

ACCEPT. Change applied in D2.2.

Cl **49**　　*SC*　　　　　　　*P* **333**　　　*L* **25**　　　# **375**

Armin Pitzer　　　　　　　　　　Infineon Technologies

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

`changed the BER state machine so that the first 125 microsec interval doesn't start until lock
has been achieved.' What has been written in the change summary wasn't corrected in figure
49-13 on page 345.

SuggestedRemedy

figure 49-13: state: BER_MT_INIT: change UCT with block_lock

Proposed Response　　　*Response Status* **C**

REJECT.　　Read 49.2.13.1 State Machine Conventions which says in part: "The notation
used in the state diagrams follows the conventions of 21.5." Then read 21.5 which says "Any
open arrow (an arrow with no source block) represents a global transition. Global transitions are
evaluated continuously whenever any state is evaluating its exit conditions. When a global
transition becomes true, it supersedes all other transitions, including UCT, returning control to
the block pointed to by the open arrow."

The global transition into the state will be true as long as block_lock is false. Therefore, UCT
will not be acted upon until block_lock is true and it would be redundant to condition the
transition with block_lock.

Cl **49**　　*SC* **1.4.1**　　　　　*P* **336**　　　*L* **41**　　　# **354**

Tim Warland　　　　　　　　　　Nortel Networks

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

bullet c) When connected to a WAN PMD, deleting and inserting idles for rate compensation.
The PCS layer is also responsible for rate compensation in LAN mode.

SuggestedRemedy

delete: When connected to a WAN PMD,

Proposed Response　　　*Response Status* **C**

REJECT. Only in the case of WAN PMDs is it necessary to delete and insert idles to
compensate for data rate difference between the MAC and PMD.

In the LAN case, rate compensation is an implementation choice rather than a required
function of the PCS. An implementation of the 10GBASE-R PCS could use an output transmit
clock derived from its input transmit clock and similarly an output receive clock derived from its
input receive clock. In that case, it would not need to insert and delete idles. For the LAN case, it
is therefore, not a service required by the XGMII and does not belong in the table.

Cl **49**   *SC* **1.6**   *P* **339**   *L* **22**   **#** **355**

Tim Warland   Nortel Networks

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

Functional block diagram includes a block for BER and sync header monitor but does not include a block for the jitter pattern generator and pattern detector.

SuggestedRemedy

Add a block to the PCS transmit side for jitter generation
Add a block to the PCS receive side for jitter detection and checking

Proposed Response   *Response Status* **C**

REJECT. The other block diagrams (e.g. 48-2, 50-2 and 50-3) do not show blocks for test modes such as loopback and jitter test. This is an overview and only the normal operational blocks should be shown.

Cl **49**   *SC* **2.14.2**   *P* **357**   *L* **18**   **#** **356**

Tim Warland   Nortel Networks

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

Editors note says: Since an 8 bit counter would detect a BER rate of about 10E-8 if read.... But paragraph 49.1.2 bullet f suggests an acheivable BER of 10E-12. Shouldn't the jitter detector be able to verify this parameter?

SuggestedRemedy

Expand jitter pattern detector to acheive a BER of 10E-12.

Proposed Response   *Response Status* **C**

REJECT. The commenter misinterprets the direction of the limitation. The BER detector detects bit error rates of 10^-8 or less when read once per second. 10^-12 is less than 10^-8. Higher bit error rates, e.g. 10^-6, would produce error counts more rapidly, but since we know that the devices under test have an excessive error rate when the counter overflows, we do not need more precision. A device achieving the target error rate of 10^-12 would produce one count every 100 seconds and an 8 bit counter is quite adequate for counting that.

Of course, even if the bit error rate is very bad, one could determine how bad it is by reading the counter more frequently than once per second.

Cl **49**   *SC* **49**   *P* **353**   *L* **32**   **#** **91**

Brown, Benjamin   AMCC

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

Since the threshold for BAD has changed from 32 to 16, the name of this state is confusing

SuggestedRemedy

Replace the name of state "32_BAD" with "16_BAD"

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. The name would still be inaccurate because when not locked the state is entered with a single bad SH. Rename state to SLIP. Change applied in D2.2.

Cl **49**   *SC* **49**   *P* **355**   *L* **7**   **#** **92**

Brown, Benjamin   AMCC

Comment Type **T**   *Comment Status* **A**   *Review - state machine*

I don't understand the purpose of sending local fault when the transmit state machine is in reset. Reset affects more than just the state machine, it also affects the scrambler and the gear box. This local fault code will never make it past the state machine during reset because the scrambler and gear box will ignore it. It really matters little what is in this state because nothing intelligible will get through the reset scrambler but using this encoding will confuse users, thinking that the detection of LF might mean the far end is still in reset. Don't confuse local fault with reset!

SuggestedRemedy

Remove this assignment of "tx_coded <= LBLOCK_T" from state TX_INIT and return it to "tx_coded <= IBLOCK_T" as it was in D2.0

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Normally we say what one sends in each state. As the commenter points out, it normally doesn't matter what is sent in this state. Local fault is there in case the chip doesn't all finish reset at the same time on the principle that if we aren't fully functional but can send something it should be LF. If an odd situation occurred where the PCS transmit state machine was stuck in Reset with the scrambler and gearbox operational, then LF would be the thing to send.

The state sent idle in D2.0 and was changed to LF by the task force as a result of a review comment. It shouldn't be flip-floped back and forth each meeting without a significant reason.

To address your concern about user confusion, the following will be added to the description of the transmit state machine at page 352 line 46: "Though the Transmit state machine sends LF ordered sets when reset is asserted, the scrambler and gearbox may not be operational during reset. Thus, the LF ordered sets may not appear on the WIS or PMA service interface." Change applied in D2.2.

Cl **49**   *SC* **49.1.4.5**   *P* **337**   *L* **46**   **#** **8**

Stoltz, Mario   ChipIng.de, an Intel co

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

Text reads "in the following figure".

SuggestedRemedy

Replace with "in figure 49-3" which is more consistant with the notation elsewhere and clearer.

Proposed Response   *Response Status* **C**

ACCEPT. Change applied in D2.2.

Cl **49**   *SC* **49.2.12**   *P* **348**   *L* **42-43**   **#** **348**

David Gross   Nortel Networks

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

The wording for what the jitter pattern checker is checking against is a bit confusing. In fact, once synchronized, if no errors occur, the jitter pattern checker's output should always be zero. (This is because the Jitter Patter Generator acts as a scrambler with its input tied to zero).

SuggestedRemedy

Add the sentence: "The Jitter Pattern Error output signal should remain zero unless an error occurs."

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Replace the last sentence of the paragraph with: "When no errors occur, the Jitter Pattern Error signal will be zero. When an isolated bit error occurs, it will cause the Jitter Pattern Error signal to go high three times; once when it is received and once when it is at each tap." Change applied in D2.2.

Cl **49**   *SC* **49.2.13.2.1**   *P* **350**   *L* **11**   **#** **349**

David Gross   Nortel Networks

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

The reference to the LF definition is wrong. It should be 46.3.4.

SuggestedRemedy

Change the reference to 46.3.4

Proposed Response   *Response Status* **C**

ACCEPT. Change applied in D2.2.

Cl **49**   *SC* **49.2.13.3**   *P* **352**   *L*   **#** **169**

R"mer, Tume   Optillion AB

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

See figure 49-12 pg 353 and slip_done definition pg 351 line 42.slip_done is set to false in state RESET_CNT but set true "somewhere".

SuggestedRemedy

Define the slip function (pg 351 line 40) to also set slip_done true whenslip is done.

Proposed Response   *Response Status* **C**

REJECT.   The slip_done variable already says that it is set true when the slip has been done. "Boolean variable which is asserted true when the slip requested by the Block Lock State Machine has been completed indicating that the next candidate block sync position can be tested."

slip is not a function. It is a variable sent to the implementation dependent function that performs the slip. That implementation dependent function communicates back with slip_done. Since slip is a variable, it cannot manipulate another variable.

Cl **49**   *SC* **49.2.13.3**   *P* **353**   *L* **1**   **#** **574**

Don Alderrou   nSerial

Comment Type **T**   *Comment Status* **R**   *Review - State Machine*

Looking at the three receive state machines;
Figure 49-12—Lock state machine
Figure 49-13—BER monitor state machine
Figure 49-15—Receive state machine
there is a possible lock-up condition to hold the Receive state machine (Figure 49-15) in the RX_INIT state because of a faulty block_lock condition. If block_lock becomes incorrectly true due to a strange data pattern such that there is always sh_valid in the first 64 frames, then the sh_valid is false in less than 16 frames out of 64 to retain block_lock as always true. At the same time there could be more than 16 sh_valid errors in 125us, so the BER state machine (Figure 49-13) will set hi_ber = true. This will hold the Receive state machine in the RX_INIT state indefinitely, without having the Lock state machine (Figure 49-12) try to re-acquire block_lock.

SuggestedRemedy

Add the hi_ber condition to the global transition into the LOCK_INIT state of the Lock state machine (Figure 49-12.)

Proposed Response   *Response Status* **C**

REJECT.   It has been shown that a valid 64B/66B encoded data stream will produce 32 out of 64 blocks with bad sync headers within a very short time. See the 0.5 error rate point (which is what the error rate of sync headers looks like when the sync is wrong) on red line on page 13 of walker_1_0700. We lowered the error count to 16. The probability of having bad lock and yet receiving a single set of 64 blocks with fewer than 16 sync header errors is 12e-6. There are about 18e3 sets of 64 blocks in 125 us for WIS. That means that the chance of going 125 us without getting a set with 16 errors is less than 1 in 10^236. If we are getting high BER without loosing lock, one of two things is going on:
  We are locked but bit error rate is high, or
  We are connected to a signal that is not 10GBASE-R.
In either case, trying to re-obtain lock will accomplish nothing.

Cl **49**   *SC* **49.2.14.2**   *P* **357**   *L* **7**   **#** **93**

Brown, Benjamin   AMCC

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

misspelled state name

SuggestedRemedy

Replace "bad_ber_sh" with "ber_bad_sh"

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.   Use #350 (state names are in caps). Change applied in D2.2.

Cl **49**   *SC* **49.2.14.2**   *P* **359**   *L* **7**   # **350**

David Gross   Nortel Networks

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

The definition for ber_count references the "bad_ber_sh" state. This doesn't exist, and it should be replaced with BER_BAD_SH.

SuggestedRemedy

Change the referenced state from bad_ber_sh to BER_BAD_SH.

Proposed Response   *Response Status* **C**

ACCEPT. Change applied in D2.2.

Cl **49**   *SC* **49.2.15**   *P* **357**   *L*   # **164**

R"mer, Tume   Optillion AB

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

The delay constraint for the different PCS's are not expressed in thesame way (and look like they are not the same). Decide on one of theways to express the delay, even if it is not the same numbers.(See table 48-6 pg 321, compare 49.2.15 pg 357)10GBASE-X has a delay expressed as the time from XGMII to MDI and asthe time from MDI to XGMII. 10GBASE-R has a time express as the PCSpart of the latency from TX-XGMII to RX-XGMII.10GBASE-R has a delay of 3585 BT on it's delay path.
10GBASE-X has a delay of 1024 BT on it's delay path.
Comparable numbers is 3585+2*(pma-delay) BT versus 2048 BT.

SuggestedRemedy

Decide on one of the ways to express the delay.If there is not a reason to why the numbers are different, change to samenumbers.

Proposed Response   *Response Status* **C**

REJECT. with respect to changing clause 49. A consistant approach to specifying sublayer delay was tasked to the editors and we selected the method shown here and in clause 44. Clauses 48, 50, and 51 will require updates to match. The numbers are different because the job each PCS has to perform differs so one requires more delay than the other.

Cl **49**   *SC* **49.2.4**   *P* **345**   *L*   # **255**

gaither, justin   Rocketchips

Comment Type **T**   *Comment Status* **R**   *Review - reserved codes*

The 64/66B encoder searches for reserved and special control codes that should not regularly belong on the XGMII bus such as /A/,/K/, and /R/. It assigns type fields to each of these. This complicates the encoder/decoder unnecessarily.Further, the TX state machine, goes to TX_E and overwrites these encodings when it does not recieve a full set of eight control characters other than /O/, /S/, or /T/ which leaves only idle. The other control characters /A/, /K/, /R/ should NEVER exist as a set of 8 at the XGMII

SuggestedRemedy

Remove these special/unneeded control characters from the encoder/decoder, and default unmatching control characters to /E/. While we will never see a set of 8 /A/, /K/, or /R/ codes from the XGMII, we may see a set containing a mixture of 8 control codes including some that are /A/, /K/ or /R/

Proposed Response   *Response Status* **C**

REJECT. These codes can appear on the XGMII from an XGXS. Errors may cause the XGXS may produce a set of 8 characters with /A/, /K/, /R/ and /I/ codes. For instance, bit errors might change an /A/ to a /K/ or /R/. If this occurs, the XGXS will transfer 3 /A/s and a /K/ or /R/ to the PCS. This is the table that the task force voted to have and it isn't broken.

Cl **49**   *SC* **49.2.4.10**   *P* **346**   *L* **5**   # **54**

Stephen Haddock   Extreme Networks

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

The PCS should be able to delete 1 of 2 consecutive identical ordered sets, regardless of their O-code.

SuggestedRemedy

Change "sequence ordered sets" to "ordered sets" in two places in the paragraph above the editor's note.

Proposed Response   *Response Status* **C**

REJECT. The reserved ordered set is expected to be Fibre Channel's signal ordered set. The signal ordered set will be used for cases in Fibre Channel that don't require continuous signalling and for which insertion or deletion would be detrimental. For example, the number of R_RDYs received is significant and they should not be removed.

Cl **49**   *SC* **49.2.4.5**   *P* **343**   *L*   # **160**
R"mer, Tume   Optillion AB

Comment Type   **T**   *Comment Status*   **A**   *Review -reserved codes*

See also table 49-1. The mapping of /K28.2/ is not consistent betweenthe 10GBASE-X PCS and the 10GBASE-R PCS. x5C is mapped to /k30.7/ onthe 10GBASE-X and /K28.2/ on the 10GBASE-R.Is a fiber channel signal on the ethernet XGMII an error or is it simplymapped but not understood ?Make consistent between the PCS's and clearify intention!

SuggestedRemedy

Make consistent between the PCS's and clearify intention!Either it is an error or it is not.

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE. This appears to be an error in the table 48-2 in clause 48. Table 48-4 shows K28.2 in the signal ordered set that is reserved for Fibre Channel. Table 48-3 shows reserved code groups mapping according to table 36-2. Clause 48 also says the Encode and Decode functions follow the rules of 36.2.4.1 through 36.2.4.6 which includes table 36-2. Table 36-2 shows 0x5c encoding to K28.2.

49.2.4.6 and the definitions R_BLOCK_TYPE and T_BLOCK_TYPE specify the rules for valid code blocks. 49.2.4.6 lists the conditions that make a block invalid including "any O code contains a value not in Table 49-1" and "any control character contains a value not in Table 49-1." R_BLOCK_TYPE defines a valid O code as one appearing in Table 49-1.

Therefore, the intent is clear that reserved values are mapped according to the table and do not produce /E/. The intent is that the specification here allows one to build a component that doesn't care whether Ethernet or Fibre Channel is above it.

To make it absolutely clear with no holes, will add the following to the end of the last paragraph of T_BLOCK_TYPE definition: "A valid /O/ is any character with a value for O code in Table 49-1." Change applied in D2.2.

Cl **49**   *SC* **49.2.4.7**   *P* **344**   *L* **48**   # **608**
Thaler, Pat   Agilent Technology

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

Minimum IPG including the /T/ should be 5.

SuggestedRemedy

Replace with:
"When deleting /I/s, the minimum IPG of 5 characters shall be maintained."
or
"When deleting /I/s, the first 4 characters after the /T/ shall not be deleted."

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE. Use: "When deleting /I/s, the first 4 characters after a /T/ shall not be deleted." Change applied in D2.2.

Cl **49**   *SC* **49.2.8**   *P* **347**   *L* **20**   # **609**
Thaler, Pat   Agilent Technology

Comment Type   **T**   *Comment Status*   **R**   *Review - jitter test*

The pattern generated here is not a particularly stringent test of the receiver. It's maximum run length is 31 bits. A run this long will occur in the real data stream about once in 4 * 10^9 bits which is well below our target error rate. A run length of 40 or greater should be included in the test.

SuggestedRemedy

I will bring a proposal for a new jitter test generator to the meeting.

Proposed Response   *Response Status*   **C**

REJECT.   It isn't clear that the proposed pattern is the exact one we want to use. We have chartered an ad hoc to develop a complete proposal.

Cl **49**   *SC* **49.2.8**   *P* **347**   *L* **34**   # **347**
David Gross   Nortel Networks

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

The statement: "There is on requirement on the initial value for the PRBS generator" is wrong. If the initial value is chosen to be all zeros, the PRBS will be stuck in that state indefinetly.

SuggestedRemedy

The statement should be reworded as: "The initial value of the PRBS generator can be anything except all zeros."

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE. If existing jitter generator is retained, change to "The intial value of the PRBS generator shall not be all zeros. It may be any other value." But this change may be OBE. See comment 609. Change applied in D2.2.

Cl **49**   *SC* **49.2.8**   *P* **347**   *L* **34**   # **165**
R"mer, Tume   Optillion AB

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

If the value of the PRBS initially is 0 then it will never get another value. (A good implementation would probably not be donethat way, but it states that there is NO requirement, so basically,I am allowed to replace the PRBS(init=0) with an equivalent function,ie remove it....)

SuggestedRemedy

Change to "The PRBS generator initial value should not be 0." or somethingsimilar.

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.   See #347.Change applied in D2.2.

Cl **49**   *SC* **49.49.2.13.2.2**   *P* **49.351**   *L*   **#** **35**

gaither, justin   Rocketchips

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

125us_timer_done is not documented in the variables section.

SuggestedRemedy

add:
125us_timer_done: Boolian variable which is set true when the 125us_timer reaches its final count.

Proposed Response   *Response Status* **C**

REJECT.   Read 49.2.13.1 State Machine Conventions which says in part: "State diagram timers follow the conventions of 14.2.3.2." Then read 14.2.3.2 which defines the terms x_timer_done and x_timer_not_done for every timer x.

Cl **49**   *SC* **49.49.2.4**   *P* **345**   *L*   **#** **161**

R"mer, Tume   Optillion AB

Comment Type **T**   *Comment Status* **R**   *Review - reserved codes*

Inconsistency between 10GBASE-R and 10GBASE-X. See also pg 301, table 48-2.The reserved values are not handled constently. 10GBASE-R will map thereserved1, reserved4, reserved5 and reserved6, 10GBASE-X will not (mapsto /E/). What is the intetion ? Should the reserved values be handled but notunderstood or should they be errored ?

SuggestedRemedy

Make consistent.

Proposed Response   *Response Status* **C**

REJECT.   with respect to changing clause 49. See also response to 343. The intent is that reserved codes map to their corresponding values rather than to /E/. This is consistant within clause 49. Clause 48 indicates that except in table 48-2.

Cl **49**   *SC* **49.Figure 49-13**   *P* **49.354**   *L* **26**   **#** **36**

gaither, justin   Rocketchips

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

125us_timer_not_done is not a defined variable.

SuggestedRemedy

change to !125us_timer_done

Proposed Response   *Response Status* **C**

REJECT. Read 49.2.13.1 State Machine Conventions which says in part: "State diagram timers follow the conventions of 14.2.3.2." Then read 14.2.3.2 which defines the terms x_timer_done and x_timer_not_done for every timer x.

Cl **49**   *SC* **Figure 49-12**   *P* **353**   *L* **33**   **#** **55**

Stephen Haddock   Extreme Networks

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

State name should no longer be 32_BAD.

SuggestedRemedy

Change state name from "32_BAD" to "16_BAD"

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. The name would still be inaccurate because when not locked the state is entered with a single bad SH. Rename state to SLIP. Same as #91. Change applied in D2.2.

Cl **49**   *SC* **Figure 49-14**   *P* **351**   *L* **53**   **#** **462**

Lynskey, Eric   UNH IOL

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

The definition for tx_raw states that it contains two successive XGMII transfers. It needs to be made clear that it is only evaluated after two XGMII transfers. If not, the following case can happen:The first character represents the TXC character for the transfers, respectively. The next 4 represent TXD for the transfer. Each line represents a single transfer from the XGMII0 D
D D D
8 D D D T
F I I I I
F I I I I
The tx_raw variable contains two successive XGMII transfers. Each line below contains what tx_raw looks like after each XGMII transfer.0 8 D D D D D D D T <- look at tx_raw here
F 8 I I I I D D D T <- this is an error
F F I I I I I I I I <- look at tx_raw here
Since tx_raw is updated with every XGMII transfer, the above example shows that invalid vectors will be created. It needs to be made explicit that tx_raw is evaluated every other XGMII transfer.

SuggestedRemedy

Add to the defintion of tx_raw<71:0>: Once this vector is set with two successive XGMII transfers, it is not set again until two new XGMII transfers have occurred.

Proposed Response   *Response Status* **C**

REJECT. It appears that the comment stems from considering the vector as a physical implementation such as a register rather than as an abstract concept. The vector is an abstract concept. The vector never contains inconsistant values. A register used to implement it may at times have an inconsistant value and if so it is up to the implementor to ensure that it is not used at that time.

The current wording makes it clear that the vector contains two successive transfers and it is explicit about which bit positions contain the first and second transfers. The vector in your example: F 8 I I I I D D D T does not meet the rule "TXC<0> through TXC<3> for the first transfer are placed in tx_raw<0> through tx_raw<3>, respectively. TXC<0> through TXC<3> for the second transfer are placed in tx_raw<4> through tx_raw<7>, respectively. TXD<0> through TXD<31> for the first transfer are placed in tx_raw<8> through tx_raw<39>, respectively. TXD<0> through TXD<31> for the second transfer are placed in tx_raw<40> through tx_raw<71>, respectively." because tx_raw<71:40> in your example contains an earlier transfer than tx_raw<39:0>.

Cl **49**   *SC* **Figure 49-15**   *P* **356**   *L* **46**   **#** **466**

Lynskey, Eric   UNH IOL

Comment Type **T**   *Comment Status* **R**   *Review - State Machine*

If the PCS is in the RX_T state and it receives a 66-bit vector that is not a C or an S, there is no place for the state machine to go.

SuggestedRemedy

Add an exit condition from RX_T to RX_E that says R_TYPE(rx_coded) = (T + D + E).

Proposed Response   *Response Status* **C**

REJECT. Entry to the RX_T state is always conditioned with R_TYPE_NEXT = (S + C). Therefore, when the machine is in that state, the next vector will always be S or C.

Cl **50**   *SC* **50**   *P* **50**   *L*   **#** **94**

Brown, Benjamin   AMCC

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

There seems to be lots of white space at the bottom of somepages when there is a figure at the top of the next page. Thisshould be smoothed out a little better.Examples are pages 366, 368, 372 & 376

SuggestedRemedy

Work with cheif editor to determine appropriate remedy

Proposed Response   *Response Status* **C**

REJECT.

The white space is unfortunately an artifact of FrameMaker, which tends to behave in unpredictable ways with respect to positioning of tables and figures. Therefore, whatever is done now to eliminate the white space is pointless as it will probably recur in future drafts. Also, this does not add to the technical completeness of this draft, and thus the commenter is requested to re-submit the comment in a future ballot cycle (preferably closer to the final draft).

Cl **50**   *SC* **50**   *P* **50.394**   *L*   **#** **104**

Brown, Benjamin   AMCC

Comment Type **T**   *Comment Status* **A**   *In D2.2*

The "increment octet_cnt in this state" comments are unnecessary and are already a part of the description of the octet_cnt function. If desireable, you could add these 2 states to the description of the octet_cnt function.

SuggestedRemedy

Remove "increment octet_cnt in this state" from both DELAY_1 and DELAY_2 states. Add the term "UCT" to the transitions from states "FOUND" and "MISSED" to state DELAY_2.

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **50**   *SC* **50.1.4**   *P* **368**   *L* **13**   *#* **95**

Brown, Benjamin   AMCC

Comment Type **E**   *Comment Status* **A**   *In D2.2*

Wrong clause number in note

SuggestedRemedy

Replace "50" with "53"

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **50**   *SC* **50.1.7**   *P* **369**   *L* **3638**   *#* **96**

Brown, Benjamin   AMCC

Comment Type **E**   *Comment Status* **A**   *In D2.2*

This note says almost the same thing from page 366, lines 8-10. It is not necessary to repeat this information twice.

SuggestedRemedy

Remove the note.

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **50**   *SC* **50.2.3.1**   *P* **371**   *L* **35**   *#* **97**

Brown, Benjamin   AMCC

Comment Type **E**   *Comment Status* **A**   *In D2.2*

Clause 49 no longer sends FRAME_LOCK in the WIS_SIGNAL.request primitive. It now sends PCS_R_STATUS.

SuggestedRemedy

Replace "FRAME_LOCK" with "PCS_R_STATUS" in all instances of the WIS_SIGNAL.request primitive throughout the clause

Proposed Response   *Response Status* **C**

ACCEPT.

It is suggested that the editor be given an Eight-Ball for failing to catch such an obvious screw-up.

Cl **50**   *SC* **50.3.2.1**   *P* **377**   *L* **30**   *#* **57**

Stephen Haddock   Extreme Networks

Comment Type **T**   *Comment Status* **A**   *In D2.2*

It is not obvious from this clause or from T1-416 what value is transmitted in the fixed stuff. It probably is specified in T1-105, but it would make it much easier on the reader to add a statement here.

SuggestedRemedy

Add a sentence that fixed stuff is transmitted as 00000000 and not checked on recieve.

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **50**   *SC* **50.3.2.1**   *P* **378**   *L* **7**   *#* **56**

Stephen Haddock   Extreme Networks

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

There seem to be an excessive number of external references.ANSI T1.269-2000 is only referenced for this one octet. It would be a great convenience to the reader if there were at least an informative statement of the header format for the Trace message. Is there a reason we cannot just specify the format here and make it compatible with T1-269? Is there that much liklihood T1-269 will change?

SuggestedRemedy

Specify the header format. Include a sentence saying that it is specified in a manner compatible with T1-269.

Proposed Response   *Response Status* **C**

REJECT.

The current content of the clause is complete and accurate. Adding duplicate information that has been imported directly from the cross-references is likely to cause inaccuracies and inconsistencies, and therefore is not advisable. In addition, the suggested remedy does not actually eliminate either the reference or the need to use the reference as the normative text.

Cl **50**   *SC* **50.3.2.5**   *P* **380**   *L* **3940**   *#* **98**

Brown, Benjamin   AMCC

Comment Type **E**   *Comment Status* **A**   *In D2.2*

The values chosen for the setting of T & T' no longer fall in the middle of the parameter range in ANSI T1.416-1999. I think the allowed range specified on line 34 matches the range in ANSI T1.416-1999.

SuggestedRemedy

Remove this sentence from the note.

Proposed 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 **50**   *SC* **50.3.2.5**

Cl **50**   *SC* **50.3.5.3**   *P* **383**   *L* **1011**   **#** **100**

Brown, Benjamin   AMCC

Comment Type   **E**   *Comment Status*   **A**   *In D2.2*

using sublayer after WIS is unnecessary

SuggestedRemedy

Replace all instances of "WIS sublayer" with "WIS" throughout the clause

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

If "WIS sublayer" is unacceptable, then so is "PCS sublayer". Therefore, all instances of "WIS sublayer" and "PCS sublayer" should be replaced with "WIS" and "PCS" respectively.

Cl **50**   *SC* **50.3.5.3**   *P* **383**   *L* **3**   **#** **99**

Brown, Benjamin   AMCC

Comment Type   **E**   *Comment Status*   **A**   *In D2.2*

too much upper-case in subclause heading

SuggestedRemedy

Replace "Loss of Code-Group Delineation" with "Loss of code-group delineation"

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

"Loss of Code-Group Delineation" in this context refers to a specific item (LCD-P) and is not simply a descriptive title. As per the practice through the rest of the document, specific items (such as "Physical Medium Attachment sublayer") must be capitalized in section titles as well as in the text. Therefore the use of the capitals is correct.

However, it is noted that only those letters that also correspond to the acronyms are to be capitalized. Thus "Loss of Code-Group Delineation" should be changed to "Loss of Code-group Delineation". This is also consistent with the following text.

In addition, this change should be made in section 50.2.3.3 also, as the wrong capitalization is made there as well.

Cl **50**   *SC* **50.3.5.3**   *P* **383**   *L* **620**   **#** **101**

Brown, Benjamin   AMCC

Comment Type   **T**   *Comment Status*   **A**   *In D2.2*

Does the WIS_SIGNAL.indicate gate off WIS_SIGNAL.request directly or after it has been passed through the timer? If it is after the timer, it might mean that as soon as WIS_SIGNAL.indicate goes true, you could announce LCD-P.

SuggestedRemedy

On line 12, replace the last sentence in the first paragraph with:
"The 3 millisecond timer is not allowed to start timing the false condition of WIS_SIGNAL.request(PCS_R_STATUS) while WIS_SIGNAL.indicate is false, thus inhibiting the reporting of the LCD-P defect whenever the WIS is unable to supply valid received data to the PCS."

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **50**   *SC* **50.3.7**   *P* **384**   *L* **23-24**   **#** **10**

Stoltz, Mario   ChipIng.de, an Intel co

Comment Type   **E**   *Comment Status*   **A**   *In D2.2*

Two full stops "the WIS.."

SuggestedRemedy

Change to "the WIS."

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **50**   *SC* **50.3.7**   *P* **384**   *L* **38**   **#** **615**

Bottorff, Paul   Nortel Networks

Comment Type   **T**   *Comment Status*   **A**   *In D2.2*

The transmit and receive delay should be summed.

SuggestedRemedy

Remove table 50-5 and replace it with the single delay sum 14000BT.

