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Co. Lucent Technologies

Cl 38 **SC** 10.1 **P** 38.17 **L** 44

Comment Type T **Comment Status** A

#16

Maintaining polarity needs to be specific.

SuggestedRemedy

Move sentence two from subclause 38.10.2 (line 3) to this subclause. Presently the text describing the positions of the Tx and Rx ports in a receptacle are informative. They must be normative to ensure polarity maintenance within a structured cabling environment.

Proposed Response **Response Status** W

Accept moving sentence to line 38, page 38.17 as modified - "The receive= side of the receptacle shall be located on the left when viewed looking into the= optical ports with the keys on the bottom surface.

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Cl 38 **SC** 10.1 **P** 38.17 **L** 43

Comment Type T **Comment Status** A

#15

Reference to "easy connection and reconnection" is meaningless because it is non-specific.

SuggestedRemedy

Delete text.

Proposed Response **Response Status** W

OK, section has been deleted

Comment ID 134 **Topic**
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Cl 38 **SC** 2.1 **P** 38.3 **L** 42

Comment Type T **Comment Status** A

#1

The present definition of the standard reference point for the PMD sublayer= is the system bulkhead. The bulkhead is taken to mean the standard SC receptacle defined in Figure 38-5. The standard reference points for the= PMD sublayer should not be defined at the system bulkhead for the transmitter. = The reference point should instead be the output from a short (=9C 5 m) patch= cord attached to the receptacle. This definition is in line with previous= definitions (10BASE-F) and with structured cabling systems. The reference point for the=

optical receiver should be at the output of standard SC connector= terminating the exit end of the fiber media that will be plugged into the receiver's SC= receptacle.

SuggestedRemedy

Modify paragraph 1 to read:
For purposes of system conformance, the PMD sublayer is standardized at the=

following points. The optical transmit signal is defined at the output end= of a 2 meter patch cord (TP2) connected to the transmitter receptacle defined in 38.10.1. The optical receive signal is defined at the output of the cable= plant (TP3) connected to the receiver receptacle defined in 38.10.1.

Modify Figure 38-1 to reflect the above changes. The system bulkheads should=

be at the edges of the boxes labeled Optical PMD Transmitter and Optical PMD=

Receiver. Patch cords should be drawn between these bulkheads and the= optical cable plant. TP2 is at the exit end of the Transmitter patch cord. TP3 is at= the

Type: TR/technical required T/technical E/editorial
Comment: X/received D/dispatched for consideration A/accepted R/rejected
Response: O/open W/written S/sent to commentor for review C/closed U/unsatisfied Z/withdrawn

exit end of Receiver patch cord.

Proposed Response **Response Status** W

Accept, with revision

Modify paragraph 1 to read:
For purposes of system conformance, the PMD sublayer is standardized at the=

following points. The optical transmit signal is defined at the output end=
of a 5
meter or less patch cord (TP2) of a type consistent with the link type=
connected
to the transmitter receptacle defined in 38.10.1. The optical receive signal=
is
defined at the output of the cable plant
(TP3) connected to the receiver receptacle defined in 38.10.1.

Modify Figure 38-1 to reflect the above changes. The system bulkheads should=

be at the edges of the boxes labeled Optical PMD Transmitter and Optical PMD=

Receiver. A patch cord should be drawn between the transmitter bulkhead and=

the optical cable plant. TP2 is at the exit end of the Transmitter patch=
cord. TP3
is at the exit end of the cable plant.
Note: a graphical redraw is necessary for Figure 38-1.

Comment ID 137 **Topic**
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Cl 38 **SC** 3.1 **P** 38.6 **L** 18

Comment Type T **Comment Status** A

#4

Extinction ratio values are missing from Table 38-2.

SuggestedRemedy

Add a row for the extinction ratio values
used in spread sheet analysis.

Proposed Response **Response Status** W

OK, Add row with values of 25 & 25 dB.

Comment ID 177 **Topic**
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Co. Fujikura America Inc.

Cl 38 **SC** 38.11.4.3 **P** 38.22 **L** 28

Comment Type T **Comment Status** A

Revisiting comment #69 in which we changed the column headings for MMF to read "50/62.5 MMF value". In effect we accepted the first sentence of the=

suggested remedy and rejected the rest. I believe there was an intent to=
delete
the PICs entry in comment 69.