Proposed 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   Page 75 of 144

RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *Cl* **50**   *SC* **50.3.7**

Cl **50** *SC* **50.3.8** *P* **384** *L* **47** *#* **616**

Bottorff, Paul Nortel Networks

Comment Type **T** *Comment Status* **R** *In D2.2*

The jitter pattern should include an A1/A2 sequence to force a DC offset. Two jitter patterns should be supported, one for the serial PMDs and one for the LW4 PMD. The LW4 PMD pattern must have an A1/A2 sequence at the frame time and should use the same pattern as the serial interface, but with each field multiplied by 4.

SuggestedRemedy

Add two jitter patterns one for serial PMDs and one for LW4 PMD.

Proposed Response *Response Status* **Z**

REJECT.

No longer applicable. Clause 53 has mysteriously vanished.

Cl **50** *SC* **50.3.9.1** *P* **385** *L* **27** *#* **102**

Brown, Benjamin AMCC

Comment Type **E** *Comment Status* **A** *In D2.2*

There are more than 8 dedicated management registers

SuggestedRemedy

Replace "eight" with "the following"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **50** *SC* **50.3.9.1** *P* **385-389** *L* *#* **103**

Brown, Benjamin AMCC

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

The subclauses used to describe the individual registers is redundant with that text in clause 45. Redundant text is prone to errors.

SuggestedRemedy

Remove subclauses 50.3.9.1.1 thru 50.3.9.1.11

Proposed Response *Response Status* **C**

REJECT.

The editor completely agrees with the sentiment of the commenter that text should not be unnecessarily duplicated, and is in favor of deleting the specified subclauses. However, all of the information presented in these portions of Clause 50 is not supplied in Clause 45. Therefore, it is preferable to transfer the register descriptions from Clause 50 to Clause 45 (or at least ensure that the information is not lost), rather than unilaterally deleting them.

In addition, this comment does not contribute to the technical completeness of the draft. The commenter is therefore requested to re-submit this comment, with a suggested remedy of transfer rather than deletion, in the next ballot cycle.

Cl **50** *SC* **50.3.9.1.10** *P* **389** *L* **29** *#* **42**

Figueira, Norival Nortel Networks

Comment Type **E** *Comment Status* **A** *In D2.2*

The WIS J1 TX register is defined in 45.2.2.11 instead of 45.2.2.12.

SuggestedRemedy

Include correct reference to the WIS J1 TX register subclause.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **50** *SC* **50.3.9.1.5** *P* **387** *L* **9** *#* **43**

Figueira, Norival Nortel Networks

Comment Type **E** *Comment Status* **A** *In D2.2*

The WIS Status 3 register is defined in 45.2.2.6 instead of 45.2.2.7.

SuggestedRemedy

Include correct reference to the WIS Status 3 register subclause.

Proposed 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 Page 76 of 144

RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn *Cl* **50** *SC* **50.3.9.1.5**

Cl **50**   *SC* **50.3.9.1.6**   *P* **388**   *L* **31**   **#** **38**

Figueira, Norival   Nortel Networks

Comment Type   **E**   *Comment Status*   **A**   *In D2.2*

The WIS J0 TX register is defined in 45.2.2.7 instead of 45.2.2.8.

SuggestedRemedy

Include correct reference to the WIS J0 TX register subclause.

Proposed Response   *Response Status*   **C**
ACCEPT.

Cl **50**   *SC* **50.3.9.1.7**   *P* **388**   *L* **42**   **#** **39**

Figueira, Norival   Nortel Networks

Comment Type   **E**   *Comment Status*   **A**   *In D2.2*

Where you read "WIS J0 TX" you should read "WIS J0 RX".The WIS J0 RX register is defined in 45.2.2.8 instead of 45.2.2.9.

SuggestedRemedy

Replace "TX" with "RX".Include correct reference to the WIS J0 RX register subclause.

Proposed Response   *Response Status*   **C**
ACCEPT.

Cl **50**   *SC* **50.3.9.1.8**   *P* **389**   *L* **3**   **#** **40**

Figueira, Norival   Nortel Networks

Comment Type   **E**   *Comment Status*   **A**   *In D2.2*

The WIS G1 register is defined in 45.2.2.9 instead of 45.2.2.10.

SuggestedRemedy

Include correct reference to the WIS G1 register subclause.

Proposed Response   *Response Status*   **C**
ACCEPT.

Cl **50**   *SC* **50.3.9.1.9**   *P* **389**   *L* **13**   **#** **41**

Figueira, Norival   Nortel Networks

Comment Type   **E**   *Comment Status*   **A**   *In D2.2*

The WIS M1 register is defined in 45.2.2.10 instead of 45.2.2.11.

SuggestedRemedy

Include correct reference to the WIS M1 register subclause.

Proposed Response   *Response Status*   **C**
ACCEPT.

Cl **50**   *SC* **50.4.1.2**   *P* **391**   *L* **13**   **#** **575**

Don Alderrou   nSerial

Comment Type   **T**   *Comment Status*   **A**   *In D2.2*

I could not find where the search variable was used (evaluated) in the state machines. It is assigned different values in Figure 50–12—Primary Synchronization state diagram, however it is not used in a transition condition.

SuggestedRemedy

Delete the search variable and the assignment statements in the state machine.

Proposed Response   *Response Status*   **C**
ACCEPT.

Cl **50**   *SC* **50.4.1.3**   *P* **391**   *L* **45**   **#** **576**

Don Alderrou   nSerial

Comment Type   **T**   *Comment Status*   **A**   *In D2.2*

The found_Presync function as defined will change value from WAIT to TRUE to FALSE and it will then stay FALSE as the octets of a proper WIS frame are received. Once the last octet of the first Presync_Pattern is received, it will change from WAIT to TRUE. When the next octet is received, it will no longer match the Preync_Pattern and the function will change from True to False. Once the last octet of the next Presync_Pattern is received, it should change from FALSE to TRUE, but it won't because all of the previous octets received is more than j+k and thus won't match the Presync_Pattern. This does not seem to be the intended function.

SuggestedRemedy

Change the first sentence of the definition to read: "For the last j+k sets of 8 bits (1 octet) input to the Synchronization process, this function indicates whether the Presync_Pattern pattern is matched."

Proposed Response   *Response Status*   **C**
ACCEPT.

In addition to the suggested remedy, the expression (j + k - 1) in the next sentence should be changed to (j + k), in order to match the change to the first sentence.

Cl **50**　　　*SC* **50.4.1.3**　　　*P* **392**　　　*L* **4**　　　**#** **577**
Don Alderrou　　　　　　　　　nSerial

Comment Type　**T**　　*Comment Status*　**A**　　　*In D2.2*

The found_Sync function as defined will change value from FALSE to TRUE to FALSE and it will then stay FALSE as the octets of a proper WIS frame are received. Once the last octet of the first Sync_Pattern is received, it will change from FALSE to TRUE. When the next octet is received, it will no longer match the Sync_Pattern and the function will change from True to False. Once the last octet of the next Sync_Pattern is received, it should change from FALSE to TRUE, but it won't because all of the previous octets received is more than 2f and thus won't match the Sync_Pattern. This does not seem to be the intended function.
If the first sentence is changed to read; "For the last 2f sets of 8 bits (1 octet) input to the Synchronization process, this function indicates whether the Sync_Pattern pattern is matched." it will cause this function value to oscillate between FALSE and TRUE as the octets of a proper WIS frame are received. This still does not seem to be the intended function because of how this function is evaluated in the Figure 50–13 state machine. If the state machine evaluates the function value when it is FALSE, it will incorrectly increment the bad_sync_cnt. The definition of the function and the state diagram need to have hysteresis and be synchronized to start counting at the same time.

SuggestedRemedy

Define the found_sync function as a state machine, add in hysteresis to correct/account for the changing input octets of a proper WIS frame, and synchronize the octet counts to the Figure 50-13 state machine. I think the IEEE state machine conventions would allow this function to be defined with the hysteresis and synchronization, however it would probably be too complicated.

Proposed Response　　　*Response Status*　**C**
ACCEPT.

The found_Sync function implements a continuously scanning pattern matcher on the input octet stream, scanning for every instance of the Sync_Pattern. Certainly this may result in many false matches, as there is nothing to prevent Sync_Pattern from occurring naturally in the payload. However, the state machine in Fig 50-13 filters the found_Sync matches with the proper value of the octet_cnt counter; thus ONLY those values of found_Sync that are generated at precisely 155,520 octet intervals (i.e., the A1/A2 framing pattern locations) will cause state transitions to increment bad_sync_cnt or good_sync_cnt, and the rest will be ignored.

The initial deficiency pointed out by the commenter (i.e., the found_Sync function will never become TRUE after >2f octets have been received) is valid and therefore the first sentence of the found_Sync definition should be revised to read: "For the last 2f sets of 8 bits (1 octet) input to the Synchronization process, this function indicates whether the Sync_Pattern pattern is matched."
The remainder of the commenter's concerns does not seem to be justified.

Cl **50**　　　*SC* **50.4.2**　　　*P* **393**　　　*L* **1**　　　**#** **581**
Don Alderrou　　　　　　　　　nSerial

Comment Type　**T**　　*Comment Status*　**A**　　　*In D2.2*

The transition from the SYNC state in Figure 50–12—Primary Synchronization state diagram, is not clear. The bad_sync_cnt counter will cause the state machine to transition out of the SYNC state at a count of n. There are no circumstances for which the "greater than" condition will ever be active.

SuggestedRemedy

Change the transition condition from the SYNC state to the HUNT state to be "bad_sync_cnt=n"

Proposed Response　　　*Response Status*　**C**
ACCEPT.

Cl **50**　　　*SC* **50.4.2**　　　*P* **393**　　　*L* **1**　　　**#** **580**
Don Alderrou　　　　　　　　　nSerial

Comment Type　**T**　　*Comment Status*　**A**　　　*In D2.2*

The transitions from the PRESYNC state in Figure 50–12—Primary Synchronization state diagram, are not clear. The good_sync_cnt and bad_sync_cnt counters will cause the state machine to transition out of the PRESYNC state at a count of m and 1 respectively. There are no circumstances for which the "greater than" condition will ever be active.

SuggestedRemedy

Change the transition condition from the PRESYNC state to the SYNC state to be "good_sync_cnt=m" and change the transition condition from the PRESYNC state to the HUNT state to be "bad_sync_cnt=1"

Proposed Response　　　*Response Status*　**C**
ACCEPT.

Classic case of editor attempting to be overly cute.

Cl **50**　　　*SC* **50.4.2**　　　*P* **394**　　　*L* **1**　　　**#** **579**
Don Alderrou　　　　　　　　　nSerial

Comment Type　**T**　　*Comment Status*　**A**　　　*In D2.2*

The octet_count can't be set to 0 and incremented at the same time in the states DELAY_1 and DELAY_2 in Figure 50-13.

SuggestedRemedy

Move the "octet_count <= 0" output from the DELAY_1 state to the WAIT state and from the DELAY_2 state to the FOUND and MISSED states.

Proposed Response　　　*Response Status*　**C**
ACCEPT.

In addition to the suggested remedy, the second sentence of the description of the octet_cnt counter should also be revised to read: "This counter is forced to zero in specific states of the Interval Pattern Search state machine, but for all other states it increments by 1 for each octet received."

Cl **50**   *SC* **50.4.2**   *P* **394**   *L* **1**   # **578**

Don Alderrou   nSerial

Comment Type   **T**   *Comment Status*   **A**   *In D2.2*

The transitions from states DELAY_1 and DELAY_2 in Figure 50-13—Interval Pattern Search state diagram, are not clear. The condition "in_HUNT=TRUE" in the transition to the WAIT state and the condition "octet_cnt=(155520+f-k) * found_SyncúLSE" in the transition to the MISSED state could be active at the same time.

SuggestedRemedy

AND the condition "in_HUNTúLSE" to the other two transitions from the DELAY_1 and DELAY_2 states.

Proposed Response   *Response Status*   **C**
ACCEPT.

Cl **50**   *SC* **Table 50-1**   *P* **377**   *L* **33**   # **58**

Stephen Haddock   Extreme Networks

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

I understand the desire to specify by reference to T1-416, however it tends to make this clause very obscure. In particular the majority of the information provided in this clause is what is not supported, and you have to do a "diff" of this and T1-416 to find out what is supported. I suggest that Tables 50-1, 50-2, and 50-3 should list all the overhead octets, referencing T1-416 for the definition/description of those that are supported.

SuggestedRemedy

Add rows to Table 50-1 for B3 and G1, with the Usage column stating "supported" and the Coding column stating "see T1-416".Add rows to Table 50-2 for B2 and M1, with the Usage column stating "supported" and the Coding column stating "see T1-416".Add rows to Table 50-3 for B1 and J0, with the Usage column stating "supported" and the Coding column stating "see T1-416". Also add rows for A1 and A2 with the Usage column stating "supported", but in this case I think it would be OK to put the actual octet values in the Coding column.

Proposed Response   *Response Status*   **C**
REJECT.

The editor is sympathetic to the intent behind the comment, but there is also the risk of causing problems by duplicating information. In addition, implementation of the suggested remedy does not enhance the technical completeness of the draft.

Also, there is a minor issue with the suggested remedy in that Tables 50-1, 50-2 and 50-3 specify instances where T1.416 is superseded (i.e., exceptions to T1.416), and hence it is somewhat confusing to place entries in these tables that exactly duplicate those in T1.416. Implementation of any remedy also requires that the table header and text descriptions be modified appropriately.

Cl **50A**   *SC* **50A**   *P* **399**   *L* **35**   # **524**

Law, David J   3Com

Comment Type   **E**   *Comment Status*   **A**   *In D2.2*

Suggest the text '.. in the MIB definition in Clause xx.' should read '... in the Layer Management definitions in Clause 30.'.

SuggestedRemedy

See comment.

Proposed Response   *Response Status*   **C**
ACCEPT.

The editors' note should be removed as well, as implementation of the suggested remedy satisfies the request in the note.

Cl **51**   *SC* **4**   *P* **408**   *L* **27**   # **358**

Tim Warland   Nortel Networks

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

Figure 51-2 Infers that the REF_CLk is used to clock data out of the receive SIPO

SuggestedRemedy

The RX_CRU should have a signal input from R+ and R-

Proposed Response   *Response Status*   **C**
PROPOSED ACCEPT. Change made in draft 2.2

Cl **51**   *SC* **51.1**   *P* **404**   *L* **38**   # **288**

Christensen, Benny   Intel / GIGA

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

Fluent wording, logical order and refinements.

SuggestedRemedy

Exchange order of sentences and adding word to clarify:
'The purpose of the serial PMA is to attach the PMD of choice to its client, i.e. the PCS or WIS sublayer through the 10 Gigabit sixteen bit interface (XSBI). The XSBI as defined within this clause, may also be used as the interface for the LW4-PMA as described in clause 53.'

Proposed Response   *Response Status*   **C**
PROPOSED ACCEPT IN PRINCIPLE.   Change made in 2.3
same as in rev 2.2 except removed reference to LW4 PMA

Cl **51**   *SC* **51.1.1**   *P* **404**   *L* **43**   **#** **287**
Christensen, Benny   Intel / GIGA

Comment Type   **E**   *Comment Status*   **A**
   notation for 'PMA type serial'

SuggestedRemedy
   change to: 'serial PMA' the word 'sublayer' may be added after the above mentioned words in
   order to refine what functions are in the PMA sublayer/block

Proposed Response   *Response Status*   **C**
   PROPOSED ACCEPT. Change made in draft 2.2

Cl **51**   *SC* **51.1.1**   *P* **404**   *L* **44**   **#** **290**
Christensen, Benny   Intel / GIGA

Comment Type   **T**   *Comment Status*   **A**
   add words: ....serial input and output 'of the PMA' are left ....

SuggestedRemedy
   add words: of the PMA

Proposed Response   *Response Status*   **C**
   PROPOSED ACCEPT. Change made in draft 2.2

Cl **51**   *SC* **51.1.1**   *P* **404**   *L* **50**   **#** **291**
Christensen, Benny   Intel / GIGA

Comment Type   **E**   *Comment Status*   **A**
   principle meaning principal?

SuggestedRemedy
   choose appropriate word

Proposed Response   *Response Status*   **C**
   PROPOSED ACCEPT. Change made in draft 2.2
   Proper word to use is "principal".

Cl **51**   *SC* **51.2.2.2**   *P* **406**   *L* **11**   **#** **328**
Lysdal, Henning   Giga

Comment Type   **T**   *Comment Status*   **A**
   There some leftover wording from 1000Base-X. The word aligned has to do with code-group
   aligment of 8b10b code-groups. This does not make sense with 64b66b frames on a 16-bit
   interface.

SuggestedRemedy
   Remove the word aligned from this subclause

Proposed Response   *Response Status*   **C**
   PROPOSED ACCEPT IN PRINCIPLE.   Change made in draft 2.3
   Also removed the word "set" in addition to the word "aligned".

Cl **51**   *SC* **51.2.3**   *P* **406**   *L* **31**   **#** **666**
jonathan thatcher   World Wide Packets

Comment Type   **E**   *Comment Status*   **A**
   Subclause 51.2.3.2 Should be "When Generated" inserted at line 31.
   The existing Subclause 51.2.3.2 should be 51.2.3.3.

SuggestedRemedy
   See comment

Proposed Response   *Response Status*   **C**
   PROPOSED ACCEPT. Change made in draft 2.2

Cl **51**   *SC* **51.2.3.1**   *P* **406**   *L* **28**   **#** **325**
Lysdal, Henning   Giga

Comment Type   **T**   *Comment Status*   **A**
   The wording in the draft requests the PMA to detect if data is valid. To do this there has to be
   protocol logic in the PMA, contradictory to the intentions of the committee and to the description
   of PMA_LOS<P> in clause 51.4.1.

SuggestedRemedy
   Replace the description of the OK value with:A value of OK denotes that the value of
   PMD_Signal.indicate is OK and optionally also that the value of Sync_Err<P> is low.

Proposed Response   *Response Status*   **C**
   PROPOSED ACCEPT. Change made in draft 2.2

Cl **51**   *SC* **51.3.1**   *P* **407**   *L* **1**   **#** **324**
Lysdal, Henning   Giga

Comment Type   **E**   *Comment Status*   **A**
   The subclause on Data Delay has to do with the receiver only, not the PMA in general

SuggestedRemedy
   Move 51.3.1 to 51.3.3.1

Proposed Response   *Response Status*   **C**
   PROPOSED ACCEPT IN PRINCIPLE. Change made in draft 2.2
   Section on "Data Delay" moved to new section 51.2.1 under the "PMA receive
   function".

Cl **51**　　*SC* **51.4**　　　　　*P* **404**　　*L* **32**　　# **293**
Christensen, Benny　　　　　　　Intel / GIGA

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

The repeatable explicit frequency stating (3*2 times) of the PMA_TXCLK for LAN and WAN modes within this paragraph makes it hard to read.

SuggestedRemedy

A simple and clearer method could be to give a common reference (in the start of that paragraph) to the PMDs nominal signaling Baud rate of some general table. Then in a following sentence: use an explicit writing stating that all data signals/data-groups and clock signals (within the XSBI) are operating at 1/16 of the nominal baud rate for the PMD (of choice).

Proposed Response　　　　　*Response Status*　**C**

PROPOSED ACCEPT IN PRINCIPLE. Change included in draft 2.2
A new table, Table 51-1, has been added to help in the readabilty of the relevant section. Explicit numbers in paragraphs has been removed. Note the comment reference is to page 407 not 404 of draft 2.1

Cl **51**　　*SC* **51.4**　　　　　*P* **407**　　*L* **26**　　# **331**
Lysdal, Henning　　　　　　　Giga

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

It is unclear that XSBI is an instatiation of the PMA service interface. The link between the two is never established clearly in the document.

SuggestedRemedy

Reword the first sentence of the subclause to read:
A physical instantiation of the sixteen-bit PMA service interface (XSBI) is defined ....

Proposed Response　　　　　*Response Status*　**C**
PROPOSED ACCEPT. Change made in draft 2.2

Cl **51**　　*SC* **51.4**　　　　　*P* **407**　　*L* **34**　　# **667**
jonathan thatcher　　　　　　　World Wide Packets

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

All references to PMA_TX_CLK are ambiguous. For example, it is not clear that PMA_TX_CLK<P,N> really means PMA_TX_CLK<P> minus PMA_TX_CLK<N>. Ditto PMA_TXCLK_SRC. It should be clear that you can't be on "the rising edge of" both <P> and <N> at the same time!

This has caused errors in diagrams such as Figure 51-5 and 51-6, which should both be referring to the differential clock.

In cases where <P> ir <N> are not needed (e.g. PMD_LOS<P>), remove them.

Note: this comment was tagged editorial since it is obvious what was/is intended. This should be fixed in Draft 2.2.

SuggestedRemedy

Define PMA_TX_CLK to be the differential clock, where PMA_TX_CLK is PMA_TX_CLK<P> minus PMA_TX_CLK<N>. Use PMA_TX_CLK everywhere (with the single possible exception of Figure 51-2)! Make sure the both the description (clause 51.4) and the definitions (51.4.1) are correct.

Change all instances of PMA_TX_CLK<P,N> to PMA_TX_CLK. Make sure that it is clear that Figure 51-5 uses PMA_TX_CLK and Fibure 51-6 uses NOT PMA_TX_CLK. Ditto figures 51-7 and 51-8.

Do the same for PMA_TXCLK_SRC.

Remove all unnecessary instances of <P> and <N>. The positive or negative logic aspect of these signals should be done in the description.

Proposed Response　　　　　*Response Status*　**C**

PROPOSED ACCEPT IN PRINCIPLE. Change made in draft 2.2
A new table, 51-1, is added to define that signals without explicit <P>, <N> references imply that the signal is <P-N>. The figures mentioned in the comments have explicit references of <P-N> or <N-P> as appropriate.

Cl **51**　　*SC* **51.4, fig. 51-2**　　　*P* **407**　　*L* **32**　　# **292**
Christensen, Benny　　　　　　　Intel / GIGA

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

sentence with XSBI refers to figure, but the XSBI label is not shown in the figure.XSBI is the physical instantiation (i.e. synonymous) to the 'PMA service interface'

SuggestedRemedy

Add 'XSBI (when implemented)' text to the figure at the PMA service interface.

Proposed Response　　　　　*Response Status*　**C**

PROPOSED ACCEPT IN PRINCIPLE. Change made in draft 2.2
Figure modified to include "XSBI Interface" as clarification.

Cl **51**   *SC* **51.4.1**   *P* **409**   *L* **18**   **#** **329**

Lysdal, Henning   Giga

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

There is some leftover wording from an earlier draft where there were an additional optional mode for PMA_TX_CLK

SuggestedRemedy

Replace the description of PMA_TX_CLK with the following:
The transmit data-group clock. This data-group clock is used to latch data into the PMA for transmission. PMA_TX_CLK<P,N> must be derived from PMA_TXCLK_SRC<P,N>. PMA_TX_CLK<P,N> is 622.08MHz (10GBASE-W family) or 644.53125MHz (10GBASE-R family) and the rising edge is used to latch data into the PMA for transmission. Refer to 51.6.2.2 for details.

Proposed Response   *Response Status* **C**

PROPOSED ACCEPT IN PRINCIPLE. Change made in draft 2.2
The "optional" reference is removed. Additional edits were made to improve readability using new Table 51-1. See response to comment #293.

Cl **51**   *SC* **51.4.1**   *P* **409**   *L* **23**   **#** **330**

Lysdal, Henning   Giga

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

The description of how PMA_TXCLK_SRC should be used by the PMA client is incomplete.

SuggestedRemedy

Add the following at the end of the paragraph:
and latch tx_data-group<15:0>.
This will bring the paragraph in accordance with 51.6.2.3 paragraph 2 (and my interpretation of the committees intentions)

Proposed Response   *Response Status* **C**

PROPOSED REJECT. Description is clear. PMA_TXCLK_SRC shall be used to generate PMA_TX_CLK which in turn is its description is used to latch the tx_data-group.

Cl **51**   *SC* **51.4.2**   *P* **409**   *L* **53**   **#** **668**

jonathan thatcher   World Wide Packets

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

Assume this is caught elsewhere. Even so, Editor's Note on page 409 must be resolved: Logic type....

SuggestedRemedy

See note.

Proposed Response   *Response Status* **C**

PROPOSED ACCEPT IN PRINCIPLE. Change made in 2.3
Sync_Err and PMA_LOS has been defined to be LVCMOS compliant I/Os
with reference to proper industry document to be added later.

Cl **51**   *SC* **51.5.1**   *P* **410**   *L* **20**   **#** **669**

jonathan thatcher   World Wide Packets

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

Symbols are confusing and not consistent with the typical style of the document. Some values are missing from table.

SuggestedRemedy

|VOD| is not defined anywhere. Is it from ANSI/TIA-644 LVDS? If so, this should probably be stated explicity. Should this spec be Vdiff_pp? Probably.

Note that |VOD| is used in lines 24 and 32 for different things. One of these is clearly wrong.

Min value is needed for VID

Is it not the case that these "DC" values need to measured under AC conditions? In short, that not just the differential load, but also the capacitence or Z values need to be specified along with the data pattern? This should also be specified in 51.5.4

What are the conditions for measuring the tr, tf?

Proposed Response   *Response Status* **C**

PROPOSED ACCEPT IN PRINCIPLE. Change made in draft 2.2
Correction to one of the |VOD| is made. VIDTH has been removed and merged with VID, input differential to reflect 100mV as the minimum differential input signal. Regarding test conditions and such, at the beginning of 51.5.1 DC characteristics, it is made clear that signal specifications are based on the ANSI/TIA document. Will bring up at next meeting, the need to include more explicit statements to the effect that "unless otherwise noted, test conditions are the same as those in the ANSI/TIA-644 document".

Cl **51**   *SC* **51.5.2**   *P* **411**   *L* **4**   **#** **670**

jonathan thatcher   World Wide Packets

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

Also 51.5.3 line 23.

Tr; Tf are being defined as 20% to 80%. But, it is not clear what the 100% is. Is it the peak value? Is 0% ground or the minimum (this is a trick question, there is no ground for a differential signal).

Similarly, the clock is defined at 50%. But, it is not clear what it is 50% of: the difference between the min and max? the average power? This needs to be clear throughout (e.g. figure 51-7)

SuggestedRemedy

Clarify and be specific.

Proposed Response   *Response Status* **C**

PROPOSED ACCEPT IN PRINCIPLE.
No changes were made to the figure. New table 51-1 helps to define the meaning of the DATA and CLK as the differential signal <P-N>. See response to comment # 293.

Cl **51**　　*SC* **51.5.2.2**　　　　*P* **347**　　*L* **22-25**　　# **45**

Hernandez, Julio C.　　　　　　　　Texas Instruments

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

Table 51-1, and text in clause 51.4.1, state that both the XSBI transmit and receive data are latched on the "rising" edge of their respective clocks (PMA_TX_CLK<P> and PMA_RX_CLK<P>). Figures 51-5 and 51-7, which show the timing of the data capture on both the transmit and receive interfaces, also show a data valid window centered on the "rising" edge of the clocks. However, figures 51-6, table 51-3, figure 51-7 and table 51-7 all show the signals being launched with the data valid window centered on the "falling" edge of the clocks and the data invalid period specified around the rising edge. This appears inconsistent.Some sort of textual or graphical clarification as to the actual intent here would be warranted.

SuggestedRemedy

Ethier:
1. a. In figure 51-6, change "PMA_TX_CLK(P)" to "PMA_TX_CLK(N)"
　 b. Add "(N)" to "PMA_TX_CLK" in table 51-4 for tSetup and tHold
　 c. In figure 51-7, change "PMA_RX_CLK(P)" to "PMA_RX_CLK(N)"
　 d. Add "(N)" to "PMA_TR_CLK" in table 51-7 for Tcq_min and Tcq_max
　 e. Add "(P)" to "PMA_TX_CLK" in table 51-3 for Tcq_min and Tcq_max
　 f. Add "(P)" to "PMA_RX_CLK" in table 51-8 for tSetup and tHold
Or:
2. Add some informative/explanatory text as to the intent for the inversion of the signals between the PMA and the PMA Client somewhere in 51.6.2.x

Proposed Response　　　　*Response Status*　**C**

PROPOSED ACCEPT IN PRINCIPLE.　Change made to draft 2.3
The figures have been modified to show inversion using <P-N> and <N-P> as appropriate. The figures are consistent now in their usage.
Also included the following description to 51.6 and 51.7

"NOTE: The following approach is taken for positioning clocks relative to the data. For both the PMA and PMA client drivers, the clock edges are aligned to the data edges, to allow simplification of macro design. For both the PMA and PMA client receivers, clock edges are centered on the data bit, to allowing simplification of macro design. The implementation to meet these requirements is achieved on the system board. This can be done with either a delay of the clocks or by exchanging the differential outputs of the clocks from input to output. The latter example is used in the following transmit/receive timing diagrams."

Cl **51**　　*SC* **51.6.1**　　　　*P* **411**　　*L* **45**　　# **295**

Christensen, Benny　　　　　　　　Intel / GIGA

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

This subclause is/does not an specify electrical characteristics. It is reveant to move it to somewhere inthe PMA function description (51.3)

SuggestedRemedy

Move or delete subclause.

Proposed Response　　　　*Response Status*　**C**

PROPOSED ACCEPT IN PRINCIPLE.　Change applied in draft 2.2
Moved modified version to section 51.4.1 under "tx_data-group" description.

Cl **51**　　*SC* **51.6.2**　　　　*P* **412**　　*L* **33**　　# **46**

Hernandez, Julio C.　　　　　　　　Texas Instruments

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

Table 51-3:
　Incorrect units (1/MHz).
Table 51-4 and 51-7:
　Value tPERIOD inconsistent with latest change　in table 51-3, as well as their corresponding units.

SuggestedRemedy

Table 51-3:
　Change "1/MHz" to "ns"
Table 51-4 and 51-7:
　Change "1/644.5321258" to "1.55151"
　Change "1/622.08" to "1.60751"
　Change "1/MHz" to "ns"

Proposed Response　　　　*Response Status*　**C**

PROPOSED ACCEPT.　Change made in draft 2.2

Cl **51**　　*SC* **51.6.2.1**　　　　*P* **412**　　*L* **30**　　# **671**

jonathan thatcher　　　　　　　　World Wide Packets

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

See Table 51-3. Ditto Table 51-4; 51-7...
Recommend not using both tPERIOD_R and tPERIOUS_W. It would be better to have only one parameter: tPERIOD (as in Fibure 51-6).
Recommend similar change to Table 51-5.

SuggestedRemedy

Recommend using style of table 52-11

Proposed Response　　　　*Response Status*　**C**

PROPOSED ACCEPT IN PRINCIPLE.　Change made in draft 2.2
Have revised table to merge the two entries into two cases for one parameter, t-PERIOD. The style is now similar style to 52-11.

Cl **51**　　*SC* **51.6.2.3**　　　　*P* **413**　　*L* **52**　　# **298**

Christensen, Benny　　　　　　　　Intel / GIGA

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

wording of sentence　regarding:　FIFOs　mentioned twice

SuggestedRemedy

replace simplify text:
....compensated by FIFOs either in the PMA client or in the PMA /+(itself). .....

Proposed Response　　　　*Response Status*　**C**

PROPOSED ACCEPT.　Change applied in draft 2.2

Cl **51**   *SC* **51.6.2.3**   *P* **414**   *L* **26**   # **332**

Lysdal, Henning   Giga

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

Editors note:
The editors note indicate information from only a couple of sources. The information made available to the committee is only from SerDes sources. There is no data to support that PCS/WIS devices can meet the 2ns spec.

SuggestedRemedy

Change the editors note to reflect that no data exists on the PCS/WIS device

Proposed Response   *Response Status*   **C**

PROPOSED ACCEPT IN PRINCIPLE. Change made to state that 2ns value is only from limited inputs. Efforts (continued efforts) will be made to get more inputs from the system/framer side in addition to SerDes vendors.

Cl **51**   *SC* **51.7.1**   *P* **414**   *L* **40**   # **296**

Christensen, Benny   Intel / GIGA

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

his subclause is/does not an specify electrical characteristics. It is reveant to move it to somewhere inthe PMA function description (51.3)

SuggestedRemedy

delete or move

Proposed Response   *Response Status*   **C**

PROPOSED ACCEPT IN PRINCIPLE. Change applied to draft 2.2
Moved modified version to "rx_data-group" description in 51.4.1

Cl **51**   *SC* **51.7.2**   *P* **415**   *L* **1**   # **672**

jonathan thatcher   World Wide Packets

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

Make it clear (using specifications, etc), that clock and data slivers are not to be tolerated.

SuggestedRemedy

see comment

Proposed Response   *Response Status*   **C**

PROPOSED REJECT. Present wording of having to preserve the minimum duty cycle of the clock already avoids "slivers". It is not necessary to avoid slivers in data.

Cl **51**   *SC* **51.7.2.2,51.6.2.1**   *P* **412**   *L* **4**   # **300**

Christensen, Benny   Intel / GIGA

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

The PMA client specification in clause 51.7.2.2 and 51.6.2.1 seems irrevant to the PMA sublayer specification.I don't understand how clause 51 PMA sublayer specifications can specify properties of the WIS / 64B/66B PCS electrical timing specifications belonging to another sublayer.Such timing specifications should be dealt with in the respective and relevant PMA client clauses.The timing between PMA_RX_CLK and rx_data_group at the PMA client does not only depend on the PMA RX output timing, but also on the physical layout of the PCB and the board skew between data and clock, which is very much dependent on the skills of the PCB layout'er.

SuggestedRemedy

delete sub clauses

Proposed Response   *Response Status*   **C**

PROPOSED REJECT. Prior discussions in past meetings have shown this to be very helpful/needed and for systems designer to know the timing budgets. It does not infringe on any specs nor create inconsistencies with other clauses. This timing is

Cl **51**   *SC* **51.8**   *P* **416**   *L* **41**   # **333**

Lysdal, Henning   Giga

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

The paragraph state that loopback IS provided, as specified in this clause.

SuggestedRemedy

replace the word ""is"" with ""may be"" and remove the editors note

Proposed Response   *Response Status*   **C**

PROPOSED ACCEPT. Change made in draft 2.2

Cl **51** *SC* **51.8** *P* **416** *L* **41** *#* **673**

jonathan thatcher World Wide Packets

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

There is no reference to the MDIO (when available) for signaling this function.
Also, it needs to be clear what happens to the normal output when PMA is placed in loopback mode. It is clear that the Tx is shunted to the Rx. It is not clear what happens to the Tx output to the PMD.

SuggestedRemedy

Fix.

Proposed Response *Response Status* **C**

PROPOSED ACCEPT IN PRINCIPLE. Change made in draft 2.3
Wording added
"A device is placed in Loopback mode when the loopback bit in the PMA/PMD control register 7 is set. A device is removed from Loopback mode when this bit is cleared.
When Loopback mode is selected, transmission requests passed to the transmitter are shunted directly to the receiver, overriding any signal detected by the receiver on its attached link. During Loopback, the seiral output of the PMA to the PMD shall be set to all zeros. "

Cl **51** *SC* **6.2** *P* **411** *L* **49** *#* **359**

Tim Warland Nortel Networks

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

XSBI transmit interface timing: The title is the only mention of XSBI. No mention of XSBI in the underlying text. May cause confusion

SuggestedRemedy

Line 51 second sentence add:
 The _XSBI_ timing specifications at the PMA client....
Page 412 Line 6 add:
Figure 51-5 and table 51-3 details the XSBI timing requirements....
Page 413 line 3 add:
Figure 51-6 and table 51-4 details the XSBI timing requirements....
Page 413 line 42 add:
 ...specifies the XSBI interface transmit...

Proposed Response *Response Status* **C**

PROPOSED ACCEPT. Changes made in draft 2.2

Cl **51** *SC* **6.2.3** *P* **414** *L* **16** *#* **361**

Tim Warland Nortel Networks

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

Abbreviation TD not defined in abbreviations list

SuggestedRemedy

add TD to

Proposed Response *Response Status* **C**

PROPOSED REJECT. Meaning is clear.

Cl **51** *SC* **6.2.3** *P* **414** *L* **19** *#* **362**

Tim Warland Nortel Networks

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

Abbreviation CJ not defined in abbreviations list

SuggestedRemedy

add CJ to abbreviations list

Proposed Response *Response Status* **C**

PROPOSED REJECT. Meaning is clear.

Cl **51** *SC* **7.2** *P* **414** *L* **46** *#* **360**

Tim Warland Nortel Networks

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

XSBI receive interface timing: The title is the only mention of XSBI. No mention of XSBI in the underlying text. May cause confusion

SuggestedRemedy

Line 48 second sentence add:
The _XSBI_ timing specifications at the PMA output....
Page 415 Line 9 add:
 Figure 51-7 and table 51-37details the XSBI timing requirements....
Page 416 line 3 add:
Figure 51-8 and table 51-8 details the XSBI timing requirements....

Proposed Response *Response Status* **C**

PROPOSED ACCEPT. Change made in draft 2.2

Cl **51** *SC* **Figure 51-2** *P* **408** *L* **7** *#* **326**

Lysdal, Henning Giga

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

The figures shows Sync_Err<P> as an optional signal on the PMA service interface. It does not clearly show that also the Sync_Err<P> input to the SIL box is optional (in accordance with clause 51.4, page 407, line 50).

SuggestedRemedy

Make both the Sync_Err<P> line on the interface and into the SIL box dotted

Proposed Response *Response Status* **C**

PROPOSED ACCEPT. Change made in draft 2.2

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 85 of 144
Cl **51** *SC* **Figure 51-2**

Cl **51**   *SC* **Table 51-3**   *P*   *L*   # **14**

Stoltz, Mario   ChipIng.de, an Intel co

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

Two occurrences of "with respec to"

SuggestedRemedy

Change to "with respect to".

Proposed Response   *Response Status*   **C**

PROPOSED ACCEPT.   Change made in draft 2.2

Cl **51**   *SC* **table 51-3**   *P* **412**   *L* **35-38**   # **297**

Christensen, Benny   Intel / GIGA

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

the word 'minimum' is (mentally) conflicting with a max. specification

SuggestedRemedy

delete the word 'minimum' (line35)
delete the word 'maximum' (line 38)

Proposed Response   *Response Status*   **C**

PROPOSED ACCEPT IN PRINCIPLE.   Change applied in draft 2.3
Changed labels in the following manner:
1) Tcq_min to Tcq_pre
2) Tcq_max to Tcq_post
3) deleted words of "Minimum" and "Maximum" from line 35 & 38 (rev 2.1)
4) change "with respect to" to "before" on line 35 (rev 2.1)
5) change "with respect to" to "after" on line 35 (rev 2.1)

Cl **51**   *SC* **table 51-3, table 51-4, a**   *P*   *L*   # **550**

Joel Goergen   Force10 Networks

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

These tables (51-3, 51-4, 51-7) reference a clock frequency of 644.5321258Mhz

SuggestedRemedy

The Clock Frequency should be 10.3125Ghz/16 = 644.53125Mhz

Proposed Response   *Response Status*   **C**

PROPOSED ACCEPT. Change made in draft 2.2

Cl **51**   *SC* **Table 51-4**   *P*   *L*   # **15**

Stoltz, Mario   ChipIng.de, an Intel co

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

Some ugly line breaks in here.

SuggestedRemedy

Please reformat.

Proposed Response   *Response Status*   **C**

PROPOSED ACCEPT. Change made in draft 2.2

Cl **51**   *SC* **Table 51-7**   *P*   *L*   # **16**

Stoltz, Mario   ChipIng.de, an Intel co

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

Two occurrences of "with respec to"

SuggestedRemedy

Change to "with respect to".

Proposed Response   *Response Status*   **C**

PROPOSED ACCEPT. Change made in draft 2.2

Cl **51**   *SC* **table 51-7**   *P* **415**   *L* **39-42**   # **299**

Christensen, Benny   Intel / GIGA

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

the word 'minimum' is (mentally) conflicting with a max. specification'invaRid' change to 'invalid'

SuggestedRemedy

delete word 'minimum'
delete word 'maximum'
'invaRid' change to 'invalid'

Proposed Response   *Response Status*   **C**

PROPOSED ACCEPT IN PRINCIPLE.   Change made in draft 2.3
Similar changes as made to comment 297. Also changed "PMA_TX_CLK" to "PMA_RX_CLK"
(line 42, rev 2.2)

Cl **51**   *SC* **table 52-1**   *P* **410**   *L* **32**   # **294**
Christensen, Benny   Intel / GIGA

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

|VOD| seems to be |'greak Delta' VOD| in symbolalso 'OD' in subscript of parameter definition|
'Delta' OVS| symbols missing || (absolute signs)'gpd' subscript in parameter definition

SuggestedRemedy

|VOD| seems to be |'greak Delta' VOD| in symbolalso 'OD' in subscript of parameter definition|
'Delta' VOS| symbols missing || (absolute signs)'gpd' subscript in parameter definition

Proposed Response   *Response Status* **C**

PROPOSED ACCEPT IN PRINCIPLE. Change made in draft 2.3
1) Change |Vod| in line 32 (rev 2.1) to |'delta' Vod| using Greek "delta"
2) Change 'delta'Vos in line 34 (rev 2.1) to |'delta'Vod|
3) Change Vgdp in line 36,38,40 (rev 2.1) to |Vgdp|

Cl **51**   *SC* **various**   *P* **405**   *L* **43**   # **357**
Tim Warland   Nortel Networks

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

Refers to LAN clock rate of 644.53125MHz+or-100ppm where 100ppm is equal to 64.4 KHz. In
this case, too many digits of precision are supplied.

SuggestedRemedy

Suggest global change to 644.53MHz +or-100ppm .

Proposed Response   *Response Status* **C**

PROPOSED REJECT.

Cl **52**   *SC* **5.1**   *P* **431**   *L* **17**   # **365**
Juergen Rahn   Lucent Technologies

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

The 1300 nm receiver sensitivity is defined too stringent to be possible with normal low cost PIN
receivers. For interface operations the sensitivity has to be defined as worst case end of live
definition (including also measurement tolerances and operation power variation effects,
distortions and so on). The stressed receiver sensitivity based on OMA (what means an ideal
extinction sensitivity) in this interface is calculated on the base of a raw receive sensitivity of a
power of less than -16dBm. This value is in the 1300nm region for a PIN receiver, a value that
can be achieved with limited yield in a lab environment and not really siuted for mass production
end of life specification.The 10 GBE interface should include EOL aging degradation, operation
power variation, measurement accuracy, margins also.

SuggestedRemedy

Lower the basic sensitivity by an operation margin of at least 2 dB.

Proposed Response   *Response Status* **C**

REJECT.

Please resubmit as necessary with appropriate proposal for transmitter.

The receive sensitivity does not include Tx distortions, cable distortions and so on. It is
measured with a perfect square wave with the correct OMA.

Cl **52**   *SC* **5.2**   *P* **431**   *L* **18**   # **368**
Juergen Rahn   Lucent Technologies

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

For checking if a receiver gets a proper input signal in optical communication normally the
receiver input power is checked. This is no possible test anymore with the OMA specification as
contained in Draft 2.1.Under the given OMA specification the receiver power for a compliant
input signal together with a path loss as defined for the 1310nm interface the following receiver
power levels are possible:(Path attenuation between 0dB and 7,04 dB exclusive penalties)Rec.
power max: 1,0 dBm and a rec. power min of -6,22dBm can be measured for a maximum power
and 3 dB ex transmitter andRec. power max -6,22 dBm rec. power min. -13,26dBm for a lowest
power transmitter following OMA spec, if doing the simple average power calculations.This
implies that with a simple power measurement it cannot be checked that receiver and path are in
range.Alternative possibilities:
either the OMA needs to be measured at the receiver side, which would require a very
sophisticated measurement equipment (not low cost) orfirst OMA and power has to be
determined at transmitter side and than after calculating the required minimum receiver power
this has to be verified at the receiver.These are not simple nor low cost as required by the nature
of this interface.For the 1550 nm (40km) interface this issue is also present however, the
overlap where it can be concluded that the path is clearly in range is larger.

SuggestedRemedy

Stick to the traditional specification method with and max and min average power.

Proposed Response   *Response Status* **C**

REJECT. Brought to committee for vote and was rejected.

Cl **52**	*SC* **52**	*P* **433**	*L* **5**	*#* **271**

Christensen, Benny   Intel / GIGA

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

Some optical measurement / specifications refered to in 52.8 (like the OMA, RIN and SMSR) requires specific / no patterns, which may only be achievable at a component level characterisation (unless these test patterns are generated in the PCS and bypasses the 64b/66b coder / WIS scrambler). This is due to the drop-out of TP1 (electrical interface in front of the E/O converter)This also imply that some of the measurements may not be measurable on the final product (PHY PMD)52.8 may suit FC, GE and XAUI, but still some unresolved definitions and availability of test signals need to be consistent regarding 10GE PMD optical characterisation.

SuggestedRemedy

A note about component level pre-characterisation may be used where appropriate in order guarantee the proper specifications of the 10GE PMD and that the component is assumed to behave well.

Proposed Response   *Response Status* **C**

REJECT.   The PCS will generate test patterns where necessary.

Cl **52**	*SC* **52.1**	*P* **420**	*L* **14**	*#* **674**

jonathan thatcher   World Wide Packets

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

Recommend that the Referenced WIS column be placed next to the description for easier reading.

SuggestedRemedy

see comment

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **52**	*SC* **52.1**	*P* **420**	*L* **3**	*#* **256**

Christensen, Benny   Intel / GIGA

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

Other clauses have a figure with the OSI layer model and the associated 10GE layers and sublayers, emphasising the relevant layer block (PMD) and its named interfaces (MDI).

SuggestedRemedy

Insert figure and references to it from text.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.   See #642

Cl **52**	*SC* **52.1**	*P* **420**	*L* **9**	*#* **642**

William G. Lane   CSU, Chico

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

A suggestion in response to the editor's note on how to add more information to this subclause.

SuggestedRemedy

Replace the contents of 52.1 with the following:

This clause specifies the PMDs and baseband medium, including both single and multimode optical fiber, for the following 10GBASE serial PHYs:

```
10GBASE-SR   850 nm Serial LAN PHY
10GBASE-LR   1310 nm Serial LAN PHY
10GBASE-ER   1550 nm Serial LAN PHY
10GBASE-SW   850 nm Serial WAN PHY
10GBASE-LW   1310 nm Serial WAN PHY
10GBASE-EW   1550 nm Serial WAN PHY
```

In order to form a complete physical layer, each PMD shall be integrated with the appropriate physical sublayers indicated in Table 52-1 and with the management functions which are accessible through the Management Interface defined in clause 45, all of which are hereby incorporated by reference.

Table 52-1-PMD type and associated physical layer clauses

Associated clause	10GBASE-SR, LR, ER	10GBASE-SW, LW, EW
46 -RS and XGMII	Required	Required
47 -XGXS and XAUI	Optional	Optional
49 - Type R PCS	Required	Required
50 - WIS	na	Required
51 - serial PMA	Required	Required

Figure 52-1 shows the relationshsip of the PMD and MDI sublayers to the ISO (IEEE) OSI reference model.

Add figure 52-1

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **52**   *SC* **52.1.1.1.3**   *P* **421**   *L* **9**   # **641**

William G. Lane   CSU, Chico

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

The effect of receipt for the PMD_UNITDATA.request primitive does not take loopback into account.

SuggestedRemedy

Replace the text in this subclause with the following:

Upon receipt of this primitive:
a)   If PMD_loopback is not enabled or if PMD_loopback is not implemented, the PMD converts the specified bit streams into the appropriate optical signal streams for output through the MDI.
b)   If PMD_loopback is enabled, the PMD generates a PMD_UNITDATA.indicate (rx_bit) primitive where rx_bit = tx_bit
Note: PMD_loopack is an optional function (see 52.3.8).

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.   Adopt B in principle only: use style of following 52.1.1.1.2. A is not true: optical signals can be generated in loopback.

Cl **52**   *SC* **52.1.1.3**   *P* **421**   *L* **38**   # **225**

Dudek, Mike T   Cielo Communications

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

The MDIO interface is an optional interface. I think that each of the items in this interface should be optional

SuggestedRemedy

change "shall be set to 1" to "shall be set to 1 if this aspect of the MDIO is implemented

Proposed Response   *Response Status*   **C**

REJECT.   Comment withdrawn by commenter.

Cl **52**   *SC* **52.1.1.3.3**   *P* **422**   *L* **3**   # **643**

William G. Lane   CSU, Chico

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

I_SD is no longer defined in clause 45

SuggestedRemedy

Replace I_SD with PMD_signal_detect_0

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **52**   *SC* **52.1.1.3.3**   *P* **422**   *L* **3**   # **226**

Dudek, Mike T   Cielo Communications

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

The MDIO interface is an optional interface. I think that each of the items in this interface should be optional

SuggestedRemedy

change "If the MDIO interface is implemented" to "If I_SD is implemented in the optional MDIO"

Proposed Response   *Response Status*   **C**

REJECT. Comment withdrawn by commenter.

Cl **52**   *SC* **52.12.2.1**   *P* **450**   *L* **51**   # **305**

Congdon, Herb V   Tyco Electronics

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

Maximum link distance for single-mode is not covered.

SuggestedRemedy

Delete ""...for multimode fiber...""

Proposed Response   *Response Status*   **C**

REJECT.   Suggested remedy would make the text incorrect.

Note: Need to make sure singlemode fiber is covered.

Cl **52**   *SC* **52.13**   *P* **449**   *L* **1**   # **727**

jonathan thatcher   World Wide Packets

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

This table should be labeled "(informative)".

SuggestedRemedy

Add

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **52**   *SC* **52.13**   *P* **449**   *L* **13**   # **728**

jonathan thatcher   World Wide Packets

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

There should be no blanks in this table. Change to N/A as appropriate.

SuggestedRemedy

Fix

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **52**   *SC* **52.13**   *P* **449**   *L* **14**   **#** **491**
Dawe, Piers   Agilent

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

DGDmax is an abbreviation in need of explanation. As the explanation is a very long story, maybe a reference would help. Perhaps ITU-T G.691 subclauses 6.3.2.3, 6.4.3 and Appendix I.

SuggestedRemedy

Add text: "Differential Group Delay (DGD) is the time difference between the fractions of a pulse that are transmitted in the two principal states of polarization of an optical signal." and "DGDmax is the maximum differential group delay that the system must tolerate." Refer to ITU-T G.691 subclauses 6.3.2.3, 6.4.3 and Appendix I. (Is it the signal or the fibre that has principal states?)

Proposed Response   *Response Status* **C**

REJECT.   The Editor respectfully requests that this comment be re-submitted in the next ballot cycle as it does not add to the technical completeness of this draft.

Cl **52**   *SC* **52.13**   *P* **449**   *L* **19**   **#** **729**
jonathan thatcher   World Wide Packets

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

It does not make sense to have a budget based on only two splices. This implies that the 40km is made up of only two pieces of fiber. This does not seem realistic.

SuggestedRemedy

Get information from cabling companies about the number of splices that will be expected (reasonable worst case) in a 40 km link.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Change to "two" to "multiple" "splices"…

Cl **52**   *SC* **52.13.1**   *P* **450**   *L* **16**   **#** **730**
jonathan thatcher   World Wide Packets

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

The fiber cable attenuation for 1550 nm is defined as N/A with a daggar pointing to a footnote. This table is normative. The footnote is also normative. But, the footnote references an informative table. Oops.

SuggestedRemedy

In the "N/A" cell, put "see footnote"
In the footnote put: "Attenuation for 1550 nm links is based on the fiber channel and is specified in 52.6.1." and remove existing text.

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **52**   *SC* **52.13.1**   *P* **450**   *L* **19**   **#** **544**
Steve Swanson   Corning

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

Bandwidth row in Table 52-20 is incomplete.

SuggestedRemedy

Add footnote "a" for bandwidth entries 160, 200 for 62.5um and 400, and 500 for 50um to read "Overfilled launch bandwidth per IEC 60793-1-40 or TIA-455-204."

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. See #549

Cl **52**   *SC* **52.13.1**   *P* **450**   *L* **19**   **#** **543**
Steve Swanson   Corning

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

Bandwidth row in Table 52-20 is incomplete.

SuggestedRemedy

Modify Modal bandwidth description to read " Modal bandwidth @ 850nm (min.) (MHz.km)

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. See #549

Cl **52**   *SC* **52.13.1**   *P* **450**   *L* **19**   **#** **545**
Steve Swanson   Corning

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

Bandwidth row in Table 52-20 is incomplete.

SuggestedRemedy

Add footnote "b" for bandwidth entry 2000 for 50um to read "Restricted launch bandwidth per IEC 60793-1-40 or TIA-455-220."

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. See #549

Cl **52**　　*SC* **52.13.1**　　　　　*P* **450**　　　*L* **20**　　*#* **549**

Paul Kolesar　　　　　　　　　　　　　　Lucent

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

The specification of launch condition in the Description column is inconsistent with other descriptors.

SuggestedRemedy

Delete "overfilled launch unless otherwise noted" and replace with footnotes as follows.
1. Footnote the 160, 200, 400, and 500 values with the following text:
Overfilled launch bandwidth per IEC 60793-1-40 or TIA/EIA 455-204.
2. Footnote the 2000 value with the following text:
Restricted launch bandwidth per IEC 60793-1-40 or TIA/EIA 455-220.

Proposed Response　　　*Response Status* **C**

ACCEPT.

Cl **52**　　*SC* **52.13.1**　　　　　*P* **450**　　　*L* **3**　　*#* **548**

Paul Kolesar　　　　　　　　　　　　　　Lucent

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

Per motion by Kolesar and Swanson in Tampa, November, 2000 the fiber reference standard is incorrect.

SuggestedRemedy

Replace ITU-T G.652 with IEC 60793-2.

Proposed Response　　　*Response Status* **C**

ACCEPT.

Cl **52**　　*SC* **52.13.1**　　　　　*P* **450**　　　*L* **3**　　*#* **492**

Dawe, Piers　　　　　　　　　　　　　　Agilent

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

Reference to ITU-T G.652 is good for SMF, not valid for MMF.

SuggestedRemedy

Add the IEC reference for MMF.

Proposed Response　　　*Response Status* **C**

ACCEPT IN PRINCIPLE. Done.

Cl **52**　　*SC* **52.13.1**　　　　　*P* **450**　　　*L* **32**　　*#* **493**

Dawe, Piers　　　　　　　　　　　　　　Agilent

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

"For the single mode case, the 1310 nm attenuation is provided for Outside Plant cable as defined in TIA 568B.3" doesn't actually say which number (0.4 or 0.5) goes with inside or outside plant

SuggestedRemedy

Add text to clarify.

Proposed Response　　　*Response Status* **C**

REJECT. Please specify which one's which.

Cl **52**　　*SC* **52.13.1**　　　　　*P* **450**　　　*L* **34**　　*#* **546**

Steve Swanson　　　　　　　　　　　　Corning

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

Current footnote on bandwidth measurement incorrect.

SuggestedRemedy

Delete current footnote on bandwidth measurement

Proposed Response　　　*Response Status* **C**

ACCEPT.

Cl **52**　　*SC* **52.13.2**　　　　　*P* **450**　　　*L* **44**　　*#* **731**

jonathan thatcher　　　　　　　　　　　World Wide Packets

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

The last sentence in the paragraph is no longer true and does not reflect the most recent decisions of the committee.

SuggestedRemedy

Remove sentence: "The 10GBASE... plug into the MDI optical receiptical,...."

Proposed Response　　　*Response Status* **C**

ACCEPT.

Cl **52**   *SC* **52.13.2**   *P* **450**   *L* **45**   # **449**
Ohlen, Peter   Optillion

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

With the change in section 52.13.3 that the MDI need not be a connector it is not correct that: "10GBASE-SR/LR/ER/SW/LW/EW PMD is coupled to the fiber optic cabling through a connector plug into the MDI optical receptacle, as shown in subclause 52.13.3".

SuggestedRemedy

Change the wording of this section to conform with the MDI definition in 52.13.3.

Proposed Response   *Response Status* **C**
ACCEPT.

Cl **52**   *SC* **52.13.2.1**   *P* **450**   *L* **49**   # **732**
jonathan thatcher   World Wide Packets

Comment Type **E**   *Comment Status* **R**
"shall" required

SuggestedRemedy
Add

Proposed Response   *Response Status* **C**
REJECT.   Where does this shall go?

Cl **52**   *SC* **52.13.2.1**   *P* **451**   *L* **2**   # **733**
jonathan thatcher   World Wide Packets

Comment Type **E**   *Comment Status* **A**
Remove Table 52-19 reference as this is informative.

SuggestedRemedy
see comment

Proposed Response   *Response Status* **C**
ACCEPT.

Cl **52**   *SC* **52.13.3**   *P* **420**   *L* **9**   # **646**
William G. Lane   CSU, Chico

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

The MDI definition is inconsistent with the transmitter and receiver receptacles and with the location of TP3 in 52.3.1.

SuggestedRemedy

Make the MDI definition consistent with the transmitter and receiver connections and with the location of TP3.

NOTE this needs to be coordinated with clause 54.

Proposed Response   *Response Status* **C**

REJECT. Thanks for the comment. Bill, please can you resubmit against the next draft with a remedy.

Cl **52**   *SC* **52.13.3**   *P* **451**   *L* **23**   # **446**
Ohlen, Peter   Optillion

Comment Type **E**   *Comment Status* **A**
XXX should point to 52.3.1

SuggestedRemedy
Change XXX to 52.3.1.

Proposed Response   *Response Status* **C**
ACCEPT.

Cl **52**   *SC* **52.13.3**   *P* **453**   *L* **20**   # **363**
Bob Musk   JDS Uniphase

Comment Type **E**   *Comment Status* **R**
Cautionary note: IEC 61753-1-2 has not been published. Still at the Committee Draft stage and subject to change. Unclear if IEEE rules allow reference to unapproved standards.

SuggestedRemedy

Document provides useful operating environmental data of benefit to the standard, manufacturers and users. If IEEE can accept incorporation of unapproved standards reference, then remove this comment.

Proposed Response   *Response Status* **C**

REJECT. I don't believe IEEE can accept incorporation of unapproved standards, but I don't see a remedy in the response. Please can you resubmit with an appropriate remedy (replacement reference).

Cl **52**　　*SC* **52.14.2.1**　　　　*P* **452**　　*L* **1**　　　# **617**

Bottorff, Paul　　　　　　　　　Nortel Networks

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

No items are specified in the PICS.

SuggestedRemedy

Proposed Response　　　*Response Status*　**C**

REJECT. No alternate text supplied. PICS will be built for next draft.

Cl **52**　　*SC* **52.2**　　　　*P* **422**　　*L* **22**　　　# **482**

Dawe, Piers　　　　　　　　　Agilent

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

As far as I am aware, there is no mandate for a power down feature. It does not appear in http://www.ieee802.org/3/ae/public/jan01/hudgins_1_0101.pdf or in the rest of this clause.

SuggestedRemedy

Delete the line.

If you want to introduce a new feature, bring a thought-through proposal and beg the group's indulgence to bend the rules.

Proposed Response　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.   Remove the powerdown feature from the table. Should be coordinated to add feature (or not) to Clause 52 and Clause 54.

Cl **52**　　*SC* **52.2**　　　　*P* **422**　　*L* **24**　　　# **179**

Dawe, Piers　　　　　　　　　Agilent

Comment Type　**T**　　*Comment Status*　**A**　　　　*4LANES*

Serial PMD doesn't have four transmit disables as shown here.

SuggestedRemedy

Delete the four transmit disables and substitute the one ("global") transmit disable.

Proposed Response　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE. Handled by another comment.

Cl **52**　　*SC* **52.2**　　　　*P* **422**　　*L* **24**　　　# **675**

jonathan thatcher　　　　　　　World Wide Packets

Comment Type　**E**　　*Comment Status*　**A**　　　　*4LANES*

PMD_transmit_disable_3:1 do not belong.

SuggestedRemedy

Remove rows

Proposed Response　　　*Response Status*　**C**

ACCEPT.

Cl **52**　　*SC* **52.2**　　　　*P* **422**　　*L* **43**　　　# **676**

jonathan thatcher　　　　　　　World Wide Packets

Comment Type　**E**　　*Comment Status*　**A**　　　　*4LANES*

PMD_signal_detect_3:1 do not belong

SuggestedRemedy

Remove rows

Proposed Response　　　*Response Status*　**C**

ACCEPT.