SuggestedRemedy

Delete PICs item PML-1 from subclause 38.11.4.3

Proposed Response **Response Status** W

Accept

Comment ID 64 **Topic**
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Cl 38 **SC** 38.2.4.1 **P** 38.4 **L** 51

Comment Type T **Comment Status** R

Even though signal detect is optional, its behavior should be more tightly specified for cases when it is implemented. The PICS only mandate that SIGNAL_DETECT=3DFAIL when the link is unplugged or the remote transmitter is turned off. However, the PICS do no prevent an implementation from setting SIGNAL_DETECT=3DFAIL when the signal is at the limits of the receive sensitivity. This is because the commentary on margins contains no "shalls". If "shalls" were added, they would be meaningless unless attached to quantitative values.

SuggestedRemedy

Specify signal detect assertion and deassertion thresholds in the form of a "shall" statement with quantitative values. Propose that the "shall assert" level be the minimum receiver sensitivity, and the "shall deassert" level be this level minus 10 dBm. These parameters should be added to tables 38-4 and 38-9.

Proposed Response **Response Status** W

Reject: It is the intent of the committee to allow a broad range of implementations. Specific assert levels could unduly restrict specific implementations.

Comment ID 129 **Topic**
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Cl 38 **SC** 38.4.2 **P** 38.10 **L** 3

Comment Type T **Comment Status** A

Add phrase "for purposes of overshoot and undershoot only."

SuggestedRemedy

See comment

Proposed Response **Response Status** W

Comment was accepted
Put "The transmit mask is not used for response time and jitter= specification" into
38.5.5 replacing last sentence in line 37-38 and note in 40 and remove all= other
eye/rise/fall..from clause.

Comment ID 72 **Topic**
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Cl 38 **SC** 38.5.1 **P** 38.11 **L** 09

Comment Type T **Comment Status** A

Referring to "A short patch cable from...shall...". The word "short" is not quantitative and makes conformance difficult to verify.

SuggestedRemedy

Suggest change "A short patch cable..." to "A patch cable no longer than 0.5 meter in length..." Incorporate appropriate changes to the PICS (38.11.4.4).

Proposed Response **Response Status** W

Accept with change to no longer than five meters for patch cable length.

Comment ID 126 **Topic**
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Co. IBM AS/400 Division

Cl 38 **SC** 38.5.5 **P** 38.11 **L** 41

Comment Type T **Comment Status** R

Change word "ringing" in Note to "undershoot"

SuggestedRemedy

See comment

Proposed Response **Response Status** W

Reject - see comment 129

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Cl 38 **SC** 38.5.6 **P** 38.12 **L** 42

Comment Type T **Comment Status** A

The measurement procedure for transmit rise/fall times should be mandated.

SuggestedRemedy

Suggest change "Transmit rise/fall times are measured..." to "Transmit rise/fall times shall be measured..." and add the appropriate items to the PICS (38.11.4.4)

Proposed Response **Response Status** W

OK

Comment ID 128 **Topic**
Name Jonathan Thatcher
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Cl 38 **SC** 38C **P** 38.31 **L** All

Comment Type T **Comment Status** A

Need to remove text: "******worst case data pattern ******"

SuggestedRemedy

Remove Annex 38C entirely. This annex would be necessary if 3z decides to=
use
a scope method instead of a BERT method to measure total jitter. Otherwise,=

wait until FCJWG finishes its work before added to standard.

Proposed Response **Response Status** W

OK, rewrote subclause 38.5.9 to allow Annex 38C to be deleted and changed 38.5.10 and 38.5.11 to "according to the method in FC-PH."

38.5.9 Total jitter measurements
Total jitter shall be measured according to the method in FC-PH Appendix A,=

subclause A.4.2, Active output interface eye opening measurement. The
method utilizes a BERT (Bit Error Rate Test) test set. References to use of=
the
Bessel-Thompson filter should substitute in the BT filter defined in this=
clause.
(see 38.5.5). The test shall utilize an alternating K28.5 and 2 (to the=
7th-1) PRBs
to determine worse case jitter.

Jitter measurement may use a clock recovery unit ("golden PLL")to remove low=

frequency jitter from the measurement as shown in Figure 38-3 ---- on page=
13.
The clock recovery unit has a low pass filter with 20 dB/decade roll off=
with -3 dB
point of 637 kHz. For this measurement, the recovered clock will run at the=
baud
rate. The golden PLL is used to approximate the PLL in the deserializer=
function
of the PMA. The PMA deserializer is able to track out a large amount of low=

frequency jitter (such as drift or wander) below its bandwidth. This low=
frequency

jitter would create a large measurement penalty but not affect operation of= the
link.