Cl **52**　　*SC* **52.2**　　　　*P* **422**　　*L* **43**　　　# **182**

Dawe, Piers　　　　　　　　　Agilent

Comment Type　**T**　　*Comment Status*　**A**　　　　*4LANES*

Serial PMD doesn't have four signal detects as shown here.

SuggestedRemedy

Delete the four signal detects and substitute the one ("global") signal detect.

Proposed Response　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE. Handled by another comment.

Cl **52**　　*SC* **52.2.1.1**　　　*P* **483**　　*L* **22**　　　# **619**

Bottorff, Paul　　　　　　　　　Nortel Networks

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

Using both tx_bit[0:3} and tx_lane[0:3] adds unnecessary confusion to the clause. Also use of both rx_bit[3:0] and rx_lane[3:0] adds confusion.

SuggestedRemedy

Replace all instances of rx_bit with rx_lane and all instances of tx_bit with tx_lane. Delete the sentence in line 25 and page 484 line 2.

Proposed Response　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE. Alternately handled.

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* **52.2.1.1**

Cl **52**   *SC* **52.3.1**   *P* **423**   *L* **10**   # **644**
William G. Lane   CSU, Chico

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

The MDI definition in 52.13.3 is no longer consistent with transmitter receptacle and receiver receptacle as used in this paragraph.

SuggestedRemedy

The MDI definition must be revisited and made consistent with this paragraph and the location of test points TP2 and TP3 in the current figure 52-1.

NOTE: the solution to this problem needs to be coordinated with clause 54

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Removed reference, changed t/rx receptacle to transmitter/receiver. Let's coordinate and revisit. Thanks for the comment!

Cl **52**   *SC* **52.3.1**   *P* **423**   *L* **23**   # **677**
jonathan thatcher   World Wide Packets

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

Recommend using TP2 connector representation used in previous versions. It is more accurate.

SuggestedRemedy

Change

Proposed Response   *Response Status* **C**

REJECT. Duelling commenters between versions. Please could Mike Dudek and Jonathan Thatcher bring a combined proposal for this figure back to committee.

Cl **52**   *SC* **52.3.1**   *P* **423**   *L* **39**   # **227**
Dudek, Mike T   Cielo Communications

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

I don't think we should add descriptive test to explain why the standard is written the way it is.

SuggestedRemedy

Remove editors note.

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **52**   *SC* **52.3.4**   *P* **424**   *L* **22**   # **259**
Christensen, Benny   Intel / GIGA

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

'>=' prints out as '?S' (capital S with tilde) in my document

SuggestedRemedy

resolve printing error

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. See #17.

Cl **52**   *SC* **52.3.4**   *P* **424**   *L* **24**   # **679**
jonathan thatcher   World Wide Packets

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

Funny character...

SuggestedRemedy

Replace with "less than" or "<"

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. See #17.

Cl **52**   *SC* **52.3.4**   *P* **424**   *L* **26**   # **680**
jonathan thatcher   World Wide Packets

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

Change "PMD_Loopback" to "PMD_Loopback asserted"

SuggestedRemedy

see comment

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **52**   *SC* **52.3.4**   *P* **424**   *L* **26**   **#** **180**

Dawe, Piers   Agilent

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

Signal detect should mean what it says.
1. If you want to OR signal detect with loopback then the output is not signal detect but something else.
2. The PMD is not a controller, monitor or manager. It is not the place to OR any ancillary signal. This can be done elsewhere.
3. The modified output of SD and something else would be misleading: the managing entity actually wants to know if signal has been received. It knows if it has raised a loopback command!

SuggestedRemedy

Delete "OR PMD_loopback"

Proposed Response   *Response Status* **C**

REJECT. This does not fully remedy expected operation in clauses 30, 44, 45, 49, 50, 51, 54. Please resubmit as a global (00) comment against D3.0 with a global remedy.

Cl **52**   *SC* **52.3.4**   *P* **424**   *L* **48**   **#** **260**

Christensen, Benny   Intel / GIGA

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

'O_TxDbl_0' variable name not found. Seems to be inconsistent with name in other clauses (45.2.1)

SuggestedRemedy

Replace with correct status/variable name

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Need to make sure all these changes fit together.

Cl **52**   *SC* **52.3.4**   *P* **424**   *L* **48**   **#** **230**

Dudek, Mike T   Cielo Communications

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

The MDIO interface is an optional interface. I think that each of the items in this interface should be optional

SuggestedRemedy

change "if a clause 45 MDIO interface" to "If O_TxDbl_0 is supported in the optional clause 45 MDIO interface"

Proposed Response   *Response Status* **C**

PROPOSED ACCEPT IN PRINCIPLE. "O_TxDbl_0" doesn't appear in Clause 45, and the function is an optional one within the MDIO. Replace sentence with "Optionally, this function may be implemented as specified in 45.2.1.6.4."

Cl **52**   *SC* **52.3.4**   *P* **424**   *L* **8**   **#** **678**

jonathan thatcher   World Wide Packets

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

I_SD is no longer correct.

SuggestedRemedy

PMD_signal_detect_0

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **52**   *SC* **52.3.4**   *P* **424**   *L* **8**   **#** **411**

Ohlen, Peter   Optillion

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

I_SD is not defined. Maybe it is an old notation.

SuggestedRemedy

Define I_SD or change it to something that is defined.

Proposed Response   *Response Status* **C**

ACCEPT. It was old. Thanks.

Cl **52**   *SC* **52.3.4**   *P* **424**   *L* **8**   **#** **228**

Dudek, Mike T   Cielo Communications

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

The MDIO interface is an optional interface. I think that each of the items in this interface should be optional

SuggestedRemedy

change "If MDIO is implemented" to "If I_SD is implemented in the optional MDIO"

Proposed Response   *Response Status* **C**

REJECT. Withdrawn

Cl **52**   *SC* **52.3.4,7,8**   *P* **52**   *L*   **#** **186**

Dawe, Piers   Agilent

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

If PMD_receive_local_fault and PMD_loopback are asserted simultaneously, this draft gives contradictory instructions for SIGNAL_DETECT. It's trying to be too clever.

SuggestedRemedy

Delete all text referring to modifications of SIGNAL_DETECT.

Proposed Response   *Response Status* **C**

REJECT. This does not fully remedy expected operation in clauses 30, 44, 45, 49, 50, 51, 54. Please resubmit as a global (00) comment against D3.0 with a global remedy.

TYPE: TR/technical required T/technical E/editorial   COMMENT STATUS: D/dispatched A/accepted R/rejected   SORT ORDER: Clause, Page, Line, Subclause   Page 95 of 144

RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *Cl* **52**   *SC* **52.3.4,7,8**

Cl **52**　　*SC* **52.3.5**　　　　　*P* **424**　　*L* **44**　　# **229**

Dudek, Mike T　　　　　　　　Cielo Communications

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

Incorrect table reference

SuggestedRemedy

Change "Table 52-4" to "Tables 52-6, 52-10, or 52-14"

Proposed Response　　*Response Status* **C**

ACCEPT.

Cl **52**　　*SC* **52.3.5**　　　　　*P* **424**　　*L* **46**　　# **181**

Dawe, Piers　　　　　　　　Agilent

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

PMD cannot assert PMD_transmit_disable. It's an input to the PMD. Nor should it try, without more thought, or we have a race or latch-off condition. It may be an intelligent controller elsewhere that shuts down a PMD reporting a fault and starts a PMD - but it's optional. If you want to introduce such a concept (primrose path!) then vote and write it in the appropriate clause.

SuggestedRemedy

Replace "If a PMD_transmit_local_fault (optional) is detected, then the PMD_transmit_disable shall also be asserted." with "If an (optional) PMD_transmit_local_fault signal is asserted, the PMD may disable itself. The (optional) PMD_transmit_disable function may also be asserted by the entity controlling the PMD."

Proposed Response　　*Response Status* **C**

ACCEPT IN PRINCIPLE. Change wording to " If a PMD_transmit_local_fault (optional) is detected, then the PMD_transmit_disable should also be asserted."

Cl **52**　　*SC* **52.3.5**　　　　　*P* **424**　　*L* **48**　　# **412**

Ohlen, Peter　　　　　　　　Optillion

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

O_TxDbl is not defined. I think it should read "PMD_transmit_disable_0"

SuggestedRemedy

Change to "PMD_transmit_disable_0" or define O_TxDbl.

Proposed Response　　*Response Status* **C**

ACCEPT IN PRINCIPLE. Done.

Cl **52**　　*SC* **52.3.5**　　　　　*P* **424**　　*L* **48**　　# **681**

jonathan thatcher　　　　　　　　World Wide Packets

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

O_Tx_Dbl_0 is no longer accurate.

SuggestedRemedy

Replace with PMD_tansmit_disable_0

Proposed Response　　*Response Status* **C**

ACCEPT.

Cl **52**　　*SC* **52.3.6**　　　　　*P* **425**　　*L* **20**　　# **683**

jonathan thatcher　　　　　　　　World Wide Packets

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

Change IRxFault to correct new nomenclature.

SuggestedRemedy

see comment

Proposed Response　　*Response Status* **C**

ACCEPT IN PRINCIPLE. Change to PMD_receive_local_fault.

Cl **52**　　*SC* **52.3.6**　　　　　*P* **425**　　*L* **6**　　# **183**

Dawe, Piers　　　　　　　　Agilent

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

This is the same issue as subclause 52.3., p.424 l.46.PMD cannot assert PMD_transmit_disable. It's an input to the PMD. Nor should it try, without more thought, or we have a race or latch-off condition. It may be an intelligent controller elsewhere that shuts down a PMD reporting a fault and starts a PMD - but it's optional. If you want to introduce such a concept (primrose path!) then vote and write it in the appropriate clause.

SuggestedRemedy

Replace "If a PMD_transmit_local_fault (optional) is detected, then the PMD_transmit_disable shall also be asserted." with "If an (optional) PMD_transmit_local_fault signal is asserted, the PMD may disable itself. The (optional) PMD_transmit_disable function may also be asserted by the entity controlling the PMD."

Proposed Response　　*Response Status* **C**

ACCEPT IN PRINCIPLE. See #181

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 96 of 144
Cl **52**　　*SC* **52.3.6**

Cl **52**   *SC* **52.3.6**   *P* **425**   *L* **6**   # **682**

jonathan thatcher   World Wide Packets

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

Redundant "shall" in line is already covered in the PMD_transmit_disable function description.

SuggestedRemedy

Change "...shall be disabled according to...." to "...is disabled via the...."

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **52**   *SC* **52.3.6**   *P* **425**   *L* **9**   # **413**

Ohlen, Peter   Optillion

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

O_TX_Fault is not defined.

SuggestedRemedy

Define it.

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE. Fixed.

Cl **52**   *SC* **52.3.6**   *P* **425**   *L* **9**   # **261**

Christensen, Benny   Intel / GIGA

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

'O_TX_Fault' not found anywhere in D2.1. Improper nameWrong X-referenced clause

SuggestedRemedy

Use correct reference name and subsclause 45.2.1.xxx

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE. Need to still correct cross-clause cross-reference (CHIEF EDITOR
JOB!).

Cl **52**   *SC* **52.3.7**   *P* **425**   *L* **17**   # **184**

Dawe, Piers   Agilent

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

Signal detect should mean what it says.
1. If you want to OR signal detect with PMD_receive_local_fault then the output is not signal
detect but something else.
2. The PMD is not a controller, monitor or manager. It is not the place to OR any ancillary
signal. This can be done elsewhere.
3. The modified output of SD and something else would be misleading: the managing entity
actually wants to know if signal has been received. It can read the PMD_receive_local_fault
separately.

SuggestedRemedy

Delete the sentence. There is no point trying to specify what the SD output should be when the
Rx is faulty: it would be untrustworthy anyway.

Proposed Response   *Response Status*   **C**

REJECT.   Needs to be coordinated with clause 45 and 54 as a global change to the standard.
Should be resubmitted.

Cl **52**   *SC* **52.3.7**   *P* **425**   *L* **20**   # **262**

Christensen, Benny   Intel / GIGA

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

'IRxFault' not found. Underscores missing / name not found.Referenced subclause incorrect

SuggestedRemedy

Resolve reference

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE. References found. This is editorial, not technical, pls.

Cl **52**   *SC* **52.3.8**   *P* **425**   *L* **26**   # **263**

Christensen, Benny   Intel / GIGA

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

'PMD_loopback' not found elsewhere in D2.1.Furthermore ref to 45.2.1.4.2 seem to be wrong

SuggestedRemedy

Resolve naming conventionThe correct ref. I could find seems to be 45.2.1.1.2

Proposed Response   *Response Status*   **C**

REJECT. See table 52-2 for cross-clause definitions of functions and bits, including
PMD_loopback. Reference to clause 45 is a global issue for the chief editor to resolve (replaced
by XXX for time being).

Cl **52**   *SC* **52.3.8**   *P* **425**   *L* **28**   **#** **684**

jonathan thatcher   World Wide Packets

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

Change "PMD_loopback function is active" to "PMD_loopback is asserted"
And on line 30 remove words "shall be"

SuggestedRemedy

see comment

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **52**   *SC* **52.3.8**   *P* **425**   *L* **30**   **#** **231**

Dudek, Mike T   Cielo Communications

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

The MDIO interface is an optional interface. I think that each of the items in this interface
should be optional

SuggestedRemedy

Proposed Response   *Response Status*   **C**

REJECT. Withdrawn

Cl **52**   *SC* **52.3.8**   *P* **425**   *L* **30**   **#** **254**

Dudek, Mike T   Cielo Communications

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

It is a better idea to have the signal detect indicate whether an optical signal is present
independent of whether the electrical signal is being looped back.

SuggestedRemedy

Delete "and SIGNAL_DETECT shall be set OK"

Proposed Response   *Response Status*   **C**

REJECT.   See #180

Cl **52**   *SC* **52.3.8**   *P* **425**   *L* **30**   **#** **185**

Dawe, Piers   Agilent

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

Same issue as for 52.3.4/424/26:Signal detect should mean what it says.
1. If you want to OR signal detect with loopback then the output is not signal detect but
something else.
2. The PMD is not a controller, monitor or manager. It is not the place to OR any ancillary
signal. This can be done elsewhere.
3. The modified output of SD and something else would be misleading: the managing entity
actually wants to know if signal has been received. It knows if it has raised a loopback
command!

SuggestedRemedy

Delete "and SIGNAL_DETECT shall be set to OK."

Proposed Response   *Response Status*   **C**

REJECT.   Please resubmit. This needs to be coordinated with other clauses in D3.0 as a
global change. Prescribed remedy is insufficient.

Cl **52**   *SC* **52.3.8**   *P* **425**   *L* **31**   **#** **645**

William G. Lane   CSU, Chico

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

A PMD_power_down function needs to be added.

SuggestedRemedy

See 54.4.6 for details

Proposed Response   *Response Status*   **C**

REJECT. See #482.

Cl **52**   *SC* **52.31**   *P* **449**   *L* **11**   **#** **203**

Dawe, Piers   Agilent

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

1550 Channel insertion loss is not 16.1 dB, it's 13 dB as in table 52-16. I can see that a PMD
that could cope with 16.1 dB would be attractive, but it isn't what clause 52 describes. Nothing
here stops vendors over-achieving.

SuggestedRemedy

Change 16.1 to 13.0. Change footnote to "Channel insertion loss at 1550 nm calculated using
cable length, attenuation of 0.30 dB/km, two connections at 0.5 dB each and two splices of
negligible attenuation."

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **52** *SC* **52.4** *P* **426** *L* **11** *#* **582**

Rich Taborek nSerial Corporation

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

The choice of minimum distance over MMF is arbitrary. Per recent discusions and presentations to NCITS T11.2, the minimum 2 meter distance specified for MMF is arbitray and too restrictive for cost effective 10G implementations. See the following presentations for complete details justifications and endorsements. Technical issues explored in justifying a reduction of the minimum 2 meter distance specified for MMF include the following: Cladding modes, Equilibrium Mode Distribution (EMD), Coherence length, Back Reflection and RIN, Detector Saturation and Cable strain relief.
ftp://ftp.t11.org/t11/pub/fc/pi/01-037v0.pdf
ftp://ftp.t11.org/t11/pub/fc/pi/01-038v0.pdf
ftp://ftp.t11.org/t11/pub/fc/pi/01-039v0.pdf

SuggestedRemedy

Reduce the minimum length for MMF to 0.5 m

Proposed Response *Response Status* **C**

REJECT. Rich, thanks for the comment. Please resubmit this along with appropriate material that justifies the reduction in the minimum distance for 10 Gbit/s lasers, which may exhibit different characteristics than those in the supporting documentation you provided.

Cl **52** *SC* **52.4** *P* **426** *L* **19** *#* **539**

Steve Swanson Corning

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

Bandwidth column in Table 52-5 is incomplete.

SuggestedRemedy

Add footnote "a" for bandwidth entries 160, 200, 400, and 500 to read "Overfilled launch bandwidth per IEC 60793-1-40 or TIA-455-204."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Removed measurement conditions for modal bandwidth.

Cl **52** *SC* **52.4** *P* **426** *L* **20** *#* **540**

Steve Swanson Corning

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

Bandwidth column in Table 52-5 is incomplete.

SuggestedRemedy

Add footnote "b" for bandwidth entry 2000 to read "Restricted launch bandwidth per IEC 60793-1-40 or TIA-455-220."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.   Removed launch condition.

Cl **52** *SC* **52.4** *P* **426** *L* **8** *#* **541**

Steve Swanson Corning

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

Current footnote is not needed.

SuggestedRemedy

Delete footnote on line 19.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **52** *SC* **52.4** *P* **426** *L* **8** *#* **538**

Steve Swanson Corning

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

Bandwidth column in Table 52-5 is incomplete.

SuggestedRemedy

Modify Modal bandwidth heading to read " Modal bandwidth @ 850nm (min.) (MHz.km)

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.   Try:
Modal bandwidth @ 850 nm
(min)
(MHz km)

Cl **52** *SC* **52.4.1** *P* **427** *L* **10** *#* **685**

jonathan thatcher World Wide Packets

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

Fibure 52-2 is not sufficiently legible to be normative. This should be increased to maximum possible size. If it is still not clear, then the contents need to be reduced to tabular form.

There needs to be a legend on the OMA values (3rd dimension)

SuggestedRemedy

See comment

Proposed Response *Response Status* **C**

REJECT. Overriden by solutions.

Cl **52**   *SC* **52.4.1**   *P* **427**   *L* **24**   **#** 695

jonathan thatcher   World Wide Packets

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

Launch condition requirements for meeting the 2000 MHz*km specification are required in table 52-6.

SuggestedRemedy

Add conditions and any references necessary.

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **52**   *SC* **52.4.1**   *P* **427**   *L* **37-40**   **#** 369

Geoffrey Garner   Lucent Technologies

Comment Type **T**   *Comment Status* **R**   *20 ppm*

Questions regarding this comment can also be directed towards Juergen Rahn from Lucent Technologies.(e-mail: krahn@lucent.com, phone: +499115262776, fax: +499115266299)The specified frequency accuracy for the 3 Serial WAN PHYs in Clause 52 (10GBASE-SW, 10GBASE-LW, and 10GBASE-EW) is +/- 100 ppm (Tables 52-6, 52-7, 52-10, 52-11, 52-14, 52-15). Any interworking with a SONET network, whose frequency accuracy is +/- 20 ppm, is intended to occur through an Ethernet Line Terminating Element (ELTE); this element would, among other things, have a pull-in range of at least +/- 100 ppm and any frequency difference would be taken up by pointer adjustments (the ELTE would terminate the SONET Line section).One of the reasons for developing the WAN PHY specifications was to, as stated in the PAR, enable the use of 10 GbE over wide area networks operating at rates compatible with OC-192c and VC-4-64c payload rates. These wide area networks include SONET, SDH, and the Optical Transport Network (OTN). The OTN is specified in the recently approved ITU-T Recommendation G.709, and allows for multiple optical channels (i.e., DWDM) at rates of approximately 2.5, 10, and 40 Gbit/s. The OTN is not SONET or SDH. The above approach, using an ELTE, will not work for transport of the WAN PHY over the OTN. The asynchronous mapping of OC-192/STM-64 into an OTN 10 Gbit/s optical channel (more precisely, into an ODU2) can tolerate at most a +/- 45 ppm frequency tolerance of the payload; the bit-synchronous mapping requires a +/- 20 ppm frequency tolerance of the payload. This is normally not a problem because an ordinary STM-64/OC-192 is at most 20 ppm off of nominal frequency. However, an OC-192 containing 10 Gbe WAN PHY could not be mapped into an ODU2 if itsfrequency is off by more than 45 ppm. It is not possible to address this problem using an ELTE-like device because there is no pointer adjustment mechanism. In fact, the only way the 10 Gbe frames could be transported over the 10 Gbit/s optical channel, given the current +/- 100 ppm frequency tolerance, would be to terminate the WAN PHY and remove the ethernet frames and map them into the optical channel using some other mapping.Since the OTN is expected to be the major wide-area transport, it is highly desirable to specify in Clause 52, as an option, a +/- 20 ppm frequency accuracy for the three serial WAN PHYs for the case where transport over the OTN is desired.

SuggestedRemedy

Insert in Column 1 of Table 52-6 on p. 427, between lines 39 and 40:
10GBASE-SW (optional; needed if transport over the Optical Transport Network via 10 Gbit/s optical Channel is desired; see ITU-T Recommendation G.709).
Insert in Column 2 of Table 52-6 on p. 427, between lines 39 and 40:
9.95328 +/- 20 ppm

Proposed Response   *Response Status* **C**

REJECT. Motion by commenter to accept 20 ppm tolerance specification made to task force in general session failed.

Cl **52**　　*SC* **52.4.1**　　　　*P* **427**　　*L* **38**　　　# **687**

jonathan thatcher　　　　　　　　World Wide Packets

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

Remove word "(nominal)"; this would only be used if the range were not explicitly specified, which it is.

SuggestedRemedy

see comment

Proposed Response　　　*Response Status* **C**

REJECT. The (nominal) is used to indicate that the values do not represent a range (I.e., 10+/-2 would need a nominal, but 8-12 would be a range). Since we don't actually want to specify this as a range, I think the qualifier is still needed as per comments by Bill Lane.

Cl **52**　　*SC* **52.4.1**　　　　*P* **427**　　*L* **41**　　　# **265**

Christensen, Benny　　　　　　　Intel / GIGA

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

'greak lambda' in range. Not use in any other tables niether TX or RX specifications

SuggestedRemedy

Delete 'greak lambda',

Proposed Response　　　*Response Status* **C**

ACCEPT.

Cl **52**　　*SC* **52.4.1**　　　　*P* **427**　　*L* **41**　　　# **693**

jonathan thatcher　　　　　　　　World Wide Packets

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

Wavelength; Spectral Width; and OMA are no longer needed in Table 52-6 since these are referenced in the Fibure 52-2. Text needs to be added to 52.4.1 to indicate that meeting the triple trade off curves is normative (shall statement). Description of what passes (above, below the lines...) is required.

SuggestedRemedy

See comment

Proposed Response　　　*Response Status* **C**

REJECT. Overriden by other changes.

Cl **52**　　*SC* **52.4.1**　　　　*P* **427**　　*L* **50**　　　# **547**

Paul Kolesar　　　　　　　　　　Lucent　　　　　　　　　　　*LAUNCH*

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

The SR/SW Transmitter is missing launch condition specifications corresponding to 300-m transmission on 2000 MHz-km 50 um fiber

SuggestedRemedy

Add the following two rows to Table 52-6:
Encircled flux @ r um in 50 um fiber (min) 86 %
Encircled flux @ r=4.5 um in 50 um fiber (max) 30 %

Proposed Response　　　*Response Status* **C**

ACCEPT IN PRINCIPLE. See #542

Cl **52**　　*SC* **52.4.1**　　　　*P* **427**　　*L* **52**　　　# **542**

Steve Swanson　　　　　　　　　Corning　　　　　　　　　　*LAUNCH*

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

Transmit characteristics are incomplete

SuggestedRemedy

Add two Table entries for Encircled Flux:
"the encircled flux at 19 um must be greater than or equal to 86%" and
"the encircled flux at 4.5um must be less or equal to 30%"

Proposed Response　　　*Response Status* **C**

ACCEPT IN PRINCIPLE. Inserted as a footnote: "The encircled flux at 19 mm must be greater than or equal to 86% and the encircled flux at 4.5mm must be less or equal to 30% per TIA-455-203"

Cl **52**　　*SC* **52.4.1**　　　　*P* **427**　　*L* **53**　　　# **187**

Dawe, Piers　　　　　　　　　　Agilent

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

The note "RMS Spectral Width is the standard deviation for a Gaussian distribution fit for a multimode laser spectrum." is tautologous (we were very tired when we wrote it!)

SuggestedRemedy

Replace with: "RMS Spectral Width is the standard deviation of the spectrum (see 1.4.238).

Proposed Response　　　*Response Status* **C**

ACCEPT.

Cl **52** *SC* **52.4.1**   *P* **428**   *L* **23** **#** **697**

jonathan thatcher   World Wide Packets

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

Rx wavelength range does not match Tx wavelength range indicated by triple tradoff curves.

SuggestedRemedy

Fix

Proposed Response   *Response Status* **C**

REJECT. Overriden by other changes.

Cl **52** *SC* **52.4.1**   *P* **428**   *L* **6** **#** **696**

jonathan thatcher   World Wide Packets

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

Remove editors note. This is taken care of in section 52.9.2.

SuggestedRemedy

see comment

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **52** *SC* **52.4.1**   *P* **429**   *L* **10-28** **#** **1**

Del Hanson   Tripath Technology

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

Figure 52-2 is not readable and useful for setting standards limits.

SuggestedRemedy

If Figure 52-2 provides helpful guidance on parameterdependence, it should be moved to an Informative Annex. In addition, thecurve parameters should reference uW rather than uA.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Changes to TTO as per resolution.

Cl **52** *SC* **52.4.2**   *P* **428**   *L* **19** **#** **688**

jonathan thatcher   World Wide Packets

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

Remove word "(nominal)"; this would only be used if the range were not explicitly specified, which it is.

SuggestedRemedy

see comment

Proposed Response   *Response Status* **C**

REJECT. See #687

Cl **52** *SC* **52.4.2**   *P* **428**   *L* **19-22** **#** **370**

Geoffrey Garner   Lucent Technologies

Comment Type **T** *Comment Status* **R**   *20 ppm*

See Comment for Subclause 52.4.1, p.427, lines 37 - 40 (Table 52-6)

SuggestedRemedy

Insert in Column 1 of Table 52-7 on p. 428, between lines 21 and 22:
10GBASE-SW (optional; needed if transport over the Optical Transport Network via 10 Gbit/s optical Channel is desired; see ITU-T Recommendation G.709)Insert in Column 2 of Table 52-7 on p. 428, between lines 21 and 22:
9.95328 +/- 20 ppm

Proposed Response   *Response Status* **C**

REJECT. See #369

Cl **52** *SC* **52.4.2**   *P* **430**   *L* **30** **#** **3**

Del Hanson   Tripath Technology

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

Using spread sheet 10GEPBud2_4_1.xls, distributed 19Dec-00, theStressed Receive sensitivity in Table 52-7 is in error. It is calculated correctly, however, in Table 52-11andTable 52-15.

SuggestedRemedy

Change Stressed Receive sensitivity from -10.48 dBm to -9.67 dBm.

Proposed Response   *Response Status* **C**

REJECT. To be handled by Serial PMD ad hoc.

Cl **52** *SC* **52.4.3**   *P* **429**   *L* **20** **#** **236**

Dudek, Mike T   Cielo Communications

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

The footnote "The unallocated margin etc." isn't technically correct with the multiple different unallocated margins.

SuggestedRemedy

Suggest changing this footnote to "An unallocated margin of 0.23dB is not available for use as additional insertion losses. It simply represents unknown penalties and uncertainties in the known parameters. Additional unallocated loss above the 0.23dB is available for additional insertion losses.

Proposed Response   *Response Status* **C**

REJECT. Withdrawn.

TYPE: TR/technical required T/technical E/editorial COMMENT STATUS: D/dispatched A/accepted R/rejected SORT ORDER: Clause, Page, Line, Subclause Page 102 of 144

RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *Cl* **52** *SC* **52.4.3**

Cl **52**   *SC* **52.4-5**   *P*   *L*   **#** **451**

Ohlen, Peter   Optillion

Comment Type **T**   *Comment Status* **R**   *Spectral Width*

RMS spectral widhth is not the most relevant measurement for single-mode lasers. We should consider changing this to something more appropriate. FWHM @ -20dB has been suggested earlier.

SuggestedRemedy

The RMS value is used in the link model, so we need to calculate the proper value, but a first step could be to insert the FWHM@-20dB which corresponds to the RMS width.As a second step the RMS value could be removed and the corresponding changes made in the link model.

Proposed Response   *Response Status* **C**

REJECT. This represents no technical change that we know of but has significant editorial impact. The Serial PMD ad hoc has been requested to come back at the May interim with a proposal for resolution of this issue (RMS Spectral Width vs. FWHM @ -20 dB)

Cl **52**   *SC* **52.5**   *P*   *L*   **#** **452**

Ohlen, Peter   Optillion

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

Interferometric noise should be included in the link model, and added into the link budget. The resulting penalty will depend on other decisions.

SuggestedRemedy

Adjust the link model to include interferometric noise.

Proposed Response   *Response Status* **C**

REJECT. Link model not part of standard.

Cl **52**   *SC* **52.5**   *P* **429**   *L* **25**   **#** **18**

Stoltz, Mario   ChipIng.de, an Intel co

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

"...operating range (...) are defined..."

SuggestedRemedy

Change to "...is defined"

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **52**   *SC* **52.5**   *P* **429**   *L* **26**   **#** **188**

Dawe, Piers   Agilent

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

Grammar: "The operating range ... are defined...."

SuggestedRemedy

Change "are" to "is".

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. See #18

Cl **52**   *SC* **52.5.1**   *P* **430**   *L* **10**   **#** **686**

jonathan thatcher   World Wide Packets

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

Fibure 52-3 is not sufficiently legible to be normative. This should be increased to maximum possible size. If it is still not clear, then the contents need to be reduced to tabular form.

There needs to be a legend on the OMA values (3rd dimension)

SuggestedRemedy

See comment

Proposed Response   *Response Status* **C**

REJECT. Overriden by other changes.

Cl **52**   *SC* **52.5.1**   *P* **430**   *L* **32**   **#** **689**

jonathan thatcher   World Wide Packets

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

Remove word "(nominal)"; this would only be used if the range were not explicitly specified, which it is.

SuggestedRemedy

see comment

Proposed Response   *Response Status* **C**

REJECT. See #687

Cl **52**   *SC* **52.5.1**   *P* **430**   *L* **32-35**   # **371**
Geoffrey Garner   Lucent Technologies

Comment Type   **T**   *Comment Status*   **R**   *20 ppm*
See Comment for Subclause 52.4.1, p.427, lines 37 - 40 (Table 52-6)

SuggestedRemedy
Insert in Column 1 of Table 52-10 on p. 430, between lines 34 and 35:
10GBASE-SW (optional; needed if transport over the Optical Transport Network via 10 Gbit/s optical Channel; see ITU-T Recommendation G.709)
Insert in Column 2 of Table 52-10 on p. 430, between lines 34 and 35:
9.95328 +/- 20 ppm

Proposed Response   *Response Status*   **C**
REJECT.   See #369

Cl **52**   *SC* **52.5.1**   *P* **430**   *L* **36**   # **694**
jonathan thatcher   World Wide Packets

Comment Type   **E**   *Comment Status*   **R**   *TTO*
Wavelength; Spectral Width; and OMA are no longer needed in Table 52-6 since these are referenced in the Fibure 52-2. Text needs to be added to 52.4.1 to indicate that meeting the triple trade off curves is normative (shall statement). Description of what passes (above, below the lines...) is required.

SuggestedRemedy
See comment

Proposed Response   *Response Status*   **C**
REJECT. Overridden by other changes.

Cl **52**   *SC* **52.5.1**   *P* **430**   *L* **37**   # **201**
Dawe, Piers   Agilent

Comment Type   **T**   *Comment Status*   **R**
Is the spec line Trise/Tfall redundant? I think it is: the transmitter eye mask excludes too-slow transmitters. If we eliminate this line, we save testing costs and ease the transmitter requirement slightly. This LR/LW PMD is much less challenged by ISI than any other PMD except LX4/LW4 on SMF; assuming that the receiver electronics are similar for all PMDs, that easing should be OK. If we leave it, we have a transmitter requirement that is slightly tougher than SONET, which seems at odds with the objectives of the project. I would like to quantify these comments but the deadline looms...

SuggestedRemedy
Delete the line "Trise /Tfall (max, 20-80% response time) 40 ps"

Proposed Response   *Response Status*   **C**
REJECT.   Withdrawn

Cl **52**   *SC* **52.5.1**   *P* **430**   *L* **49**   # **195**
Dawe, Piers   Agilent

Comment Type   **T**   *Comment Status*   **A**   *RIN*
RIN12OMA at -130 dB/Hz is predicted to deliver 0.04 dB RIN penalty (tiny) yet demand -140 dB/Hz of "traditional" RIN at the spec min extinction ratio (may be expensive). This number could be relaxed slightly. We should discuss this when we have resolved the interferometric noise issue.

SuggestedRemedy
Change "-130" to "-125", "-127" or as decided.

Proposed Response   *Response Status*   **C**
ACCEPT IN PRINCIPLE. See #239.

Cl **52**   *SC* **52.5.1**   *P* **430**   *L* **51**   # **197**
Dawe, Piers   Agilent

Comment Type   **T**   *Comment Status*   **R**   *Spectral Width*
While we are familiar with calculating RMS Spectral Width, it is difficult to measure for really narrow widths and not the appropriate measure for DFBs. The industry standard full width, -20 dB spec may not be a sufficient condition but should not be a burden. To keep costs down we should follow standard practice.

SuggestedRemedy
Add table entry: FWHM width maximum 1 nm at -20 dB.

Proposed Response   *Response Status*   **C**
REJECT.   See #451.

Cl **52**   *SC* **52.5.1**   *P* **430**   *L* **51**   # **196**
Dawe, Piers   Agilent

Comment Type   **T**   *Comment Status*   **A**
The note "RMS Spectral Width is the standard deviation for a Gaussian distribution fit for a multimode laser spectrum." is tautologous (we were very tired when we wrote it!). Also, this LR/LW PMD must be single mode (or nearly so, if we can puzzle out how to specify that).

SuggestedRemedy
Replace with: "RMS Spectral Width is the standard deviation of the spectrum (see 1.4.238).

Proposed Response   *Response Status*   **C**
ACCEPT. Must still sort out singlemode characteristic of LR/LW.

Cl **52**　　*SC* **52.5.1**　　　　　*P* **430**　　*L* **6**　　　# **193**

Dawe, Piers　　　　　　　　　　　Agilent

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

Fig. 52-3: The LR/LW triple trade off curves cover the previous minimum OMA and below. Curves should also be shown for OMAs above the minimum (where wider spectral width may be allowable).

SuggestedRemedy

Show additional curves for representative higher OMAs.

Proposed Response　　　　*Response Status* **C**

REJECT.　This would be a significant technical change at this time, (and a very large increase in OMA is required to significantly increase the spectral width thereby making the lines of the curve blur together. With the use of the additional table they could however be separated). Note also this is exactly contrary to comment 192 from the same commenter. The commenter is however encouraged to re-submit this comment if he still believes this is a worthwhile broadening of the standard.

The PMD serial ad hoc will make a recommendation for D3.0.

Cl **52**　　*SC* **52.5.1**　　　　　*P* **430**　　*L* **6**　　　# **191**

Dawe, Piers　　　　　　　　　　　Agilent

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

Fig. 52-3: Are the LR/LW triple trade off curves in mA or mW? I would guess mW.

SuggestedRemedy

Check units, change if necessary.

Proposed Response　　　　*Response Status* **C**

ACCEPT.

Cl **52**　　*SC* **52.5.1**　　　　　*P* **430**　　*L* **6**　　　# **189**

Dawe, Piers　　　　　　　　　　　Agilent

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

Fig. 52-3: The LR/LW triple trade off curves seem to have been prepared with an unallocated margin of zero while the previous "box" wavelength spec. had a margin of ~0.6 dB and we didn't vote to change it, i.e. we didn't reduce the Tx power or other such change.

SuggestedRemedy

Rebuild triple trade off information with current unallocated margin (presently 0.61 dB).

Proposed Response　　　　*Response Status* **C**

ACCEPT IN PRINCIPLE.　Global change to TTO curves.

Cl **52**　　*SC* **52.5.1**　　　　　*P* **430**　　*L* **6**　　　# **192**

Dawe, Piers　　　　　　　　　　　Agilent

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

Fig. 52-3: LR/LW triple trade off curves may be being calculated out of the range of the model. The spreadsheet assumes a single mode (no MPN). I don't know what a "single mode 1 nm wide" means or whether the calculation would be valid if you had a laser which generated one. If you aren't truly single mode, do you have to turn the MPN on? I know we want to open the door to innovation but our fisrt priority is to write down something valid in itself.

SuggestedRemedy

State that single mode is a requirement. Cap the allowable width at 0.5 nm RMS (this is still probably too wide).

Proposed Response　　　　*Response Status* **C**

ACCEPT IN PRINCIPLE.　Change tables, keep graphs (they are informative). 1 nm cap is chosen.

Cl **52**　　*SC* **52.5.1**　　　　　*P* **430**　　*L* **6**　　　# **194**

Dawe, Piers　　　　　　　　　　　Agilent

Comment Type **T**　　*Comment Status* **R**　　　　　*MIN SPECTRAL*

Fig. 52-3: The LR/LW triple trade off curves go down to very small spectral widths. Here, another assumption in the model, that the spectrum is time-invariant, breaks down. For example, classical AM radio theory says a 10 GHz signal would have sidebands giving a spectral half-width (standard deviation) of $1310*1e10/(3e8/1310e-9) = 0.057$ nm if fully modulated. Calculations with answers less than a few times that are therefore suspect; results <0.057 nm are very suspect.

SuggestedRemedy

Delete any parts of curves purporting to show that low powers with spectral widths less than 0.2 nm are expected to deliver a compliant PMD. We don't know whether they will.

Proposed Response　　　　*Response Status* **C**

REJECT. The committee respectfully requests that the commenter resubmit this comment against D3.0. More data is requested

11 y
2 n
3 a.

TYPE: TR/technical required T/technical E/editorial　COMMENT STATUS: D/dispatched A/accepted R/rejected　SORT ORDER: Clause, Page, Line, Subclause　　Page 105 of 144

RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn　　　　　　　　　　　　　　　　　　　　　　　　　　*Cl* **52**　　*SC* **52.5.1**

Cl **52**   *SC* **52.5.1**   *P* **430**   *L* **6**   # **190**

Dawe, Piers   Agilent

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

Fig. 52-3: The LR/LW triple trade off curves seem go in 0.25 dB steps. It would benefit the reader to say so.

SuggestedRemedy

Whether in text or in the figure, state that the curves go in 0.25 dB steps.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Other changes will override this.

Cl **52**   *SC* **52.5.2**   *P* **430**   *L* **34**   # **698**

jonathan thatcher   World Wide Packets

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

Recommend changing editor's note

SuggestedRemedy

Change to:
"Interferometric noise is being studied in detail by an ad hoc of the 802.3ae Task Force. There is a possibility that the 12 dB return loss value in table 52-11 will be changed to a value closer to 20 dB during working group ballot."

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **52**   *SC* **52.5.2**   *P* **431**   *L* **10**   # **690**

jonathan thatcher   World Wide Packets

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

Remove word "(nominal)"; this would only be used if the range were not explicitly specified, which it is.

SuggestedRemedy

see comment

Proposed Response   *Response Status* **C**

REJECT. See #687

Cl **52**   *SC* **52.5.2**   *P* **431**   *L* **11-14**   # **372**

Geoffrey Garner   Lucent Technologies

Comment Type **T**   *Comment Status* **R**   *20 ppm*

See Comment for Subclause 52.4.1, p.427, lines 37 - 40 (Table 52-6)

SuggestedRemedy

Insert in Column 1 of Table 52-11 on p. 431, between lines 13 and 14:
10GBASE-SW (optional; needed if transport over the Optical Transport Network via 10 Gbit/s optical Channel is desired; see ITU-T Recommendation G.709)
Insert in Column 2 of Table 52-11 on p. 431, between lines 13 and 14:
9.95328 +/- 20 ppm

Proposed Response   *Response Status* **C**

REJECT. See # 369

Cl **52**   *SC* **52.5.2**   *P* **431**   *L* **14**   # **500**

Fröjdh, Krister   Optillion

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

-With the current minimum return loss for the receiver of 12 dB there will be a large penalty from interferometric noise which is not included in the link budget. The penalty must include many effects as: effect from several connectors, base-line wander and effect of combination with RIN.

-For short links the receiver will operate at a very low extinction ratio because of the penalty from interferometric noise which could be a serious problem for many trans-impedance amplifier. If we want to keep this we need to design a new overload test were this regime is tested.

-Running 10 Gbit/s operation with DFB lasers combined with this return loss has little or none field experience. We take a considerable risk when using a from a link perspective inferior solution based on a high return loss.

-There is an economical argument that 12 dB would be the most economical solution. However this most probably exclude solutions without isolators. This will in a longer perspective result in a cost disadvantage compared to ITU equipment which specify -27 dB. This make it very difficult to reuse SONET/SDH components for 10GE.

- 1300 nm could easily interoperate with 1550 nm. However, as the return loss spec differs, this will be a serious obstacle.

SuggestedRemedy

Change the return loss (min) to -26 dB (or at least 20 dB)

Proposed Response   *Response Status* **C**

REJECT. Presentations given and vote taken to change only ER to 4 dB.

Cl **52**   *SC* **52.5.3**   *P* **431**   *L* **51**   # **63**

Pepeljugoski, Petar   IBM

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

The interferometric noise is not taken into account in the link penalties.

SuggestedRemedy

Add the interferometric noise penalty to the link penalties. Additionally, add 12 dB return loss requirement for the transmitter in Table 52-10.

Proposed Response   *Response Status* **C**

ACCEPT. Note: 10GE is the first standard with a return loss specification for the transmitter..

Cl **52**   *SC* **52.5.3**   *P* **432**   *L* **5**   # **198**

Dawe, Piers   Agilent

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

The note "A wavelength of 1265 nm is used to calculate channel insertion loss, link power penalties, and unallocated margin." needs refinement to align with triple trade off methodology.The unallocated margin is the same at most wavelengths.We may not be able to give figures which are both informative and truthful at "nominal" (1310 nm) or at "worst" 1265 nm).

SuggestedRemedy

For the present, go back to saying "A wavelength of 1290 nm is used to calculate channel insertion loss, link power penalties, and unallocated margin." It may be anachronistic, but it's the case.

Proposed Response   *Response Status* **C**

PROPOSED REJECT. Piers, thanks for the comment. Can we align the TTO activities at the next meeting, and then can you please resubmit this comment with any change to the wavelength that this realignment entails.

Cl **52**   *SC* **52.52-6,7,10,11,15**   *P*   *L*   # **415**

Ohlen, Peter   Optillion

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

It is confusing to have the dB value on OMA/2.

SuggestedRemedy

Change the dB values from OMA/2 to OMA:
p. 427:46   -7.48 --> -4.48
p. 428:26   -14.98 --> -11.98
p. 428:30   -9.58 --> -6.58, -10.48 --> -7.48
p. 430:43   -6.23 --> -3.23
p. 431:17   -16.23 --> -13.23
p. 431:22   -13.68 --> -11.68
p. 434:20   -19.39 --> -16.39
p. 434:24   -14.80 --> -11.80
For each of these changes change the corresponding OMA/2 to OMA.

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **52**   *SC* **52.6**   *P* **432**   *L* **12**   # **199**

Dawe, Piers   Agilent

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

Grammar: "The operating range ... are defined...."

SuggestedRemedy

Change "are" to "is".

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. See #19

Cl **52**   *SC* **52.6**   *P* **432**   *L* **12**   # **19**

Stoltz, Mario   ChipIng.de, an Intel co

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

"...operating range (...) are defined..."

SuggestedRemedy

Change to "...is defined..."

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **52**   *SC* **52.6**   *P* **432**   *L* **14**   # **439**
Ohlen, Peter   Optillion

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

There has been some confusion about the normative nature of 40 km, and how it applies. I think the text is correct in its present state, but maybe not completely clear. It could be helpful for a reader to explain all 40 km single-mode links are not supported even though they use type B1 SMF.

SuggestedRemedy

Insert text in the beginning of 52.6 explaining that for long links premium cable performance is necessary to reach the maximum channel insertion loss of 13 dB.Also, it could be helpful to add a similar comment in section 52.13.1

Proposed Response   *Response Status*   **C**

REJECT. I think we need to word this in committee due to the sensitivity of the "normative" nature of the 40 km link.

Cl **52**   *SC* **52.6**   *P* **432**   *L* **16**   # **269**
Christensen, Benny   Intel / GIGA

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

additional 'meter' should be deleted

SuggestedRemedy

delete 'meter'

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **52**   *SC* **52.6**   *P* **432**   *L* **32**   # **270**
Christensen, Benny   Intel / GIGA

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

unclear wordings. I guess that 'channel' or 'link'(as defined in figure 52-11 or figure 52-1) should be inserted in second sentence.The word 'dynamic' is chosen to show that this is no a destructive overload, but merely may cause signal distortion in the receiver due to saturation and nonlinearities of the circuits.

SuggestedRemedy

insert: ....ER/EW 'channel / (link) ' shall ..... dB + 'in order to avoid dynamic overload of the receiver.'or 'in order to match the receivers dynamic sensitivity range'

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE. See #. Alternately handled by another comment.

Cl **52**   *SC* **52.6.1**   *P* **432**   *L* **31**   # **699**
jonathan thatcher   World Wide Packets

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

Text is unclear. Redundant "shall" statements further confuse.

SuggestedRemedy

Change paragraph to:
"The 10GBASE-ER/EW channel shall have an attenuation between 7 and 13 dB. If required, an attenuator can be added comply with this specification. The ideal attenuation value is 9.5 dB. Figure 52-4 graphically shows the compliant region.

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.   Minor wordsmithing applied.

Cl **52**   *SC* **52.6.1**   *P* **432**   *L* **31**   # **240**
Dudek, Mike T   Cielo Communications

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

The second sentence does not make sense.

SuggestedRemedy

Insert "including this attenuator" between "attenuation" and "between"

Proposed Response   *Response Status*   **C**

REJECT.   See #699

Cl **52**   *SC* **52.6.1**   *P* **432**   *L* **31**   # **200**
Dawe, Piers   Agilent

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

Missing word in "The 10GBASE-ER/EW shall have ...."

SuggestedRemedy

Insert "link" (I think. Could debate if it should be "channel".)

Proposed Response   *Response Status*   **C**

REJECT. See #699

Cl **52**   *SC* **52.6.1**   *P* **432**   *L* **34**   # **701**

jonathan thatcher   World Wide Packets

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

Clean up Figure 52-4

SuggestedRemedy

Label compliant area (between attenuation min and attenuation max lines) as "compliant"
Label non-compliant areas as "non-compliant"
Place a verticle line at 7 dB Link Loss and label the area to the left with "additional attenuation required"
Remove other verticle and horizontal lines
Make the figure larger.

Proposed Response   *Response Status* **C**

REJECT.   The Editor respectfully requests that this comment be re-submitted in the next ballot cycle as it does not add to the technical completeness of this draft.

Cl **52**   *SC* **52.6.1**   *P* **432**   *L* **51**   # **700**

jonathan thatcher   World Wide Packets

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

The title for Figure 52-4 should include the word "(informative)"

SuggestedRemedy

Add

Proposed Response   *Response Status* **C**

PROPOSED ACCEPT.

Cl **52**   *SC* **52.6.2**   *P* **433**   *L* **10**   # **691**

jonathan thatcher   World Wide Packets

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

Remove word "(nominal)"; this would only be used if the range were not explicitly specified, which it is.

SuggestedRemedy

see comment

Proposed Response   *Response Status* **C**

PROPOSED REJECT. See #687

Cl **52**   *SC* **52.6.2**   *P* **433**   *L* **11-14**   # **373**

Geoffrey Garner   Lucent Technologies

Comment Type **T**   *Comment Status* **R**   *20 ppm*

See Comment for Subclause 52.4.1, p.427, lines 37 - 40 (Table 52-6)

SuggestedRemedy

Insert in Column 1 of Table 52-14 on p. 433, between lines 13 and 14:
10GBASE-SW (optional; needed if transport over the Optical Transport Network via 10 Gbit/s optical Channel is desired; see ITU-T Recommendation G.709)
Insert in Column 2 of Table 52-14 on p. 433, between lines 13 and 14:9.95328 +/- 20 ppm

Proposed Response   *Response Status* **C**

REJECT.   See #369

Cl **52**   *SC* **52.6.2**   *P* **433**   *L* **36**   # **489**

Dawe, Piers   Agilent

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

Editor says "Comment was submitted and accepted to change wavelength range, but no alternate values were provided." The change, to align with ITU-T's C-band, was thought to be a no-op, we had the right values already. Confirmation from a knowledgeable person would be welcome, of course.

SuggestedRemedy

No action needed?

Proposed Response   *Response Status* **C**

PROPOSED ACCEPT.

Cl **52**   *SC* **52.6.3**   *P* **434**   *L* **10**   # **692**

jonathan thatcher   World Wide Packets

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

Remove word "(nominal)"; this would only be used if the range were not explicitly specified, which it is.

SuggestedRemedy

see comment

Proposed Response   *Response Status* **C**

PROPOSED REJECT. See #687

Cl **52**   *SC* **52.6.3**   *P* **434**   *L* **11-14**   # **374**

Geoffrey Garner   Lucent Technologies

Comment Type **T**   *Comment Status* **R**   *20 ppm*

See Comment for Subclause 52.4.1, p.427, lines 37 - 40 (Table 52-6)

SuggestedRemedy

Insert in Column 1 of Table 52-15 on p. 434, between lines 13 and 14:
10GBASE-SW (optional; needed if transport over the Optical Transport Network via 10 Gbit/s optical Channel is desired; see ITU-T Recommendation G.709)
Insert in Column 2 of Table 52-15 on p. 434, between lines 13 and 14:
9.95328 +/- 20 ppm

Proposed Response   *Response Status* **C**

REJECT.   See # 369

Cl **52**   *SC* **52.6.3**   *P* **434**   *L* **27**   # **702**

jonathan thatcher   World Wide Packets

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

Rx electrical 3dB upper cutoff is not sufficient; we can't allow meeting the 3dB cutoff frequency and then have a pole that modifies the response.

SuggestedRemedy

There needs to be a specification that the Rx attenuation vs frequency be below a prescribed curve such as a simple, 1st order, filter with at 3dB cutoff of 12.3 GHz.

Proposed Response   *Response Status* **C**

PROPOSED REJECT. This is a technical comment, and needs discussion in committee to resolve. Please resubmit.

Cl **52**   *SC* **52.6.4**   *P* **435**   *L* **1**   # **703**

jonathan thatcher   World Wide Packets

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

Table 52-16 represents a worst case, maximum length link power budget and penalties. Link penalties are no longer just used for budget calculations.

SuggestedRemedy

Change title to include "maximum length"
Change text in footnote from "Link penalties are used...." to "Link penalties are built into the transmitter specifications by testing the transceiver with a maximum dispersion fiber."

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **52**   *SC* **52.7**   *P* **435**   *L*   # **440**

Ohlen, Peter   Optillion

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

There are no methods or references to other standards describing DCD measurements.

SuggestedRemedy

Insert references to 52.8.10 for DJ measurement and a suitable reference for DCD measurement.

Proposed Response   *Response Status* **C**

REJECT. Withdrawn.

Cl **52**   *SC* **52.7**   *P* **435**   *L* **31**   # **202**

Dawe, Piers   Agilent

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

Didn't we sort out the jitter low frequency corner last time?

SuggestedRemedy

"above 6 MHz" I think it was.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.   Change to 4 MHz.

Cl **52**   *SC* **52.7**   *P* **435**   *L* **31**   # **20**

Stoltz, Mario   ChipIng.de, an Intel co

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

Awkward sentence beginning.

SuggestedRemedy

Change to "The numbers in Table 52-17..."

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **52**   *SC* **52.7**   *P* **435**   *L* **31**   # **418**

Ohlen, Peter   Optillion

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

The jitter frequency is missing.

SuggestedRemedy

Insert 6 MHz or 4 MHz, whichever is more suitable.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. 4 MHz chosen.

Cl **52**　　　*SC* **52.7**　　　　　　*P* **435**　　　*L* **31**　　　　# **21**

Stoltz, Mario　　　　　　　　ChipIng.de, an Intel co

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

"above kHz" is unclear.

SuggestedRemedy

Change to "below 1 MHz" (supposing that this is an editorial problem).

Proposed Response　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.　I don't think this is a typo or editorial problem, but rather a missing value. Alternately handled in another comment

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Cl **52**　　　*SC* **52.7**　　　　　　*P* **435**　　　*L* **32**　　　　# **273**

Christensen, Benny　　　　　　Intel / GIGA

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

RX PLL bandwidth 4 MHz (from SDH / SONET) seems adequate.

SuggestedRemedy

(above 4 MHz)

Proposed Response　　　*Response Status*　**C**

ACCEPT.　4 chosen.

Cl **52**　　　*SC* **52.7**　　　　　　*P* **435**　　　*L* **54**　　　　# **704**

jonathan thatcher　　　　　　World Wide Packets

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

Change line from "... between 2 and 5 meters in length." to "... between 2 and 5 meters in length, unless otherwise specified."

SuggestedRemedy

see comment

Proposed Response　　　*Response Status*　**C**

ACCEPT.

Cl **52**　　　*SC* **52.8.1**　　　　　*P* **436**　　　*L* **4**　　　　# **450**

Ohlen, Peter　　　　　　　　Optillion

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

The TIA/EIA-455-127 standard is concerned with RMS spectral with and center wavelength measurements of MULTI-MODE laser diodes. All PMD types in this standard use SINGLE-MODE lasers and a standard describing measurements on single-mode lasers should be preferable be referenced or as a last resort written here.

SuggestedRemedy

(1) Find a good standard to reference
or
(2) Make an editors box containing the comment above.

Proposed Response　　　*Response Status*　**C**

REJECT.　　Needs suitable remedy (reference).　The 850 nm lasers may not be truly single mode.

Cl **52**　　　*SC* **52.8.1**　　　　　*P* **436**　　　*L* **5**　　　　# **419**

Ohlen, Peter　　　　　　　　Optillion

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

It should be allowed to measure the center wavelength and the spectrum with an appropriate test pattern like PRBS or other patterns used to simulate traffic.

SuggestedRemedy

add "or a suitable test pattern" on line 5.

Proposed Response　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.　Ends with "valid 10GBASE-SR/LR/ER/SW/LW/EW signal, OC-192 signal, STM-64 signal or another representative test pattern".

Cl **52**   *SC* **52.8.1**   *P* **436**   *L* **5**   *#* **490**

Dawe, Piers   Agilent

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

As last time:
415 Cl 52 SC 52.7.1 P 371 L 52
Comment Type T
To measure spectral width, there is no need for a validly coded 10G Ethernet signal. A PRBS
will do.
SuggestedRemedy
change to "... modulated conditions using an appropriate PRBS or a valid 10GBASE-
SR/LR/ER/SW/LW/EW or OC-192 or STM-64 signal.Check standards for choice of PRBS.Add
PRBS to Abbreviations list.
Proposed Response
ACCEPT IN PRINCIPLE. Need to get appropriate text and references.

SuggestedRemedy

change to "... modulated conditions using an appropriate PRBS or a valid 10GBASE-
SR/LR/ER/SW/LW/EW or OC-192 or STM-64 signal. Check standards for choice of PRBS
(try ITU-T O.151). Add PRBS to Abbreviations list, clause 1.4.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.   See #419.

Cl **52**   *SC* **52.8.10**   *P* **441**   *L* **23**   *#* **249**

Dudek, Mike T   Cielo Communications

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

Using the mixed frequency test pattern and a scope is not appropriate for measuring Dj in these
systems.

SuggestedRemedy

Replace this section with "Deterministic jitter should be measured using the BERT scan, or
Time Interval Analysis methods of ANSI Fibre Channel Methodologies for Jitter Specification
Appendix D"

Proposed Response   *Response Status* **C**

REJECT.

Cl **52**   *SC* **52.8.10**   *P* **441**   *L* **29**   *#* **715**

jonathan thatcher   World Wide Packets

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

1/20th clock has nothing to do with 10GBASE_R/W

SuggestedRemedy

Remove.

Proposed Response   *Response Status* **C**

REJECT. Remove the whole sentence or change the signaling speed?

Cl **52**   *SC* **52.8.11**   *P* **441**   *L* **37**   *#* **427**

Ohlen, Peter   Optillion

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

-12 not in superscript

SuggestedRemedy

Put -12 in superscript

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **52**   *SC* **52.8.11**   *P* **441**   *L* **44**   *#* **443**

Ohlen, Peter   Optillion

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

In the last ballot comment #459 was ACCEPTed and the PRBS 2^23-1 test patterns is to be
used as pattern for the conformance signal.

SuggestedRemedy

Insert the 2^23-1 PRBS as pattern for the conformance test signal.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.   Choose 2e31-1 pattern defined in c49,50. (chief editor: remove
49.X.X and 50.X.X, add CID acronym)

Cl **52**   *SC* **52.8.11**   *P* **441**   *L* **48**   *#* **444**

Ohlen, Peter   Optillion

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

A signal is not characterised by a sensitivity, receivers are.

SuggestedRemedy

Delete item (3) and changep.441:37 "a BER of 10-12"
"the stressed receive sensitivity requirements of subclause 52.8.8"

Proposed Response   *Response Status* **C**

REJECT. This section is under review and this comment will be alternately handled by the work
of the jitter ad hoc.

Cl **52**   *SC* **52.8.11**   *P* **441**   *L* **52**   *#* **716**

jonathan thatcher   World Wide Packets

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

Pattern in line 7 does not have adequate transition density.

SuggestedRemedy

Add 010101... to the end of the pattern sufficient to ensure transition density. These can be
ignored during the test....

Proposed Response   *Response Status* **C**

REJECT.   See #445.

Cl **52** *SC* **52.8.11** *P* **441** *L* **52** # **445**
Ohlen, Peter Optillion

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

The same pattern should be used to measure the vertical eye opening and the stressed sensitivity (presently the PRBS 2^23-1). If this is not done, you calibrate your measurement apparatus with one signal and use it with another. Whichever pattern is more stressful will depend on the transmitter and the receiver that are used in the test.

SuggestedRemedy

replace "as measured while running the ...." with"as measured with a repeating PRBS 2^23-1 pattern"

Proposed Response *Response Status* **C**
ACCEPT.

Cl **52** *SC* **52.8.11** *P* **441** *L* **53** # **284**
Christensen, Benny Intel / GIGA

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

65 '0','10', 65 '1','01' repeated is a pattern unsuitable. I don't think any CDR can withstand such a low transition density of 4%. Though it is DC balanced it does not have a decent transition density (40 - 60 % long term average).

SuggestedRemedy

Pattern needs to be well behaved regarding DC balance and long term /time transition density.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE. See #445.

Cl **52** *SC* **52.8.11** *P* **441** *L* **54** # **447**
Ohlen, Peter Optillion

Comment Type **T** *Comment Status* **R** *JITTER*
Item (8) in the list is not defined.

SuggestedRemedy

Change "XXX" to the section it should be pointing to. Alternatively define the frequency and amplitude of the sinusoidal jitter here.

Proposed Response *Response Status* **C**
REJECT. See #444.

Cl **52** *SC* **52.8.11** *P* **442** *L* **31** # **267**
Christensen, Benny Intel / GIGA

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

DCD of 65 ps ??? 6.5 ps ? (or old unscaled FC value?)If 6.5 ps it may be difficult to measure with the oscilloscope, an oscilloscope tends to have around 5 ps pp intrinsic trigger jitter

SuggestedRemedy

Needs refinement

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE. See #250.