Comment ID 132 **Topic**
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Cl 38 **SC** 39.3.4; Table **P** 39.7 **L** 13 tp 28

Comment Type T **Comment Status** A

The jitter numbers in Table 38.5 are not mathematically correct.

SuggestedRemedy

The following were calculated by Del Hanson

Corrected jitter table:

	Total Jitter		Deterministic Jitter		Random Jitter	
	ps	UI	ps	UI	ps	UI
TP1	192	0.240	96	0.12	96	0.12
1 to 2	227	0.284	80	0.10	147	0.184
TP2	352	0.440	176	0.22	176	0.22
2 to 3	96	0.120	0	0.00	96	0.12
TP3	376	0.470	176	0.22	200	0.25
3 to 4	240	0.300	184	0.23	56	0.07
TP4	568	0.710	360	0.45	208	0.26

Proposed Response **Response Status** W

Agree with comment, table columns should be converted such that UI precedes= ps values.

Comment ID 140 **Topic**
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Cl 38 **SC** 4.1 **P** 38.9 **L** 33

Comment Type T **Comment Status** A

#7

Extinction ratio values are missing from Table 38-7.

SuggestedRemedy

Add a row for the extinction ratio values
used in spread sheet analysis.

Proposed Response **Response Status** W

OK, Add a row with values of 25, 25, 25 dB

Comment ID 141 **Topic**
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Cl 38 **SC** 4.2 **P** 38.10 **L** 14

Comment Type T **Comment Status** A

#8

The Trise and Tfall 20-80% values are missing from Table 38-8.

SuggestedRemedy

Add a row for Trise and Tfall specification per agreement with Change= Summary,
Major Change 4. on page 38.1. Value should be 0.26 ns in both columns.

Proposed Response **Response Status** W

OK, add a row with values of 0.26 & 0.26 ns

Comment ID 142 **Topic**
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Cl 38 **SC** 5.2 **P** 38.11 **L** 15

Comment Type T **Comment Status** A

#9

OFSTP-2 is for singlemode fiber only.

SuggestedRemedy

Replace OFSTP-2 with FOTP-95 which applies to both MM and SMF and is an absolute optical power test for optical fibers and cables.

Proposed Response **Response Status** W

OK

Comment ID 143 **Topic**
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Cl 38 **SC** 5.3 **P** 38.11 **L** 22

Comment Type T **Comment Status** A

#10

Clarify extinction ratio definition.

SuggestedRemedy

Delete "minimum acceptable" in line 22 and add the following to the end of the sentence to tie in with clauses 38.3.3 and 38.3.4: "... at the center of the eye."

Proposed Response **Response Status** W

Accept with clarification,

Delete third sentence in subclause 38.5.3 beginning on line 21. Also= replace
"shall be" with "is" in line 23. Finally, change second sentence beginning= on line
20 to "This measurement may be made with the node transmitting continuous K28.7 characters.
Also add note: A K28.7 will give a 1010 sequence at 1/5 the line rate.

Comment ID 144 **Topic**

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Cl 38 **SC** 5.8 **P** 38.13 **L** 1

Comment Type T **Comment Status** A

#11

No optical receive rise/fall times are included anywhere in clause 38.

SuggestedRemedy

Delete clause. The link analysis model provides a means of calculating link distances without setting the receiver optical Trise and Tfall values.

Proposed Response **Response Status** W

Subclause deleted. Also, add receiver bandwidth =3D 1000 MHz in two model=

parameter tables in the informative annex.

Comment ID 145 **Topic**

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Cl 38 **SC** 9 **P** 38.16 **L** 6

Comment Type T **Comment Status** R

#12

The reference wavelength for SMF is inaccurate.

SuggestedRemedy

Change the reference wavelength for SMF from 1300 to 1310 nm. This is the widely accepted value used to characterize SMF.

Proposed Response **Response Status** W

Rejected because this is a nominal wavelength reference for the two ranges= in the standard.

Comment ID 152 **Topic**

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Cl 38 **SC** A.8 **P** 38.28 **L** all

Comment Type T **Comment Status** R

#19

The model for cable attenuation does not reflect the general case attenuation equation. The coefficients of 0.94 and 1.05 are correct only for the specific case where the cable has attenuation of exactly 3.5 dB/km at 850 nm and 1.5 dB/km at 1300 nm. Another term was added to the equation (R/C) perhaps in an attempt to generalize the equation for any cable attenuation coefficients, but does not produce this result.