Cl **52** *SC* **52.8.11** *P* **442** *L* **32** # **250**
Dudek, Mike T Cielo Communications

Comment Type **T** *Comment Status* **A** *DCD*
Incoorect value of DCD

SuggestedRemedy

Change 65ps to 6ps.

Proposed Response *Response Status* **C**
ACCEPT.

Cl **52** *SC* **52.8.11** *P* **442** *L* **32** # **717**
jonathan thatcher World Wide Packets

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

Reference to 65ps is wrong (left over) and redundant with the information on the previous page. Remove this and clean up redundancies.

SuggestedRemedy

see comment

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE. Chose 6 ps.

Cl **52** *SC* **52.8.11** *P* **442** *L* **32** # **428**
Ohlen, Peter Optillion

Comment Type **T** *Comment Status* **A** *DCD*
The duty cycle distorsion for 10 Gb should be 6ps not 65 ps.

SuggestedRemedy

Change 65ps to 6ps

Proposed Response *Response Status* **C**
ACCEPT. Identical to #250.

Cl **52**   *SC* **52.8.11**   *P* **443**   *L* **34**   *#* **286**

Christensen, Benny   Intel / GIGA

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

the penalty is an optical power penalty (ie. 10 * log10). Can be explicitly stated by adding the word: optical

SuggestedRemedy

Vertical eye closure optical penalty [dBo]

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.   Put word optical in.

Cl **52**   *SC* **52.8.11**   *P* **444**   *L* **4**   *#* **458**

Patterson, Russell   Picolight

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

States that horizontal eye closure due to DCD component of DJ should be no less than 65 ps. This looks like it was missed edit carried over from 1.25 gig

SuggestedRemedy

Change wording to say
"The horizontal eye closure (reduction of pulse width) caused by the duty cycle distortion (DCD) component of DJ shall be no less than that specified in Table 52-17"

Proposed Response   *Response Status*   **C**

REJECT.   The section that the comment refers to does not say anything about 65 ps. The issue that the commenter probably refers to is handled by other comments.

Cl **52**   *SC* **52.8.12**   *P* **444**   *L* **23**   *#* **718**

jonathan thatcher   World Wide Packets

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

This editor's note is not strictly correct. We may choose to not specify how the combining is done (e.g. optical or electrical).

SuggestedRemedy

Remove

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **52**   *SC* **52.8.12**   *P* **445**   *L* **1**   *#* **719**

jonathan thatcher   World Wide Packets

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

Reference should be to Fibure 52-10, not 38-6.

SuggestedRemedy

Search for all references to clause 38, 36, etc. These are probably wrong.

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **52**   *SC* **52.8.13**   *P* **445**   *L*   *#* **430**

Ohlen, Peter   Optillion

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

Figure C needs to be added.

SuggestedRemedy

Insert figure. Sent to editor separately. Change reference on p.445:17 & p.445:30 & p.445:41.

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **52**   *SC* **52.8.13**   *P* **445**   *L* **14**   *#* **720**

jonathan thatcher   World Wide Packets

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

This text has not been updated to support the use of a golden fiber in the Tx test for LW/RW.

SuggestedRemedy

Change title to something like: Creation of golden fiber for use in...."

Modify the text to describe the creation of the golden fiber using this general methodology (iterate till right).

Add/change text to following:

Measure the nominal sensitivity of the golden reciever (S) using steps 1 through 3. Use a short 2 to 5 meter jumper (instead of the test fiber)."
Measure the the test fiber using steps 1 through 4. If the fiber does not have the specified amount of dispersion, add or remove fiber until the specification is acheived.

Remove the statement in line 37: "Otherwise the dispersion penalty is zero, DP = 0).

In step 3. change dB to dBm.

Proposed Response   *Response Status*   **C**

REJECT.   Appreciate the editorial license, but need some more specifics.

Cl **52**   *SC* **52.8.13**   *P* **445-6**   *L*   # **496**

Dawe, Piers   Agilent

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

Too much gold. Too prescriptive. Could be cost reduced.

SuggestedRemedy

Rename the apparatus to:
Transmitter under test (DUT), measuring transmitter, measuring receiver, dispersing fibre.
Introduce measuring transmitter at start of subclause. Be explicit: say that you measure
sensitivity of the same reeceiver:
1. With (which?) transmitter and short fibre
2. With DUT and ~>40km fibre. The diagrams will help here.
Determine the length of fibre once only for whole 1550 band by measuring dispersion at nominal
(1550 nm?). Fibre people, how much error will this simplification bring, so we can margin it?
Measuring sensitivity by "Adjust the attenuation of the optical attenuator to have a BER of 1e-
12." is too slow. You should allow the extrapolation method of EIA/TIA-526-5 (OSFTP-5) for
example.
Calibration at the wavelength of the transmitter under test is not necessary: you only need a
correction factor if the two transmitters differ in wavelength.
Replace "shall be made with a 2^23-1 PRBS pattern" with "should be made with a long PRBS
(2^23-1 is recommended) or a valid 10GBASE-SR/LR/ER/SW/LW/EW or OC-192 or STM-64
signal"

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE. This comments contains several sub-comments which are
addressed individually below.
1. "Rename the apparatus". Accept in principle. Use: Transmitter under test
(DUT), reference transmitter, reference receiver, dispersing fiber.
2. Introduce measuring transmitter at start of subclause. Accept.
3. Be explicit: say that you measure sensitivity of the same reeceiver: (1) With
the reference transmitter and short fibre (2) With DUT and ~>40km fibre. The
diagrams will help here. Accept in principle see comment #720.
4. (1e-12 vs. extrapolation). Reject. The measurement method should be
specified at 1e-12, then it is at the risk of each vendor to use any clever
extrapolation method that they know will guarantee a proper BER with their
components. Stranges thing do happen when you go from 1e-9 to 1e-12.
5. (Fiber length) Reject. Vendors are free to determine the fiber length in any
way they know as long as the requirement on the dispersion is fulfilled. They
can determine it by measuring the dispersion at 1550nm and adding an extra
margin, or make a more detailed measurement and not add any extra margin
for measaurement uncertainties.
6. (Calibration) Reject. The correction factor or calibration is needed. The
wording should be consistent with other subclauses with the same intent.
Currently "calibration" is used.
7. (Test pattern) AIP. The test patterns are being defined by the jitter ad hoc.

Cl **52**   *SC* **52.8.13**   *P* **446**   *L* **1**   # **431**

Ohlen, Peter   Optillion

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

The bandwidth of the transmitter is not the critical figure.

SuggestedRemedy

Change item (1) to:
The rise/fall times shall be less than 30ps.

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE. Change "shall" to "should": "The rise/fall times should be less than
30ps."

Cl **52**   *SC* **52.8.13**   *P* **446**   *L* **1**   # **721**

jonathan thatcher   World Wide Packets

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

References 52.7.5 and 52.7.10 appear to be in error

SuggestedRemedy

Fix

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE. I think they both refer to the transmit eye measurement (mask test).

Cl **52**   *SC* **52.8.14**   *P* **446**   *L*   # **433**

Ohlen, Peter   Optillion

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

Figures A & B are missing.

SuggestedRemedy

Insert figure B&C (sent to editor separately), and change references on line 16, 29, 32, 35.

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **52**   *SC* **52.8.14**   *P* **446**   *L* **11**   # **252**

Dudek, Mike T   Cielo Communications

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

Section 52.8.14 is a duplicate of section 52.8.4

SuggestedRemedy

Delete Section 52.8.14

Proposed Response   *Response Status*   **C**

REJECT. Take second section.

Cl **52**   *SC* **52.8.14**   *P* **446**   *L* **12**   *#* **497**
Dawe, Piers   Agilent

Comment Type   **T**   *Comment Status*   **A**
A unique test pattern allowed for amplitude measurement is unnecessarily restrictive.

SuggestedRemedy
Change
"shall be measured for a node transmitting a repeating "00001111" pattern corresponding to a
1.25 GHz (10GBASE-EW) or 1.29 GHz (10GBASE-ER) square wave."
to
"should be measured using a very short, nonvarying pattern to achieve an accurate
measurement. A repeating "00001111" pattern, corresponding to a 1.25 GHz (10GBASE-EW)
or 1.29 GHz (10GBASE-ER) square wave, is recommended."

Proposed Response   *Response Status*   **C**
ACCEPT IN PRINCIPLE.   Change "shall" to "should".

Cl **52**   *SC* **52.8.14**   *P* **446**   *L* **12**   *#* **432**
Ohlen, Peter   Optillion

Comment Type   **E**   *Comment Status*   **A**
OMA is illustrated in a figure.

SuggestedRemedy
Insert ",A_N in figure 52-8" at the end of the last sentence.

Proposed Response   *Response Status*   **C**
ACCEPT.

Cl **52**   *SC* **52.8.14**   *P* **446**   *L* **14**   *#* **722**
jonathan thatcher   World Wide Packets

Comment Type   **E**   *Comment Status*   **A**
OMA is used for all 10GBASE_Serial PMDs.

SuggestedRemedy
Change 10GBASE-EW to 10GBASE-W and 10GBASE-ER to 10GBASE-R.

Proposed Response   *Response Status*   **C**
ACCEPT.

Cl **52**   *SC* **52.8.14**   *P* **446**   *L* **21**   *#* **723**
jonathan thatcher   World Wide Packets

Comment Type   **E**   *Comment Status*   **A**
"Then" should be "The"

SuggestedRemedy
fix

Proposed Response   *Response Status*   **C**
ACCEPT.

Cl **52**   *SC* **52.8.14**   *P* **446**   *L* **40**   *#* **724**
jonathan thatcher   World Wide Packets

Comment Type   **E**   *Comment Status*   **A**
E should be ER or E/R. Remove braket at then of line.

SuggestedRemedy
fix

Proposed Response   *Response Status*   **C**
ACCEPT.

Cl **52**   *SC* **52.8.14**   *P* **446**   *L* **40**   *#* **448**
Ohlen, Peter   Optillion

Comment Type   **T**   *Comment Status*   **A**
The relation between OMA, ER and Paverage hold when the eye is symmetric. Asymmetries in
the eye will introduce an error in this relation.

SuggestedRemedy
Add the following comment: "It should be noted that an asymmetric optical eye will make this
relation less accurate. If this alternative method is used, care should be taken to ensure
sufficient accuracy".Note: The same comment applies to section 52.8.4 and should be inserted
there if section 52.8.11 is removed. (Currently there are two almost identical sections describing
OMA measurements.)

Proposed Response   *Response Status*   **C**
ACCEPT.

Cl **52**   *SC* **52.8.2**   *P* **436**   *L* **10**   **#** 276

Christensen, Benny   Intel / GIGA

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

2^23-1 PRBS mentioned several times in this clause. Actually, 2^31-1 is recommended /used for 10 G device testing in order to stress/ensure sufficient low frequency AC coupling in circuits.

SuggestedRemedy

For optical power measurement any PRBS (or other sequence with 50% transition density) will work. PRBS length need not be specified.

Proposed Response   *Response Status*   **C**

REJECT.   There is actually no requirement to use the PRBS-23 pattern. Indicate that the signal should be a modulated signal with 50% mark ratio. P802.3ae approved the creation of a pattern ad hoc to recommend a different pattern than the one specified.

Cl **52**   *SC* **52.8.2**   *P* **436**   *L* **7**   **#** 420

Ohlen, Peter   Optillion

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

With the introduction of OMA it should be made clear where average power and OMA is measure.

SuggestedRemedy

Insert "agerage" in the title of 52.8.2 and in the first sentence.

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE. Changed "agerage" (mad senior citizens?) to "average".

Cl **52**   *SC* **52.8.3**   *P* **436**   *L* **19**   **#** 441

Ohlen, Peter   Optillion

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

I don't see any good reason why extinction ratio is measured with worst-case reflections. Unless there is a really good reason I think it should be removed.

SuggestedRemedy

Delete "with worst case reflections"

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **52**   *SC* **52.8.3**   *P* **436**   *L* **22**   **#** 705

jonathan thatcher   World Wide Packets

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

Also line 38 under 52.8.4
There is no method currently perscribed for creating such patterns.

SuggestedRemedy

Either:
1. Have clauses 49 and 50 add a method to create the needed patterns, or
2. Create a procedure that works with the existing test patterns.

Proposed Response   *Response Status*   **C**

REJECT.   Section removed

Cl **52**   *SC* **52.8.4**   *P* **436**   *L* **26**   **#** 421

Ohlen, Peter   Optillion

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

Currently there are 2 paragraphs specifying how to measure OMA which are very similar. I have a preference for 52.8.14 because it describes a test procedure that can be made on a complete module, whereas 52.8.4 describes a test which includes a signal generator.

SuggestedRemedy

Delete paragraph 52.8.4.

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE. We choose the second OMA procedure.

Cl **52**   *SC* **52.8.4**   *P* **436**   *L* **31-38**   **#** 22

Stoltz, Mario   ChipIng.de, an Intel co

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

Stating the values "5000 MHz" and "1000 MHz" (2 occurrences each) does not comply with ANSI/IEEE 268-1992 (Standard for Metric Practice) Cls. 3.2.2.

SuggestedRemedy

Change to "5 GHz" and "1 GHz", respectively.

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **52**　　*SC* **52.8.4**　　　　　*P* **436**　　*L* **32-38**　　# **245**

Dudek, Mike T　　　　　　　　　Cielo Communications

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

It would be better to use the same pattern as used for extinction ratio

SuggestedRemedy

In both lines 32 and 38 change "1000MHz square wave" to "repeating sequence consisting of 4 logical zeros (light off) followed by 4 logical ones (lignt off)

Proposed Response　　　*Response Status*　**C**

REJECT. Withdrawn.

Cl **52**　　*SC* **52.8.4**　　　　　*P* **436**　　*L* **36**　　# **24**

Stoltz, Mario　　　　　　　　　ChipIng.de, an Intel co

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

Usage of "Baudrate" at least doubtful. Baud is a unit for bitrate.

SuggestedRemedy

Change to "bitrate".

Proposed Response　　　*Response Status*　**C**

ACCEPT.

Cl **52**　　*SC* **52.8.4**　　　　　*P* **436**　　*L* **36**　　# **23**

Stoltz, Mario　　　　　　　　　ChipIng.de, an Intel co

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

Awkward formulation "...0.75 Baudrate"

SuggestedRemedy

Change to "...0.75 of the respective ..."

Proposed Response　　　*Response Status*　**C**

ACCEPT.

Cl **52**　　*SC* **52.8.4**　　　　　*P* **436**　　*L* **38**　　# **277**

Christensen, Benny　　　　　　　Intel / GIGA

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

Text assumes access to TP1 (or 1 GHz test pattern in PCS). Actually, OMA can be measured on ANY PMD eye diagram (independent on pattern) with a calibrated O/E converter and oscilloscope (and a clock recovery for triggering).

SuggestedRemedy

Need refinement.

Proposed Response　　　*Response Status*　**C**

REJECT. This section is marked for removal.

Cl **52**　　*SC* **52.8.4**　　　　　*P* **437**　　*L*　　# **422**

Ohlen, Peter　　　　　　　　　Optillion

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

The figures (A.2 & A.3) are missing in this section.

SuggestedRemedy

Insert the appropriate figures.

Proposed Response　　　*Response Status*　**C**

REJECT. Section removed.

Cl **52**　　*SC* **52.8.4**　　　　　*P* **437**　　*L* **11**　　# **706**

jonathan thatcher　　　　　　　World Wide Packets

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

Usually, we use E/R for extinction ratio, not E.

SuggestedRemedy

Replace E with E/R

Proposed Response　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE. Chose "ER"…

Cl **52**　　*SC* **52.8.4**　　　　　*P* **437**　　*L* **12**　　# **278**

Christensen, Benny　　　　　　　Intel / GIGA

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

The OMA = ...

SuggestedRemedy

Then OMA =.....

Proposed Response　　　*Response Status*　**C**

ACCEPT.

Cl **52**　　*SC* **52.8.5**　　　　　*P* **437**　　*L* **13**　　# **707**

jonathan thatcher　　　　　　　World Wide Packets

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

Change (RIN) (OMA) to (RIN, OMA) or (RIN-OMA).

SuggestedRemedy

see comment

Proposed Response　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE. Try "Relative intensity noise optical modulation amplitude (RIN12OMA) measuring procedure".

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* **52.8.5**

Cl **52**   *SC* **52.8.5.1**   *P* **437**   *L* **18**   **# 708**
jonathan thatcher   World Wide Packets

Comment Type   **E**   *Comment Status*   **A**
In 802.3, we do not provide tutorial information, just the requirements. Clearly this was pulled from Fibre Channel without second thought. Strike it.

SuggestedRemedy
Remove subclause 52.8.5.1, Test objective

Proposed Response   *Response Status*   **C**
ACCEPT.

Cl **52**   *SC* **52.8.5.1**   *P* **437**   *L* **29**   **# 246**
Dudek, Mike T   Cielo Communications

Comment Type   **E**   *Comment Status*   **A**
The reference to Fibre Channel is inappropriate

SuggestedRemedy
Replace "the fibre channel the" with "this"

Proposed Response   *Response Status*   **C**
ACCEPT IN PRINCIPLE. Section removed.

Cl **52**   *SC* **52.8.5.1**   *P* **439**   *L* **34**   **# 709**
jonathan thatcher   World Wide Packets

Comment Type   **E**   *Comment Status*   **A**
Add missing figure and reference in the text.

SuggestedRemedy
see comment

Proposed Response   *Response Status*   **C**
ACCEPT IN PRINCIPLE. Figure to be added.

Cl **52**   *SC* **52.8.5.1-3**   *P* **437**   *L* **20**   **# 279**
Christensen, Benny   Intel / GIGA

Comment Type   **E**   *Comment Status*   **A**
several spaces missing after puntuaction '.' Yet a new notation for RIN[12] (coming from FC)

SuggestedRemedy
Spell check catches it.

Proposed Response   *Response Status*   **C**
ACCEPT IN PRINCIPLE. Section removed.

Cl **52**   *SC* **52.8.5.2**   *P* **437**   *L* **40**   **# 423**
Ohlen, Peter   Optillion

Comment Type   **T**   *Comment Status*   **A**
Figure missing

SuggestedRemedy
Insert the figure.

Proposed Response   *Response Status*   **C**
ACCEPT IN PRINCIPLE. Done.

Cl **52**   *SC* **52.8.5.3**   *P* **437**   *L* **53**   **# 710**
jonathan thatcher   World Wide Packets

Comment Type   **E**   *Comment Status*   **A**
Recommend that each component start a new paragraph with the component bolded. Something like:

<BOLD ON>Test Cable:<BOLD OFF> The test cable....

<BOLD ON> Polarization Rotator:<BOLD OFF> The polarization rotator...

...

<BOLD ON> Power Meter:<BOLD OFF>

testcable is two words: test cable

should have "optical return loss of 12dB (the optical return... FOTP-107)."

SuggestedRemedy
See comment

Proposed Response   *Response Status*   **C**
ACCEPT.

Cl **52**   *SC* **52.8.5.3**   *P* **438**   *L* **15**   **# 424**
Ohlen, Peter   Optillion

Comment Type   **E**   *Comment Status*   **R**
The table is not applicable to 10 Gb/s.

SuggestedRemedy
Delete the table and insert the value in the text.

Proposed Response   *Response Status*   **C**
REJECT. Peter, please can you resubmit. I think this table is relevant and applicable to 10Gb/s.

Cl **52**   *SC* **52.8.5.3**   *P* **438**   *L* **27**   # **281**
Christensen, Benny   Intel / GIGA

Comment Type   **E**   *Comment Status* **A**
    W misprinted.

SuggestedRemedy
    Replaced by 'greak capital Omega' or 'ohm'

Proposed Response   *Response Status* **C**
    ACCEPT.

Cl **52**   *SC* **52.8.5.3**   *P* **438**   *L* **27**   # **248**
Dudek, Mike T   Cielo Communications

Comment Type   **E**   *Comment Status* **A**
    This may just be my font issue. However I read 50 W when it should be 50 ohms

SuggestedRemedy
    Change "W" to Ohms

Proposed Response   *Response Status* **C**
    ACCEPT IN PRINCIPLE. See #281

Cl **52**   *SC* **52.8.5.3**   *P* **438**   *L* **28**   # **425**
Ohlen, Peter   Optillion

Comment Type   **E**   *Comment Status* **A**
    W should be "Ohms" or the omega letter.

SuggestedRemedy
    Change "W" to omega.

Proposed Response   *Response Status* **C**
    ACCEPT IN PRINCIPLE. See #281

Cl **52**   *SC* **52.8.5.3**   *P* **438**   *L* **8**   # **247**
Dudek, Mike T   Cielo Communications

Comment Type   **T**   *Comment Status* **A**
    Table 52-18 is inappropriate.

SuggestedRemedy
    Delete the sentence "recommended values are shown in the table" and also Delete Table 52-18

Proposed Response   *Response Status* **C**
    ACCEPT.

Cl **52**   *SC* **52.8.5.4**   *P* **438**   *L* **34**   # **711**
jonathan thatcher   World Wide Packets

Comment Type   **E**   *Comment Status* **A**
    Change to: "With the DUT disconnected, zero the...."

SuggestedRemedy
    see comment

Proposed Response   *Response Status* **C**
    ACCEPT IN PRINCIPLE. Just a comma, right?

Cl **52**   *SC* **52.8.6**   *P* **439**   *L* **24**   # **282**
Christensen, Benny   Intel / GIGA

Comment Type   **E**   *Comment Status* **A**
    H(p) should be H(y) as y is the sole formal parameter of the equation.Bessel-Thomson has an underline at the dash character (several places in this clause)

SuggestedRemedy

Proposed Response   *Response Status* **C**
    ACCEPT.

Cl **52**   *SC* **52.8.6**   *P* **439**   *L* **30**   # **713**
jonathan thatcher   World Wide Packets

Comment Type   **E**   *Comment Status* **A**
    Remove underscore from Bessel-Thomson. Change "receiver defined" to "receiver is defined"

SuggestedRemedy
    See comment

Proposed Response   *Response Status* **C**
    ACCEPT IN PRINCIPLE. #282 covers comment A, comment B is accepted.

Cl **52**   *SC* **52.8.6**   *P* **439**   *L* **7**   # **712**
jonathan thatcher   World Wide Packets

Comment Type   **T**   *Comment Status* **A**
    Change to use the specific pattern required.

SuggestedRemedy
    See comment.

Proposed Response   *Response Status* **C**
    ACCEPT IN PRINCIPLE. Alternately handled.

Cl **52**   *SC* **52.8.6**   *P* **439**   *L* **7**   *#* **498**

Dawe, Piers   Agilent

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

Another "node" to be renamed. Also, we could indicate what PRBS we think is appropriate.

SuggestedRemedy

Change "Measurement with the node transmitting an appropriate PRBS or a valid 10GBASE-SR/LR/ER/SW/LW/EW or OC-192c or STM-64 signal." to "An appropriate PRBS (2^23-1 or 2^31-1) or a valid 10GBASE-SR/LR/ER/SW/LW/EW or OC-192c or STM-64 signal should be used."

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **52**   *SC* **52.8.6**   *P* **439**   *L* **8**   *#* **495**

Dawe, Piers   Agilent

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

re "Reference measurement procedure ITU-T O.nnn or ANSI or TIA/EIA as appropriate." The only standard we know is ANSI/TIA/EIA-526-4A (OFSTP-4A) Aug. 1997.

SuggestedRemedy

Reference ANSI/TIA/EIA-526-4A (OFSTP-4A) Aug. 1997.

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **52**   *SC* **52.8.6**   *P* **440**   *L* **1**   *#* **283**

Christensen, Benny   Intel / GIGA

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

reactive. Maybe it it the right word. SDH BT4 filter has a serial inductor at one input and a parallel capacitor athe the other input. I guess it is 50 ohm (real) within the low pass-band and becomes more and more reactive above the 3 dB frequency.

SuggestedRemedy

Proposed Response   *Response Status* **C**

REJECT. No remedy.

Cl **52**   *SC* **52.8.9**   *P* **441**   *L* **2**   *#* **714**

jonathan thatcher   World Wide Packets

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

Wrong reference for test pattern.
Ditto in 52.8.10, lines 24 and 26

SuggestedRemedy

Fix

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. Changed to XXX awaiting chief editor magic.

Cl **52**   *SC* **52.8.9**   *P* **441**   *L* **3**   *#* **426**

Ohlen, Peter   Optillion

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

The section describing the PLL used for jitter measurements have been deleted, is needed.

SuggestedRemedy

Insert:
Jitter measurement may use a clock recovery unit (commonly referred to in the industry as a ?golden PLL?)to remove low frequency jitter from the measurement as shown in Figure 52?4. The clock recovery unit hasa low pass filter with 20 dB/decade rolloff with -3 dB point of 6 MHz. For this measurement, the recoveredclock will run at the signaling speed. The golden PLL is used to approximate the PLL in the deserializerfunction of the PMA. The PMA deserializer is able to track a large amount of low frequency jitter (such asdrift or wander) below its bandwidth. This low frequency jitter would create a large measurement penalty,but does not affect operation of the link.

Proposed Response   *Response Status* **C**

ACCEPT.   But can't we do this by reference?

Cl **52**   *SC* **52.8.9,10**   *P* **52**   *L*   *#* **442**

Ohlen, Peter   Optillion

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

The test patterns for jitter measurements are not defined, or not well suited for 10 GbE TRX's (the 20 bit patterns fits bad into a 16-bit interface).

SuggestedRemedy

Define the test patterns used for measurements of total jitter, RJ, DJ, and DCD.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.   Wrong pattern in 52.7.9 should have been removed per D2.0 # 458: '52.7.8 '"The test shall utilize the mixed frequency test pattern specified in 36A.3." needs fixing, or at very minimum, deleting.'

Cl **52**   *SC* **52.9.2**   *P* **447**   *L* **12**   **#** **725**

jonathan thatcher   World Wide Packets

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

The 1993 reference is not correct

SuggestedRemedy

Fix.

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE. Think it's right: International Electrotechnical Commission (IEC) Standard Publication 60825-1, "Safety of Laser Products—Part 1: Equipment Classification, Requirements and User's Guide", 1st edition (11/1993) which has been updated by Amendment 2 (2001-01).

Cl **52**   *SC* **52.9.2**   *P* **447**   *L* **20**   **#** **726**

jonathan thatcher   World Wide Packets

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

Add note regarding CDRH

SuggestedRemedy

Add:

"Note: At the time of publication, the CDRH laser safety requirement has not been aligned with the new IEC specification. Until such time as this is completed, 850 nm transceivers that are designed to operate at the maximum optical output specified by this standard are required to be classified in the United States as Class IIIA devices unless specifically authorized otherwise. Such classification carries specific labeling and tracking requirements.

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.   Choose:
"
Note: At the time of publication, the CDRH laser safety requirement has not been aligned with the new IEC specification. Until resolved, 10GBASE-SR/SW transceivers that are designed to operate at the maximum optical output specified by this standard may be classified in the United States per CDRH as Class IIIA devices unless specifically authorized otherwise. Such classification carries specific labeling and tracking requirements.

Y: 22
N: 2
A: 6

Passes

Cl **52**   *SC* **52.9-11**   *P* **440-444**   *L*   **#** **494**

Dawe, Piers   Agilent

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

These sections still contain some Gigabit, 8B10B material.

SuggestedRemedy

Look to simplify: fewer patterns, fewer things measured! Consider a receive side eye mask like XAUI group does.

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.   To be replaced by new jitter section.

Cl **52**   *SC* **52.Table 52-14**   *P* **433**   *L* **28**   **#** **242**

Dudek, Mike T   Cielo Communications

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

The RIN specification is unnecessarily tight. Changing the specification to -125dB only changes the unallocated margin by 0.11dB

SuggestedRemedy

Change "-130" to "-125" for RIN12OMA. Change the table 52-16 link power penalties to 3.7dB and the unallocated margin to 1.31dB

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **52**   *SC* **52-14**   *P* **433**   *L* **20**   **#** **416**

Ohlen, Peter   Optillion

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

As part of the dispersion penalty measurement which has been adopted, the transmitter power output power (OMA) should be "-1.39 + DP" where DP is the dispersion penalty.

SuggestedRemedy

Change the OMA/2 value of "-1.39 dBm" to an OMA value of "-1.39 + DP".
Make the corresponding change to the mW value (1.45 * 10^(DP/10)) or delete it depending on what looks best.

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE. Removed mW

Cl **52**   *SC* **6.3**   *P* **434**   *L* **20**   **#** **367**
Juergen Rahn   Lucent Technologies

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

The 1550 nm receiver sensitivity is defined too stringent to be possible with normal PIN receivers. For interface operations the sensitivity has to be defined as worst case end of live definition (including also measurement tolerances and operation power variation effects, distortions and so on) the stressed receiver sensitivity based on OMA (what means a ideal extinction sensitivity) in this interface is calculated on the base of a raw receive sensitivity of a power of less than -19dBm. This value is for a PIN receiver a value that can be achieved with limited yield as lab experiment result but not as mass production end of life specification. The 10 GBE interface should include EOL aging degradation, operation power variation, measurement accuracy, margins also.

SuggestedRemedy

Lower the basic sensitivity by an operation margin of at least 2 dB (preferable 3 dB).

Proposed Response   *Response Status*   **C**

REJECT.   This does not represent a complete solution that allows us to meet our objectives (40 km).

Cl **52**   *SC* **7**   *P* **430**   *L* **42**   **#** **366**
Juergen Rahn   Lucent Technologies

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

The Extinction ratio in this version is lowered to 3 dB while at the same time the OMA is introduced and defined to be at minimum 0.477mW . This specification is not possible to be implemented with reasonable yield and cost in mass production. Transmitter control is done on base of average power (and only possible to be done on average power due to monitor diode response) and a tolerance (including required margins for lifetime maximum tracking error, measurement accuracy , connector loss) should be 3 dB at least. However looking into the current spec of the 10GBASE-LR/LW with maximum average power of 1 dBm and 3 dB extinction at worst case together with minimum OMA of 0.477mW gives a resulting possible tolerance of less than 3 dB. This is an issue for implementation in particular in light of low cost and mass production.

SuggestedRemedy

Put the minimum extinction ratio back to 6 dB and use the traditional Max and Min power and extinction ratio specification method.

Proposed Response   *Response Status*   **C**

REJECT.

The committee would like to see more analysis and more experimental evidence. Please resubmit your comment against D3.0.

Cl **52**   *SC* **7**   *P* **435**   *L* **34**   **#** **364**
Juergen Rahn   Lucent Technologies

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

10 Gbit Ethernet WAN interface (10GBASE-LR/IW, 10GBASE-ER/EW) will be transported over long haul SONET networks. In order to ensure this interworking with SONET equipment has to be provided. In this spec, the jitter is described different from the legacy SONET/SDH description. This is due to the fact that path and transmitter influences are described in the same manner as timing circuit influences. (Most random jitter is likely to be timing jitter but this is not specified). In order to ensure the cross compatibility the clock jitter as used by SONET SDH should be specified also:Transmitter side Clock noise portion of generated transmitter jitter should be specified in line to ITU (G.783)The jitter as generated by the transmitter side clock noise should be measured between 4 MHz and 80 MHz and shall be less than 0.1 UI (ITU Option1).This amendment would ease cross compatibility.

SuggestedRemedy

For 10GBASE-LR/IW, 10GBASE-ER/EW the jitter as generated by transmitter side clock noise should be measured between 4 MHz and 80 MHz and shall be less than 0.1 UI (ITU Option1).

Proposed Response   *Response Status*   **C**

REJECT.   I believe the assumption is that there is reclocking between WAN and SONET; no position on OTN yet, I believe. Please bring presentation (may not get discussed at March meeting) and resubmit comment if necessary.

Cl **52**   *SC* **fig. 52-7-8**   *P* **442**   *L*   **#** **285**
Christensen, Benny   Intel / GIGA

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

The two figures are identical (almost). Either an error showing the wrong figure or could be combined into one figure.

SuggestedRemedy

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **52**   *SC* **Figure 52-2**   *P* **427**   *L*   **#** **414**
Ohlen, Peter   Optillion

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

"mA" should read "mW". If triple trade-off curves are used, the figures need to be MUCH more exact or maybe put in a table or equational form.

SuggestedRemedy

At least change the mA --> mW. Then we need to come up with a way of representing this that is more exact.

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE. Changes to TTO as per resolution.

Cl **52**　　　*SC* **Figure 52-2**　　　*P* **427**　　　*L* **18**　　　**#** 232
Dudek, Mike T　　　　　　　　　　Cielo Communications

Comment Type　　**T**　　　*Comment Status*　　**A**　　　　　　*TTO*
　The labelling is incorrect. Also the placement of the figure could be improved.

SuggestedRemedy
　Move the figure after table 52-6.
　Change mA to mW OMA (6 places)
　Add RMS infront of spectral width.

Proposed Response　　　　*Response Status*　　**C**
　ACCEPT IN PRINCIPLE. Changes to TTO as per resolution.

Cl **52**　　　*SC* **Figure 52-2**　　　*P* **429**　　　*L*　　　**#** 454
Patterson, Russell　　　　　　　　Picolight

Comment Type　　**E**　　　*Comment Status*　　**A**　　　　　　*TTO*
　Legend in graph incorrectly calls out units in mA

SuggestedRemedy
　Change "mA" to "mW"

Proposed Response　　　　*Response Status*　　**C**
　ACCEPT IN PRINCIPLE. Changes to TTO as per resolution.

Cl **52**　　　*SC* **Figure 52-2**　　　*P* **429**　　　*L* **10-29**　　　**#** 591
Jack Jewell　　　　　　　　　　Picolight

Comment Type　　**E**　　　*Comment Status*　　**A**　　　　　　*TTO*
　Figure 52-2 does not need to extend outside the range of specifications defined in Table 52-6, in
　its present form the 840-860nm wavelength range, and a 0-0.35nm range of spectral width.

SuggestedRemedy
　Truncate the limits of Figure 52-2 to match Table 52-6, in its present form 840-860nm and 0-
　0.35nm.

Proposed Response　　　　*Response Status*　　**C**
　ACCEPT IN PRINCIPLE. The rewrite of triple tradeoff curves will remove these values from the
　table.

Cl **52**　　　*SC* **Figure 52-2**　　　*P* **429**　　　*L* **10-29**　　　**#** 592
Jack Jewell　　　　　　　　　　Picolight

Comment Type　　**E**　　　*Comment Status*　　**R**
　Curves are labled "mA."

SuggestedRemedy
　Label the curves "mW."

Proposed Response　　　　*Response Status*　　**C**
　REJECT. The Editor respectfully requests that this comment be re-submitted in the next ballot
　cycle as it does not add to the technical completeness of this draft.

Cl **52**　　　*SC* **Figure 52-3**　　　*P* **430**　　　*L* **12**　　　**#** 237
Dudek, Mike T　　　　　　　　　　Cielo Communications

Comment Type　　**T**　　　*Comment Status*　　**A**　　　　　　*TTO*
　The labelling is incorrect. Also the placement of the figure could be improved.

SuggestedRemedy
　Move the figure after table 52-10.
　Change mA to mW OMA (5 places)
　Add RMS infront of spectral width.

Proposed Response　　　　*Response Status*　　**C**
　ACCEPT IN PRINCIPLE. Changes to TTO as per resolution.

Cl **52**　　　*SC* **Figure 52-3**　　　*P* **432**　　　*L*　　　**#** 456
Patterson, Russell　　　　　　　　Picolight

Comment Type　　**E**　　　*Comment Status*　　**A**　　　　　　*TTO*
　Incorrect units appear on legend in graph

SuggestedRemedy
　change "mA" to "mW"

Proposed Response　　　　*Response Status*　　**C**
　ACCEPT IN PRINCIPLE. Changes to TTO as per resolution.

Cl **52**　　　*SC* **Figure 52-3**　　　*P* **432**　　　*L* **5-24**　　　**#** 588
Jack Jewell　　　　　　　　　　Picolight

Comment Type　　**E**　　　*Comment Status*　　**A**　　　　　　*TTO*
　Curves are labled "mA."

SuggestedRemedy
　Label the curves "mW."

Proposed Response　　　　*Response Status*　　**C**
　ACCEPT IN PRINCIPLE. See #456

Cl **52**   *SC* **Figure 52-5**   *P* **442**   *L*   # **457**

Patterson, Russell   Picolight

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

Assuming mask definition is for TP2 than the amount of horizontal eye opening in the mask does not agree with that in Table 52-17. Table 52-17 specifies total jitter at TP2 of 0.431 UI. The transmitter eye mask in figure 52-5 specifies an opening of 0.6 UI

SuggestedRemedy

change normalized time for inner mask to 22% and 78% of unit interval

Proposed Response   *Response Status* **C**

REJECT. This is what was agreed. The two tests do not measure quite the same thing. Let's discuss & resubmit as necessary.

Cl **52**   *SC* **figure 52-7**   *P* **442**   *L*   # **429**

Ohlen, Peter   Optillion

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

Figure 52-8 is identical.

SuggestedRemedy

Delete figure 52-7 and change references to this figure to figure 52-8.

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **52**   *SC* **Figure 52-8**   *P* **443**   *L* **10**   # **251**

Dudek, Mike T   Cielo Communications

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

Figure 52-8 is a duplicate of Figure 52-7

SuggestedRemedy

Delete Figure 52-8. Change all references (eg line37) to Figure 52-7

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE. See #429

Cl **52**   *SC* **table 52-17**   *P* **435**   *L* **47**   # **275**

Christensen, Benny   Intel / GIGA

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

Total jitter at TP3 is not given. From my measurements on 10 Gb/s CDR for SDH systems, it is not reasonable to have more than max. 0.5 Ulpp total jitter in specifications. I don't know about other vendors specifications.

SuggestedRemedy

Numbers still have to be carefully chosen as per Editors note. Unfortunately, not many experimental data are available.

Proposed Response   *Response Status* **C**

REJECT. Benny, thanks for the comment. Please resubmit with the values required to correct the table or a suggestion on how the table should be restructured.

Cl **52**   *SC* **Table 52-10**   *P* **430**   *L* **31**   # **238**

Dudek, Mike T   Cielo Communications

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

With the use of triple trade off curves the spectral width and Average launch power (min) specifications are not appropriate in this table and if they are kept in this table they are the wrong values.

SuggestedRemedy

Remove the 1290-1330 column
Replace the numbers in the spectral width row with "see footnote 2"
Replace the numbers in the Average launch power (min) with "see footnote 2"
Add footnote 2 to the bottom of the table footnote 2 should say "Trade-offs are available between spectral centre wavelength, RMS spectral width, and minimum Optical Modulation Amplitude See Fig 52-3"

Proposed Response   *Response Status* **C**

REJECT. Other changes will override.

Cl **52**   *SC* **table 52-10**   *P* **430**   *L* **49**   # **268**

Christensen, Benny   Intel / GIGA

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

RIN12OMA naming definition

SuggestedRemedy

'12' in subscript

Proposed Response   *Response Status* **C**

ACCEPT. Also made changes globally.

TYPE: TR/technical required T/technical E/editorial COMMENT STATUS: D/dispatched A/accepted R/rejected SORT ORDER: Clause, Page, Line, Subclause   Page 125 of 144

RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *Cl* **52**   *SC* **table 52-10**

Cl **52**   *SC* **Table 52-10**   *P* **430**   *L* **50**   # **239**

Dudek, Mike T   Cielo Communications

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

The RIN12OMA specification is tighter than it needs to be. A relaxation to -125dBm would allow reduce the unallocated margin by 0.11dB.

SuggestedRemedy

Change the RIN12OMA specification from "-130" to "-125"

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **52**   *SC* **Table 52-14**   *P* **433**   *L* **20**   # **241**

Dudek, Mike T   Cielo Communications

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

The editors note to change the Average Launch power min to -4.338 + dispersion penalty should be implemented.

SuggestedRemedy

Change cell to "0.725(-4.338) + Dispersion penalty" note a footnote in this cellAdd footnote. Trade-offs are available between dispersion penalty and Average launch power (min).

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **52**   *SC* **Table 52-14**   *P* **433**   *L* **32**   # **417**

Ohlen, Peter   Optillion

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

The 1550 PMD has a specified return loss of 26 dB and RIN should be measured with the worst case reflection which is -26 dB, not -12 dB. The -12 dB originates from an air-gap, however an air-gap will make the link non-functional anyway, and nothing is gained by measuring RIN at 12 dB return loss.

SuggestedRemedy

Change "12 dB" to "26 dB" on p.433:32.
Changes also need to be made to 52.8.5, on p.437:30, p.437:53 which explicitly state 12 dB for the test setup.

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.   Choose 22 dB.

Cl **52**   *SC* **Table 52-15**   *P* **434**   *L* **26**   # **243**

Dudek, Mike T   Cielo Communications

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

With the allowed dispersion penalty of 3dB and the fact that the ISI for the stressed receiver sensitivity is calibrated with a 7.5GHz reference receiver the vertical eye closure penalty is too small.

SuggestedRemedy

Change "2.79" to "3.0"

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **52**   *SC* **table 52-16**   *P* **435**   *L* **14**   # **272**

Christensen, Benny   Intel / GIGA

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

Summing up numbers, this seems to be 1.41 dB instead of 1.42

SuggestedRemedy

replace 1.42 by 1.41

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **52**   *SC* **table 52-17**   *P* **435**   *L* **42**   # **274**

Christensen, Benny   Intel / GIGA

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

Though not stated anywhere the units is probably: UIpp (could have been rms but seems unlikely as the pp value would be 14 * rms for a 10^-12 confidence interval)

SuggestedRemedy

clarifying: UIpp in column header fields

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **52** *SC* **Table 52-17** *P* **435** *L* **46** **#** **244**
Dudek, Mike T   Cielo Communications

Comment Type **T** *Comment Status* **A** *JITTER*
This table does not reflect any agreed changes, or the latest thinking from the jitter study sub-group. The allowance from TP2 to TP3 is unrealistically large.

SuggestedRemedy
For SR/SW and ER/EW and increase TP2 Dj to .25, TP2-TP3 Dj to 0.5 and TP3 Dj to .3. And change TP2 Tj to .481 Insert TP2 to TP3 Tj equal to 0.17For LR/LW increase TP2 Dj to .28. Insert TP2 to TP3 Tj equal to 0.03

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE. This should be discussed as part of the jitter ad hoc's work provided time is available.

Cl **52** *SC* **Table 52-17** *P* **437** *L* **#** **459**
Patterson, Russell   Picolight

Comment Type **E** *Comment Status* **R**
Table is not complete

SuggestedRemedy
Insert numbers discussed at jitter study meeting on Feb 9th.

Proposed Response *Response Status* **C**
REJECT. Please resubmit with the numbers that were discussed at this meeting, which should have emerged from the minutes of this meeting.

Cl **52** *SC* **table 52-18** *P* **438** *L* **13** **#** **280**
Christensen, Benny   Intel / GIGA

Comment Type **E** *Comment Status* **A**
move units to column header

SuggestedRemedy

Proposed Response *Response Status* **C**
ACCEPT.

Cl **52** *SC* **Table 52-19** *P* **449** *L* **#** **29**
Stoltz, Mario   ChipIng.de, an Intel co

Comment Type **E** *Comment Status* **A**
Double "Unit" entry in line 4 of the table

SuggestedRemedy
Omit "Unit" entry in line 4 of the table, as the units are stated already with the values.

Proposed Response *Response Status* **C**
ACCEPT.

Cl **52** *SC* **Table 52-19** *P* **449** *L* **11** **#** **436**
Ohlen, Peter   Optillion

Comment Type **T** *Comment Status* **A**
For 10 GbE worst-case SMF will not work.

SuggestedRemedy
Change 16.1 to 13. Also change the footnote as indicated by comment #835 on draft 2.0 explaining thatpremium cable performance may be necessary for lengths longer than 35 km.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE. See #203.

Cl **52** *SC* **Table 52-19** *P* **449** *L* **11** **#** **435**
Ohlen, Peter   Optillion

Comment Type **E** *Comment Status* **A**
Stating "5.5 or 6.5" for the channel insertion loss for 1310 SMF is confusing.

SuggestedRemedy
Change "5.5 or 6.5" to "6.5". If it is useful, add a note explaining that there are different cable types for 1310 which have somewhat different loss specifications.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE. No note, this is an example in an informative table, right?

Cl **52** *SC* **Table 52-2** *P* **422** *L* **24** **#** **409**
Ohlen, Peter   Optillion

Comment Type **T** *Comment Status* **A** *4LANES*
There are only a single transmitter in this PMD and one transmit disable is needed.

SuggestedRemedy
Delete the rows corresponding to transmit disable 1-3.

Proposed Response *Response Status* **C**
ACCEPT.

Cl **52** *SC* **Table 52-20** *P* **450** *L* **#** **30**
Stoltz, Mario   ChipIng.de, an Intel co

Comment Type **E** *Comment Status* **A**
"Unit" entries in lines 4 and 6 of the table do not comply with ANSI/IEEE 268-1992 (Standard for Metric Practice) Cls. 3.5.3.2.

SuggestedRemedy
Change line 4 entry to MHz*km (no spaces) or MHz km;Change line 6 entry to ps/nm^2*km (no spaces) or ps/nm^2 km.

Proposed Response *Response Status* **C**
ACCEPT.

Cl **52**　　　*SC* **Table 52-20**　　　*P* **450**　　　*L* **17**　　　**#** **437**

Ohlen, Peter　　　　　　　　　　　Optillion

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

"0.4 or 0.5" dB/km is confusing. I think the idea is to indicate that two different cable types can be used. However, the present writing is confusing and it is better to explain that two different cable types are supported.

SuggestedRemedy

Change "0.4 or 0.5" to "0.5". Explain that two different cable types apply, which have losses of either 0.4 or 0.5. We better check the wording with someone who knows fiber types and standards to get the footnote right.

Proposed Response　　　*Response Status* **C**

REJECT. Withdrawn.

Cl **52**　　　*SC* **Table 52-3**　　　*P* **422**　　　*L* **44**　　　**#** **410**

Ohlen, Peter　　　　　　　　　　　Optillion

Comment Type **T**　　*Comment Status* **A**　　　　　　　*4LANES*

There are only a single receiver in this PMD and one signal detect is needed.

SuggestedRemedy

Delete the rows corresponding to signal detect 1-3.

Proposed Response　　　*Response Status* **C**

ACCEPT.

Cl **52**　　　*SC* **Table 52-4**　　　*P*　　　*L*　　　**#** **17**

Stoltz, Mario　　　　　　　　　　　ChipIng.de, an Intel co

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

"Input_optical_power (I see a czech "S" here) Receive..."

SuggestedRemedy

Change to "..._power >=(greater-or-equal sign) Receive..."

Proposed Response　　　*Response Status* **C**

ACCEPT.

Cl **52**　　　*SC* **Table 52-4**　　　*P* **424**　　　*L* **26**　　　**#** **253**

Dudek, Mike T　　　　　　　　　　Cielo Communications

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

It is a better idea to have the signal detect indicate whether an optical signal is present independent of whether the electrical signal is being looped back.

SuggestedRemedy

Delete "Or PMD_loopback"

Proposed Response　　　*Response Status* **C**

REJECT. See #180.

Cl **52**　　　*SC* **Table 52-6**　　　*P* **427**　　　*L* **36**　　　**#** **234**

Dudek, Mike T　　　　　　　　　　Cielo Communications

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

The table is no longer divided

SuggestedRemedy

replace 62.5um and 50um separate blocks with one block"10GBASE-SR/SW"

Proposed Response　　　*Response Status* **C**

ACCEPT.

Cl **52**　　　*SC* **Table 52-6**　　　*P* **427**　　　*L* **44**　　　**#** **233**

Dudek, Mike T　　　　　　　　　　Cielo Communications

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

With the use of triple trade off curves the spectral width and Average launch power (min) specifications are not appropriate in this table and if they are kept in this table they are the wrong values.

SuggestedRemedy

Replace "0.35" with "see footnote 2" on line 44
Replace "0.357 (-7.46)" with "see footnote 2" on line 47
Add footnote 2 to the bottom of the table footnote 2 should say "Trade-offs are available between spectral centre wavelength, RMS spectral width, and minimum Optical Modulation Amplitude See Fig 52-2"

Proposed Response　　　*Response Status* **C**

ACCEPT IN PRINCIPLE. Changes to TTO as per resolution.

Cl **52**   *SC* **table 52-6**   *P* **427**   *L* **52**   *#* **266**
Christensen, Benny   Intel / GIGA

Comment Type **T**   *Comment Status* **A**   *RIN*
RIN12OMA notation. In definitions 1.4 '12' is subscript

SuggestedRemedy
Use of consistent typing notation recommended.(A general comment applied to draft 2.1)

Proposed Response   *Response Status* **C**
ACCEPT.   Notation is to be made consistent.

Cl **52**   *SC* **Table 52-6**   *P* **429**   *L* **35-54**   *#* **590**
Jack Jewell   Picolight

Comment Type **T**   *Comment Status* **R**
The specifications of Table 52-6 do not satisfy the 300m link as in Table 52-8. Furthermore, for the shorter links, they produce Link Power Penalties and Unallocated Margins which differ from those of Table 52-8.

SuggestedRemedy
Introduce a split underneath the 50um MMF column of Table 52-6 which couples a 0.30nm spectral width with 35ps rise/fall time, and which couples a 0.35nm spectral width with a 31.5ps rise/fall time in order to satisfy the 300m link with the values in the present Table 52-6. For the shorter links, replace the Link power penalties and Unallocated margins with the values which result from the 35ps rise/fall and 0.35nm spectral width in the present Table 52-6.

Proposed Response   *Response Status* **C**
REJECT.   This needs to be taken into Serial PMD ad hoc, to develop trade-offs between r/f times, jitter, and TTO curves for recommendation.

Cl **52**   *SC* **Table 52-6,10,14**   *P*   *L*   *#* **438**
Ohlen, Peter   Optillion

Comment Type **T**   *Comment Status* **A**
OMA is not average power.

SuggestedRemedy
Delete "Average" on p.427:47, p.430:41, p.433:20

Proposed Response   *Response Status* **C**
ACCEPT.

Cl **52**   *SC* **Table 52-7**   *P* **428**   *L* **18**   *#* **235**
Dudek, Mike T   Cielo Communications

Comment Type **T**   *Comment Status* **A**
It is not necessary to provide have two different fiber specifications for the one receiver. The low ISI case is controlled by the Receiver sensitivity (Normal). Only the 50um high ISI case is needed

SuggestedRemedy
delete the 62.5um column. Change the title to "10GBASE-SR/SW" instead of 50um for the remaining column

Proposed Response   *Response Status* **C**
ACCEPT.

Cl **52**   *SC* **Table 52-7**   *P* **430**   *L*   *#* **455**
Patterson, Russell   Picolight

Comment Type **T**   *Comment Status* **A**
Table contains specification for instinsic receive sensitivity (fourth entry in table) Specified value may be in conflict with stressed receive sensitivity. (ie may meet intrinsic but might fail to meet stressed). Stressed receive sensitivity should be the primary spec and not intrinsic sensitivity.

SuggestedRemedy
Remove specification for intrinsic sensitivity from table. (fourth line in table)

Proposed Response   *Response Status* **C**
ACCEPT IN PRINCIPLE. Make receive sensitivity informative with footnote (3 places)

Cl **52**   *SC* **table52-2**   *P* **422**   *L* **14**   *#* **257**
Christensen, Benny   Intel / GIGA

Comment Type **T**   *Comment Status* **A**   *4LANES*
Only PMD type -X uses all 4 disable / signal detectMDIO status variables. Serial PMDs are required only to use register/bit 0 as pr.52.3.5.

SuggestedRemedy
Either removed the unused entries in table or add a note stating that only disable_0 / signal_detect_0 is used for serial PMDs. Also, define the default / required / NA value for the unused status bits 1,2,3 (though they are not used, they may be OR'ed somewhere in the management system in order to generate a summary status signal)

Proposed Response   *Response Status* **C**
ACCEPT IN PRINCIPLE.   Handled by another comment.

Cl **52**   *SC* **Table52-4**   *P* **426**   *L*   # **453**

Patterson, Russell   Picolight

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

Table 52-4 appears to have typo for signal detect value condition"(Input_optical_power S Receive Sensitivity"

SuggestedRemedy

Change wording to
"(Input_optical_power> Stressed Receive Sensitivity"

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.   See #17

Cl **52**   *SC* **tables**   *P* **424**   *L* **12-13**   # **258**

Christensen, Benny   Intel / GIGA

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

Contradiction: Text states that 'the PMD is not required to verify a compliant xxx signal is being received'. However, in the table this is part of the requirement (AND) for setting Signal_detect to OK.

SuggestedRemedy

Resolve contradiction.

Proposed Response   *Response Status*   **C**

REJECT. No contradiction.

Cl **52**   *SC* **Tables 52-10,-11,-12**   *P* **432-434**   *L*   # **589**

Jack Jewell   Picolight

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

Transmit characteristics in Table 52-10 do not produce the values in Table 52-12. Channel insertion loss in Table 52-12 is for 1290nm, not 1265nm as the footnote indicates.

SuggestedRemedy

Correct the Tables and/or footnotes

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.   Changed to 1290 nm.

Cl **52**   *SC* **Tables 52-19**   *P* **449**   *L*   # **434**

Ohlen, Peter   Optillion

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

This table is only informative and the DGD_max row should be moved to table 52-20.

SuggestedRemedy

Move the row on p.449:15 to table 52-20.

Proposed Response   *Response Status*   **C**

ACCEPT.   Changes made.

Cl **53**   *SC* **53.1.3**   *P* **457**   *L* **32**   # **647**

William G. Lane   CSU, Chico

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

Transmission is a PMD function

SuggestedRemedy

Change "transmission" to "transferring"

Proposed Response   *Response Status*   **C**

REJECT.
Clause 53 deleted as per the resolution to comment 587.

Cl **53**   *SC* **53.1.5**   *P* **458**   *L* **16**   # **585**

Rich Taborek   nSerial Corporation

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

Per 53.1, the LW4-PMA may attach to the WIS over the optional XSBI electrical interface described in clause 51.3 through 51.6. The XSBI itself is a PMA. Any description of LW4-PMA Service Interface should not be labeled as the XSBI.

SuggestedRemedy

Remove the label XSBI from figure 53-2.

Proposed Response   *Response Status*   **C**

REJECT.
Clause 53 deleted as per the resolution to comment 587.

Cl **53**   *SC* **53.1.5**   *P* **458**   *L* **34**   # **648**

William G. Lane   CSU, Chico

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

The font for PIPO, PISO, and SIPO definitions is too large and shouldn't be bold

SuggestedRemedy

Reduce the size of the font and change from bold to regular

Proposed Response   *Response Status*   **C**

REJECT.
Clause 53 deleted as per the resolution to comment 587.

Cl **53**	*SC* **53.1.5**	*P* **459**	*L* **16**	*#* **25**

Stoltz, Mario   ChipIng.de, an Intel co

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

Text reads "looses"

SuggestedRemedy

Change to "loses"

Proposed Response   *Response Status* **C**

REJECT.
Clause 53 deleted as per the resolution to comment 587.

Cl **53**	*SC* **53.2**	*P* **420**	*L* **28**	*#* **649**

William G. Lane   CSU, Chico

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

The font size of the three primitives is too large and the signal_detect should be upper case

SuggestedRemedy

Reduece the font size of the three primitives and make signal_detect upper case

Proposed Response   *Response Status* **C**

REJECT.
Clause 53 deleted as per the resolution to comment 587.

Cl **53**	*SC* **53.3.4**	*P* **461**	*L* **36**	*#* **586**

Rich Taborek   nSerial Corporation

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

The <13 UI of skew allowed for the medium appears to be ambiguous. What is the source of this value.

SuggestedRemedy

Replace with <14.33 bits. This value is derived by multiplying the corresponding value from table 48.5. The value in Table 48.5 is derived from calculations of medium skew in 40km of fiber in consideration of the 10GBASE-LX4 PMD.

Proposed Response   *Response Status* **C**

REJECT.
Clause 53 deleted as per the resolution to comment 587.

Cl **53**	*SC* **53.4**	*P* **462**	*L* **4**	*#* **26**

Stoltz, Mario   ChipIng.de, an Intel co

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

Text reads "...these state diagram"

SuggestedRemedy

Change to "diagrams"

Proposed Response   *Response Status* **C**

REJECT.
Clause 53 deleted as per the resolution to comment 587.

Cl **53**	*SC* **53.5**	*P* **472**	*L* **25**	*#* **650**

William G. Lane   CSU, Chico

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

Loopback is a PMD function that is covered in clause 54

SuggestedRemedy

Delete clause 53.5

Proposed Response   *Response Status* **C**

REJECT.
Clause 53 deleted as per the resolution to comment 587.

Cl **54**	*SC*	*P*	*L*	*#* **341**

Dallesasse, John M.E   Molex Incorporated

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

The following table headings do not have bold text:
54-7, 54-11

SuggestedRemedy

Fix header.

Proposed Response   *Response Status* **C**

ACCEPT.

Changes included in D2.2

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 **54**   *SC*

Cl **54**   *SC* **54**   *P* **479**   *L* **1**   # **174**
Edwards, Gareth D.   Xilinx

Comment Type **E**   *Comment Status* **A**
Clause title is corrupted.

SuggestedRemedy
Remove "Reconciliation Sublayer" from title.

Proposed Response   *Response Status* **C**
ACCEPT.

Change included in D2.2

Cl **54**   *SC* **54.1**   *P* **482**   *L* **14**   # **618**
Bottorff, Paul   Nortel Networks

Comment Type **T**   *Comment Status* **A**
The XGMII is optional not required. Clause 48 it n/a to 10GBASE-LW4.

SuggestedRemedy
Remove RS from line 14 and change "Required" to "Optional" in both 10GBASE-LX4 and 10GBASE-LW4. Change the 10GBASE-LW4 column for clause 48 from "optional" to "n/a".

Proposed Response   *Response Status* **C**
ACCEPT.

List RS and XGMII on separate lines, indicate clause 48 as n/a for LW4, include XGMII footnote regarding need to meet the functional specification even if the XGMII is physically implemented

change implemented in D2.2

Cl **54**   *SC* **54.14**   *P* **509**   *L* **5**   # **662**
William G. Lane   CSU, Chico

Comment Type **T**   *Comment Status* **R**
Table 54-16 needs to be revised to reflect WWDM operation

SuggestedRemedy
Provide the correct content

Proposed Response   *Response Status* **C**
REJECT.

This table summarizes the characteristics of the fiber media per international standards. The characteristics of the fiber media remain the same independent of the number of wavelength used. No new specifications are required.

Cl **54**   *SC* **54.14.2.1**   *P* **509**   *L* **41**   # **556**
Grann, Eric   Blaze Network Product

Comment Type **T**   *Comment Status* **D**
The Connection insertion losses should also account for a 0.5dB loss for the patch cord.

SuggestedRemedy
Add a statement for 62.5 micron fiber regarding an additional 0.5dB loss for the patch cord.

Proposed Response   *Response Status* **Z**
withdrawn

Cl **54**   *SC* **54.14.2.1**   *P* **516**   *L* **2**   # **54025**
Bill Lane

Comment Type **E**   *Comment Status* **A**
The reference to fig 54-15 is incorrect

SuggestedRemedy
change figure to table 2 places

Proposed Response   *Response Status* **C**
ACCEPT.

Cl **54**   *SC* **54.14.3**   *P* **510**   *L* **7**   # **663**
William G. Lane   CSU, Chico

Comment Type **T**   *Comment Status* **R**
The MDI definition is inconsistent with the transmitter and receiver receptacles and with the location of TP3 in 54.4.1 and the need to maintain proper polarity for the connection of the inbound and outbound paths.

SuggestedRemedy
Make the MDI definition consistent with the transmitter and receiver connections and with the location of TP3.

NOTE this needs to be coordinated with clause 54.

Proposed Response   *Response Status* **C**
REJECT.

Resolved by comment resolution #

Cl **54**   *SC* **54.15**   *P* **517**   *L* **1**   **#** **54027**

Bill Lane

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

The title of the PICs is incomplete

SuggestedRemedy

Add: "Protocol Implementation Conformance Statement (PICS) proforma for "

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **54**   *SC* **54.15.3**   *P* **512**   *L* **6**   **#** **665**

William G. Lane   CSU, Chico

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

The PICs is incomplete

SuggestedRemedy

The editors need to agree as a group on:

Proposed Response   *Response Status*   **C**

ACCEPT.

A partial PICs has been included in D2.2, rest will be included in future draft

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Cl **54**   *SC* **54.3**   *P* **485**   *L* **10**   **#** **483**

Dawe, Piers   Agilent

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

As far as I am aware, there is no mandate for a power down feature. It does not appear in
http://www.ieee802.org/3/ae/public/jan01/hudgins_1_0101.pdf .

SuggestedRemedy

Delete the line.

If you want to introduce a new feature, bring a thought-through proposal and beg the group's
indulgence to bend the rules.

Proposed Response   *Response Status*   **C**

REJECT.

See response to comment 485

Cl **54**   *SC* **54.3**   *P* **491**   *L* **5**   **#** **54001**

Eric Grann

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

"Figure 54-2" and Figure "54-3" are incorrect

SuggestedRemedy

Change "Figure" to "Table"

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **54**   *SC* **54.4.1**   *P* **485**   *L* **54**   **#** **651**

William G. Lane   CSU, Chico

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

The MDI definition in 54.14.3 is no longer consistent with the terms "transmitter receptacle" and
"receiver receptacle as used in this paragraph" or with the location of TP3 in figure 54-2.

SuggestedRemedy

change "receiver receptacle defined in____" to "MDI interface defined in 54.14.3"

Proposed Response   *Response Status*   **C**

ACCEPT.

Cl **54**   *SC* **54.4.1**   *P* **486**   *L* **4**   **#** **338**

Dallesasse, John M.E   Molex Incorporated

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

The definition of a receiver receptacle may be beyond the scope of this document.

SuggestedRemedy

Change the sentance to read:
"The optical receive signal is defined at the output of the fiber optic cabling (TP3)."This leaves
the connectorization scheme undefined.

Proposed Response   *Response Status*   **C**

ACCEPT.

See remedy in comment 651

Cl **54** *SC* **54.4.1** *P* **492** *L* # **54005**

Eric Gann

Comment Type **E** *Comment Status* **X**
PMD loopback needs to be defined

SuggestedRemedy

Proposed Response *Response Status* **Z**
withdrawn

Cl **54** *SC* **54.4.1** *P* **492** *L* **16** # **54004**

Bill Lane

Comment Type **E** *Comment Status* **X**
receiver receptacle is not defined

SuggestedRemedy
End sentence at (TP3)

Proposed Response *Response Status* **Z**
withdrawn

Cl **54** *SC* **54.4.1** *P* **492** *L* **50** # **54006**

Eric Gann

Comment Type **T** *Comment Status* **R**
The term "patch cord" in figure 54-2 can be confusing

SuggestedRemedy
Add note "3. For 62.5 micron MMF, the patch cord should be the single mode fiber offset launch patch cord as defined in 38.11.4."

Proposed Response *Response Status* **Z**
withdrawn

Cl **54** *SC* **54.4.3** *P* **493** *L* **14** # **54007**

Bill Lane

Comment Type **T** *Comment Status* **A**
rx_bit [3:0] is incorrect

SuggestedRemedy
change to: rx_bit [0:3]

Proposed Response *Response Status* **C**
ACCEPT.

Cl **54** *SC* **54.4.4** *P* **487** *L* **13** # **335**

Dallesasse, John M.E Molex Incorporated

Comment Type **E** *Comment Status* **A**
There is a space missing between the ".indicate" and "(SIGNAL_DETECT).

SuggestedRemedy
This is a minor typo that needs to be corrected.

Proposed Response *Response Status* **C**
ACCEPT.

Change included in D2.2

Cl **54** *SC* **54.4.4** *P* **487** *L* **19** # **336**

Dallesasse, John M.E Molex Incorporated

Comment Type **E** *Comment Status* **A**
There are two periods at the end of the sentance.

SuggestedRemedy
Remove a period.

Proposed Response *Response Status* **C**
ACCEPT.

Change included in D2.2

Cl **54** *SC* **54.4.4** *P* **494** *L* **1** # **54026**

Bill Lane

Comment Type **T** *Comment Status* **A**
lane-by-lane signal detect needs to be explicitly defined

SuggestedRemedy
Move the last paragraph of 54.4.4 into a new subclause and add "according to the requirements of table 54-4"

Proposed Response *Response Status* **C**
ACCEPT.

Include lane-by-lane signal detect in the title

TYPE: TR/technical required T/technical E/editorial COMMENT STATUS: D/dispatched A/accepted R/rejected SORT ORDER: Clause, Page, Line, Subclause Page 134 of 144

RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn *Cl* **54** *SC* **54.4.4**

Cl **54**   *SC* **54.4.6**   *P* **488**   *L* **1**   # **485**

Dawe, Piers   Agilent

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

As far as I am aware, there is no mandate for a power down feature. It does not appear in http://www.ieee802.org/3/ae/public/jan01/hudgins_1_0101.pdf . As the editor points out, the text in 45.2.1.1.4 raises problems.

SuggestedRemedy

Delete the subclause.

If you want to introduce a new feature, bring a thought-through proposal and beg the group's indulgence to bend the rules.

Proposed Response   *Response Status*   **C**

REJECT.

Power_down is included in clause 45 as a PMD requirement if the MDIO is implemented.

Change 54.4.6 to state that the specific behavior of the PMD_power_down function is implementation specific and is not defined by this standard.

Cl **54**   *SC* **54.4.6**   *P* **488**   *L* **19**   # **653**

William G. Lane   CSU, Chico

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

A global transmit disable function that disables all transmitters needs to be added

SuggestedRemedy

Add the following subclause after 54.4.6:

54.4.xxx MDIO PMD_transmit_disable function

If the MDIO is implemented and PMD_transmit_disable has been set to one, this function shall disable all optical transmitters so that each transmitter meets the requirements of the Average Launch Power of the OFF Transmitter in Table 54-7 (LX4) or 54-11 (LW4).

NOTE: this needs to be coordinated with clause 45

Proposed Response   *Response Status*   **Z**

Editor will resubmit comment on next ballot

Cl **54**   *SC* **54.4.6**   *P* **488**   *L* **20**   # **654**

William G. Lane   CSU, Chico

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

The title of this subclause is incorrect.

SuggestedRemedy

Change the title to "MDIO PMD lane by lane transmit disable function (optional)

Proposed Response   *Response Status*   **C**

ACCEPT.

Change included in D2.2

Cl **54**   *SC* **54.4.6**   *P* **488**   *L* **9**   # **652**

William G. Lane   CSU, Chico

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

The power down is ambiguous.

SuggestedRemedy

See editor's note in the draft

Proposed Response   *Response Status*   **C**

REJECT.

See comment 485

Cl **54**   *SC* **54.4.7**   *P* **488**   *L* **20**   # **339**

Dallesasse, John M.E   Molex Incorporated

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

A comment has been submitted on Clause 45 suggesting that a global transmit disable function be added to the MDIO interface for the WWDM PMD. Global disable would be required when the optional transmit disable function is implemented, with optional per lane disable. If this comment is approved, the PMD_transmit_disable function text will need modification.

SuggestedRemedy

Assuming the comment is approved, add the following text:
"1) When PMD_transmit_disable_0 is set to ONE, this function shall turn off all channels of the optical transmitter such that the transmitter meets the requirements of the Average Launch Power of the OFF Transmitter in Table 54-7 (LX4) or 54-11 (LW4)."and in front of the text of a):
"a) When a per lane transmit disable is supported, and when a PMD_transmit_disable_x variable ..."

Proposed Response   *Response Status*   **Z**

withdrawn

Cl **54** *SC* **54.4.7** *P* **488** *L* **30** **#** **655**

William G. Lane CSU, Chico

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

The PMD_Loopback function definition needs to be added to 54.4

SuggestedRemedy

Add the following subclause after 54.4.7:

54.4.xxx PMD_loopback function

If the MDIO is implemented, and PMD_loopback has been set to one, transmission request bit streams passed to the PMD shall be shunted directly to the PMD receive paths, overriding any signal detected by the optical receivers as specified in 54.2.1.3 and 54.2.2.2. The method of implementing PMD_loopback, including data presented at the MDI, is not defined by this standard.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **54** *SC* **54.4.x** *P* **494** *L* **4** **#** **54002**

Eric Gann

Comment Type **E** *Comment Status* **X**

SuggestedRemedy

Proposed Response *Response Status* **Z**

withdrawn - empty comment

Cl **54** *SC* **54.4.y** *P* **494** *L* **0** **#** **54003**

Ken Herrity

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

MDIO register for PMD ability bits is missing

SuggestedRemedy

Add the following new subclause:

54.xxx PMD management functions.

The registers listed in Table 54-x are required if the MDIO is implemented.

PMD ability register

This register is required if the MDIO is implemented. Bit assignments shall be as defined in 45._____.

Proposed Response *Response Status* **Z**

withdrawn

Cl **54** *SC* **54.5** *P* **495** *L* **13** **#** **54008**

Eric Gann

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

center wavelengths should be defined as ranges

SuggestedRemedy

change "nominal" to"ranges"

Proposed 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 **54** *SC* **54.5**

Cl **54**   *SC* **54.7**   *P* **490**   *L*   *#* **62**

Pepeljugoski, Petar   IBM

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

The link power budget does not take into account the cross channel mode partition noise. DFB lasers are known to have spectrum that extends over a very wide spectral range, meaning that there is an overlap with the wavelengths from the neighboring channels. This will pose a problem at the receiver, when the wavelengths from the desired channel are accompanied (and can not be separated) from the wavelengths from the interfering channel. This becomes a problem when the laser experiences mode partition noise, since the weak modes in the neighboring channel try to compensate a strong main mode. In this case, the mode partition noise will be independent of the distance and always at the maximum level. This effect is not taken into account into the link power budget and the link model.

SuggestedRemedy

Specify SMSR of 30 dB or better over the entire spectral range of the laser to guarantee that there will be no cross channel mode partition noise and modify the link model to take this into account.Alternatively, measure the cross channel mode partition noise contribution in each channel.

Proposed Response   *Response Status*   **C**

REJECT.

Suggested remedy is incomplete as it doesn't specify measurement methodologies. Group will continue to investigate this issue.

Cl **54**   *SC* **54.7.1**   *P* **490**   *L*   *#* **60**

Pepeljugoski, Petar   IBM

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

The side mode suppression ratio (SMSR) of 0.0 is not a specification. Every laser meets that specification, and as such is unnecessary.

SuggestedRemedy

Either remove the line, or assign more meaningful number.

Proposed Response   *Response Status*   **C**

REJECT.

Refer to comment 62 response

Cl **54**   *SC* **54.7.1**   *P* **490**   *L* **30**   *#* **657**

William G. Lane   CSU, Chico

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

The method for specifying RMS spectral width in tables 54-7 and 54-11 needs to be agreed upon

SuggestedRemedy

See editor's notes in D2.1

Proposed Response   *Response Status*   **C**

ACCEPT.

Incorporate editor's note into the table as a footnote to RMS spectral width

Cl **54**   *SC* **54.7.1**   *P* **490**   *L* **6**   *#* **656**

William G. Lane   CSU, Chico

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

D2.0 comment 54001 regarding the passband wavelength ranges defined in tables 54-7 and 54-11 is still open

SuggestedRemedy

Per agreement at the January interim, a group of interested participants has been formed to study the problem and have agreed to report at the March plenary.

Proposed Response   *Response Status*   **Z**

withdrawn

Cl **54**   *SC* **54.7.2**   *P* **491**   *L* **23**   *#* **658**

William G. Lane   CSU, Chico

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

D2.0 comments 1064 and 1065 regarding changing the receive sensitivities from ?W to dBm in Tables 54-8 and 54-12 are still open.

SuggestedRemedy

Change 38 micro W in table 54-8 to "-14.2 dBm"
30   -15.2
125   -9.03
42   -13.8

in both tables

Proposed Response   *Response Status*   **C**

REJECT.

Direct editor to make clause 54 units in table 54-8 consistent with clause 52

also fix similar situation in table 54-7

Cl **54**   *SC* **54.7.3**   *P* **498**   *L* **4**   # **54009**
Eric Gann

Comment Type **E**   *Comment Status* **A**
need to clarify the assumptions used in link model computations for table 54-9

SuggestedRemedy
Add "a minimum receiver bandwidth of 2500 MHz, and a DCD_DJ of 25 ps for MMF and 20.5 ps for SMF" after 1270 nm in the last footnote for table 54-9, change "is" to "are"

Proposed Response   *Response Status* **C**
ACCEPT.

Cl **54**   *SC* **54.7.4**   *P* **492**   *L* **8**   # **659**
William G. Lane   CSU, Chico

Comment Type **T**   *Comment Status* **A**
The lower frequency limit for high frequency jitter has not been specified

SuggestedRemedy
Provide an appropriate value

Proposed Response   *Response Status* **C**
ACCEPT.

Use 1.5 MHz

Cl **54**   *SC* **54.8**   *P* **492**   *L* **36**   # **558**
Grann, Eric   Blaze Network Product

Comment Type **E**   *Comment Status* **D**
For the 10GBase-LW4 standard, the signal is scrambled and one must account for baseline wander in the link model.

SuggestedRemedy
We need to add a section describing and defining the baseline wander penalty.

Proposed Response   *Response Status* **Z**
withdrawn

Cl **54**   *SC* **54.8.1**   *P* **493**   *L*   # **61**
Pepeljugoski, Petar   IBM

Comment Type **T**   *Comment Status* **R**
The side mode suppression ratio (SMSR) of 0.0 is not a specification. Every laser meets that specification, and as such is unnecessary.

SuggestedRemedy
Either remove the line, or assign more meaningful number.

Proposed Response   *Response Status* **C**
REJECT.

No longer applies to clause 54

Cl **54**   *SC* **54.8.1**   *P* **499**   *L* **29**   # **54010**
Eric Gann

Comment Type **E**   *Comment Status* **X**
the editor's note re table 54-11 needs to be incorporated

SuggestedRemedy
incorporate the editor's note

Proposed Response   *Response Status* **Z**
withdrawn

Cl **54**   *SC* **54.8.4**   *P* **495**   *L* **13**   # **660**
William G. Lane   CSU, Chico

Comment Type **T**   *Comment Status* **D**
The values in Table 54-14 were copied from the LX4 values and do not account for differences in the bit times between LX4 and LW4

SuggestedRemedy
Provide an appropriate values for LW4

Proposed Response   *Response Status* **Z**
withdrawn

Cl **54**   *SC* **54.9.1**   *P*   *L*   # **54028**
Bill Lane

Comment Type **E**   *Comment Status* **A**
Move editor's note to text,

SuggestedRemedy
do it

Proposed Response   *Response Status* **C**
ACCEPT.

Cl **54**   *SC* **54.9.10**   *P* **506**   *L* **35**   # **54019**

Eric Gann

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

a reference is needed

SuggestedRemedy

use annex 48a

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **54**   *SC* **54.9.10**   *P* **507**   *L* **47**   # **54021**

Ken Herrity

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

photodetector BW and4th order Bessel-Thomson filter values are needed

SuggestedRemedy

use 2.34 GHz --- 2 places

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **54**   *SC* **54.9.10**   *P* **509**   *L* **1**   # **54022**

Bill Lane

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

The editor's note needs to be incorporated

SuggestedRemedy

Incorporate the editor's note including values from comment 54021

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **54**   *SC* **54.9.12**   *P* **506**   *L* **47**   # **343**

Dallesasse, John M.E   Molex Incorporated

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

Missing a period at the end of step "e)" after "response values".

SuggestedRemedy

Correct

Proposed Response   *Response Status* **C**

ACCEPT.

Change included in D2.2

Cl **54**   *SC* **54.9.12**   *P* **512**   *L* **6**   # **54024**

Eric Gann

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

The laser in the text and fig 54-8 needs to be tunable

SuggestedRemedy

change "laser" to " tunable laser" -- 2 places

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **54**   *SC* **54.9.12**   *P* **512**   *L* **9**   # **54023**

Eric Gann

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

references are needed

SuggestedRemedy

use annex 48a

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **54**   *SC* **54.9.2**   *P* **497**   *L* **14-18**   # **28**

Stoltz, Mario   ChipIng.de, an Intel co

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

A "monochrometer" does not exist. "-meters" measure something. A monochromator filters optical wavelength, though. The latin ending "-ator" means "he who does (whatever)". Here, "he who monochromates". Two occurrences.

SuggestedRemedy

Replace with "monochromator"

Proposed Response   *Response Status* **C**

ACCEPT.

Change included in D2.2

Cl **54**   *SC* **54.9.2**   *P* **503**   *L* **5**   # **54012**

Eric Gann

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

The editor's note needs to be incorporated

SuggestedRemedy

do it

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **54**   *SC* **54.9.3**   *P* **503**   *L* **39**   # **54013**
Eric Gann

Comment Type **T**   *Comment Status* **A**
The editor's note needs to be dealt with

SuggestedRemedy
Use 52.8.4 metholgy modified to include a wavelength selector

Proposed Response   *Response Status* **C**
ACCEPT.

Editor to copy appropriate section from 52.8.4

Cl **54**   *SC* **54.9.4**   *P* **504**   *L* **3**   # **54014**
Eric Gann

Comment Type **T**   *Comment Status* **A**
The editor's note needs to be resolved

SuggestedRemedy
Use the methodology of 52.8.6 and add wavelength selector

Proposed Response   *Response Status* **C**
ACCEPT.

Editor to copy appropraite section from 52.8.6

Cl **54**   *SC* **54.9.5**   *P* **498**   *L* **53**   # **661**
William G. Lane   CSU, Chico

Comment Type **T**   *Comment Status* **A**
A transmitter eye mask is needed

SuggestedRemedy
Provide one

Proposed Response   *Response Status* **C**
ACCEPT.

Copy from clause 52 -- fig 52-8

Cl **54**   *SC* **54.9.5**   *P* **504**   *L* **31**   # **54015**
ken Herrity

Comment Type **E**   *Comment Status* **A**
Frequency values need to be defined

SuggestedRemedy
fr = 2.344 GHz

Proposed Response   *Response Status* **C**
ACCEPT.

Cl **54**   *SC* **54.9.5**   *P* **504**   *L* **53**   # **54016**
Ken Herrity

Comment Type **E**   *Comment Status* **X**
need a transmit eye diagram

SuggestedRemedy
Use the eye diagram from clause 52

Proposed Response   *Response Status* **Z**
withdrawn

Cl **54**   *SC* **54.9.8**   *P* **505**   *L* **31**   # **54017**
Ken Herrity

Comment Type **T**   *Comment Status* **A**
The jitter methodoly is incorrect

SuggestedRemedy
Delete current text and reference the test patterns and methodology defined in annex 48a and 48b

Proposed Response   *Response Status* **C**
ACCEPT.

Editor to provide reference text

Cl **54**   *SC* **54.9.9**   *P* **506**   *L* **23**   # **54018**
Eric Gann

Comment Type **E**   *Comment Status* **A**
a subclause reference is needed

SuggestedRemedy
replace the text in this subclause with "This test utilizes the test methodology and patterns of annex 48a and annex 48b."

Proposed Response   *Response Status* **C**
ACCEPT.

Cl **54**   *SC* **Table**   *P* **489**   *L* **6-12**   **#** **340**

Dallesasse, John M.E   Molex Incorporated

Comment Type **E**   *Comment Status* **A**   *acteristics/operating distance*

If the passband widths or center wavelengths are modified as per earlier comments, this table will need to be changed.

SuggestedRemedy

Change if required.

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **54**   *SC* **Table**   *P* **490**   *L*   **#** **323**

Herrity, Ken   Blaze Network Product

Comment Type **T**   *Comment Status* **D**   *acteristics/operating distance*

The laser wavelength ranges specified in table 54-7 are too narrow for practical VCSEL production.

SuggestedRemedy

Modify the laser wavelength ranges specified in table 54-7 to read as follows:
1265.0 - 1279.0
1290.3 - 1304.3
1315.6 - 1329.6
1340.9 - 1354.9

Proposed Response   *Response Status* **Z**

withdrawn

Cl **54**   *SC* **Table**   *P* **494**   *L* **10**   **#** **342**

Dallesasse, John M.E   Molex Incorporated

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

There is a spurious quotation mark in the header of the table.

SuggestedRemedy

Remove the quotation mark.

Proposed Response   *Response Status* **C**

ACCEPT.

Change included in D2.2

Cl **54**   *SC* **Table**   *P* **509**   *L* **12-16**   **#** **344**

Dallesasse, John M.E   Molex Incorporated

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

The table formatting needs to be adjusted.

SuggestedRemedy

Adjust formatting.

Proposed Response   *Response Status* **C**

ACCEPT.

Format change included in D2.2 -- lines only, all values remain the same

---

Cl **54**   *SC* **Table 54-12**   *P* **494**   *L*   **#** **27**

Stoltz, Mario   ChipIng.de, an Intel co

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

There is a floating " (quotation mark) in the top left cell of the table.

SuggestedRemedy

Erase the ".

Proposed Response   *Response Status* **C**

ACCEPT.

Editor's Note: Change included in D2.2

Cl **54**   *SC* **Table 54-12**   *P* **494**   *L* **27**   **#** **553**

Grann, Eric   Blaze Network Product

Comment Type **T**   *Comment Status* **D**   *acteristics/operating distance*

Vertical eye closure penalty for single mode fiber does not match link model for 2.488Gb/s.

SuggestedRemedy

Change 0.74dB to 0.22dB

Proposed 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 141 of 144

RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *Cl* **54**   *SC* **Table 54-12**

Cl **54**   *SC* **Table 54-13**   *P* **494**   *L* **43**   **#** **554**

Grann, Eric   Blaze Network Product

Comment Type **T**   *Comment Status* **R**   acteristics/operating distance

Table numbers do not match link model for 2.488Gb/s. Calculations should be done with a DCD=40ps to correspond to a scaled verson of gigabit ethernet.

SuggestedRemedy

Change Table 54-13 to

For 62.5 micron 500Mhz.km fiber
Operating distance = 387m (requires patch cord)
Lane insertion loss = 2.60
Link power penalties = 5.05
Unallocated margin = 0.35

For 50.0 micron 400Mhz.km fiber
Operating distance = 310m (does not require patch cord)
Lane insertion loss = 1.98
Link power penalties = 5.56
Unallocated margin = 0.46

For 50.0 micron 500Mhz.km fiber
Operating distance = 387m (does not require patch cord)
Lane insertion loss = 2.10
Link power penalties = 5.05
Unallocated margin = 0.85

For 10.0 micron
Operating distance = 10000m
Lane insertion loss = 7.14
Link power penalties = 1.61
Unallocated margin = 0.25

Proposed Response   *Response Status* **C**

REJECT.

Does not apply

Cl **54**   *SC* **Table 54-14**   *P* **495**   *L* **15**   **#** **555**

Grann, Eric   Blaze Network Product

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

Jitter budget is not scaled for 2.488Gb/s operation.

SuggestedRemedy

Change Table 54-14 to read

Compliance point	UI	ps	UI	ps
TP1	.240	96.5	0.1	40.2
Tp1 to Tp2	.284	114.2	0.1	40.2
Tp2	.431	173.3	0.2	80.4
Tp2 to Tp3	.170	68.3	0.05	20.1
Tp3	.510	205.0	0.25	100.5
Tp3 to Tp4	.332	133.5	0.212	85.2
Tp4	.749	301.1	0.462	185.7

Proposed Response   *Response Status* **C**

REJECT.

Does not apply

Cl **54**   *SC* **Table 54-15**   *P* **508**   *L* **39**   **#** **557**

Grann, Eric   Blaze Network Product

Comment Type **T**   *Comment Status* **D**   acteristics/operating distance

Table to needs to be corrected to reflect correct distances and channel insertion losses for 10GBase-LX4 and 10GBase-LW4.

SuggestedRemedy

Break into 2 tables. One for 10GBase-LX4 and one for 10GBase-LW4. Each table should have corrected distances and channel insertion losses to reflect the link model.

Proposed Response   *Response Status* **Z**

withdrawn

Cl **54**   *SC* **Table 54-16**   *P* **509**   *L*   **#** **31**

Stoltz, Mario   ChipIng.de, an Intel co

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

"Unit" entries in lines 4, 5 and 7 of the table do not comply with ANSI/IEEE 268-1992 (Standard for Metric Practice) Cls. 3.5.3.2.

SuggestedRemedy

Change line 4 and 5 entries to MHz*km (no spaces) or MHz km;Change line 7 entry to ps/nm^2*km (no spaces) or ps/nm^2 km.

Proposed Response   *Response Status* **C**

ACCEPT.

Changes included in D2.2

Cl **54**   *SC* **Table 54-6**   *P* **489**   *L* **30**   **#** **551**

Grann, Eric   Blaze Network Product

Comment Type **T**   *Comment Status* **D**   acteristics/operating distance

The distances quoted can not be achieved with the current link specifications. From the link model, using scaled minimum receiver bandwidths and DCD jitter numbers (2500MHz and 32ps) from the 1 Gigabit standards, one cannot achieve the specificied distances. Also, for a 62.5 micron fiber, it is required to have a patch cord in order to achieve the 500MHz.km bandwidth quoted.

SuggestedRemedy

Add an asteris to the 62.5 micron MMF line to state that a patch cord is required. As in the 1 Gigabit standard.

Change the maximum distances to read
62.5 micron   500MHz.km   2 to 280
50.0 micron   400MHz.km   2 to 220
50.0 micron   500MHz.km   2 to 280
10.0 micron   n/a   2 to 9000

Proposed Response   *Response Status* **Z**

withdrawn

Cl **54**   *SC* **Table 54-7**   *P* **490**   *L* **1**   **#** **559**

Grann, Eric   Blaze Network Product

Comment Type **T**   *Comment Status* **A**   acteristics/operating distance

The current passband specifications for each wavelength of the WWDM solution, as defined in Clause 54 Table 54-7, Table 54-8, Table 54-11, and Table 54-12, is +5.7nm. This passband specification constrains both the transceiver manufacturers and the laser manufacturers. For a transceiver operating in a 0 to 70 degree C environment, the junction temperature of the laser can have a larger temperature range due to heating effects over time. These heating effects are due to several factors, some of which are electric power of the ACIS in the package at turn on and in a minimum and maximum condition, varying air flow, packaging variations, and average current changes on the laser. In a worst case condition, one might see an additional 20 degrees C of change in the laser junction temperature. The total worst case laser junction temperature delta could be as high as 90 degrees C. A survey of several laser manufacturers, both DFB and VCSEL manufacturers, indicates a worst case laser wavelength thermal drift of 0.09nm/oC. With a current passband spec of +5.7nm (11.4nm total width), the laser manufacturing tolerances are currently 11.4 - (90*0.09) = +1.65nm (3.3nm total). This manufacturing tolerance significantly reduces the fabrication yield. By broadening this spec, the laser manufacturing yields can be significantly increased, and therefore significantly reduce the cost of the devices. A passband specification of +6.7nm (13.4nm total) would achieve these broadened manufacturing tolerances, with minimal change and minimal complexity of the wavelength selecting filters within the demultiplexer of the transceiver.

SuggestedRemedy

Change the lane wavelengths in Tables 54-5, 54-7, 54-8, to

1269.0 - 1282.4 nm
1293.5 - 1306.9 nm
1318.0 - 1331.4 nm
1342.5 - 1355.9 nm

Proposed Response   *Response Status* **C**

ACCEPT.

see comments 323 and 340

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 **54**   *SC* **Table 54-7**

Cl **54**   *SC* **Table 54-9**   *P* **491**   *L* **42**   **#** **552**

Grann, Eric   Blaze Network Product

Comment Type   **T**   *Comment Status*   **D**   acteristics/operating distance

The table results do not match the link modeling results. From the link model, using scaled minimum receiver bandwidths and DCD jitter numbers (2500MHz and 32ps) from the 1 Gigabit standards, one cannot achieve the specificied distances.

SuggestedRemedy

Change the tables to read

For 62.5 micron 500Mhz.km fiber
Operating distance = 280m (requires patch cord)
Lane insertion loss = 2.43
Link power penalties = 4.68
Unallocated margin = 0.89

For 50.0 micron 400Mhz.km fiber
Operating distance = 220m (does not require patch cord)
Lane insertion loss = 1.85
Link power penalties = 5.18
Unallocated margin = 0.98

For 50.0 micron 500Mhz.km fiber
Operating distance = 280m (does not require patch cord)
Lane insertion loss = 1.93
Link power penalties = 4.68
Unallocated margin = 1.39

For 10.0 micron
Operating distance = 9000m (to acheive 10km, need to change link budget)
Lane insertion loss = 6.63
Link power penalties = 2.29
Unallocated margin = 0.09

Proposed Response   *Response Status*   **Z**

withdrawn

Cl **54**   *SC* **Tables**   *P* **490**   *L* **69**   **#** **334**

Dallesasse, John M.E   Molex Incorporated

Comment Type   **T**   *Comment Status*   **A**   acteristics/operating distance

The current passband width of 11.4 nm does not allow sufficient wavelength tolerance for future use of VCSELs. Anticipated yields by companies currently involved in VCSEL manufacturing suggests that VCSEL-based approaches will not compete favorably on a cost basis with DFB-based approaches if the current passband width is maintained. It is possible to increase the width of this passband slightly without compromising the cost and performance of the demultiplexer. Such an increase would enable use of future VCSEL technologies in WWDM-based transceivers.

SuggestedRemedy

Increase the passband width to 13.4 nm while maintaining the current band-center to band-center spacing of 24.5 nm. This would change the lane wavelengths shown in Tables 54-7, 54-8, 54-11, and 54-12 to the following:1269.0 - 1282.4
1293.5 - 1306.9
1318.0 - 1331.4
1342.5 - 1355.9

Proposed Response   *Response Status*   **C**

ACCEPT.

Resolved in 559