SuggestedRemedy

Replace the present equation with the more correct general forms. Different coefficients apply to cables with different specified operating wavelengths, such as MMF and SMF. Also, these equations do not predict "water peak" absorption region effects.

The general form of this equation that can be applied to cables with attenuation coefficients specified at 0.85 and 1.3 micron wavelengths is:
Attenuation =3D L [0.64(C sub 0.85 - C sub 1.3) / lambda ^ 4
+ 1.22 C sub 1.3 - 0.22 C sub 0.85]
where:
Attenuation is in dB,
L is the length of the cable,
C sub 0.85 is the attenuation coefficient at 0.85 microns in dB/km,
C sub 1.3 is the attenuation coefficient at 1.3 microns in dB/km,
lambda is the operating wavelength of interest in microns.

The general form of this equation that can be applied to cables with attenuation coefficients specified at 1.31 and 1.55 micron wavelengths is:
Attenuation =3D L [6.01(C sub 1.31 - C sub 1.55) / lambda ^ 4
+ 2.04 C sub 1.55 - 1.04 C sub 1.31]
where:
Attenuation is in dB,
L is the length of the cable,
C sub 1.31 is the attenuation coefficient at 1.31 microns in dB/km,
C sub 1.55 is the attenuation coefficient at 1.55 microns in dB/km,
lambda is the operating wavelength of interest in microns.

Proposed Response **Response Status** W

Partial Accept with comment

The attenuation, in dB, of cabled optical fiber for a particular link length= is
modeled by the following equation:

[insert present equation 19]

The equation is based on the maximum allowable attenuation specifications= for
MMF, but can be applied to SMF in the 1300 nm operating region.

Where: L=3Dlink length in km.

For 1000BASE-SX links:
R sub l =3D the actual cable attenuation in dB/km @ 850nm
C sub l =3D 3.5 dB/km

For 1000BASE-LX links:
R sub l =3D the actual cable attenuation in dB/km @ 1300nm for
MMF or @ 1310 nm for SMF
C sub l =3D 1.5 dB/km

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Co. Sumitomo Electric Lightwave

Cl 38 **SC** Tables 38.3 and **P** 7 & 10 **L** 24 & 19

Comment Type T **Comment Status** R

This item is not applicable to present capabilities of many module= manufacturers
and would require extensive modifications. By definition, this item could= entail
further definitions of Transmit Disable, Signal Detect (optional to standard= at this
time), and Assert/Deassert parameters of power level, response time, and hysteresis.

SuggestedRemedy

Delete following item:
Launch power of Off Transmitter (max) -30 dBm (max)

Proposed Response **Response Status** W

Rejecting comment - This creates other unresolved issues.

Comment ID 176 **Topic**
Name Jonathan Thatcher
Email
Phone
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Co. IBM AS/400

Cl 38 **SC** **P** **L**

Comment Type E **Comment Status** A

Accept, per Ft Lauderdale meeting, changes in clause 38 would be forthcoming=

in consequence of the work of TIA 2.2. Changes in Bandwidth and Effective=

Modal Bandwidth need to be made throughout the document.

SuggestedRemedy

Accept the clause 38 modal bandwidth proposal (Change Summary D3 to proposal .1) as presented July, 1997 in Maui.

Proposed Response **Response Status** W

Accept with:
Change Table 38.8 dispersion slope of 50um to l sub 0 -1190.
Add b superscript to 62.5um, 850nm, of modal bandwidth in Table 38.8.
Table 38.11 needs 25 in extinction ratio box instead of dB
Change table on page 38.10, line 25 heading to WCMB from modal bandwidth. =

Make same change to table on page 38.11
Delete "20-80%" from heading on table on page 38-11, line 32.

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Cl 38 **SC** **P** **L**

Comment Type E **Comment Status** A

Definitions are needed

SuggestedRemedy

Accept definitions list prepared by Paul Kolesar with amendments below:

802.3z Clause 38 definitions
Paul Kolesar
7/3/97

EIA - Electronic Industries Association.

TIA - Telecommunications Industry Association.

ISO - International Organization for Standardization.

IEC - International Electrotechnical Commission.

MMF - multimode fiber

SMF - singlemode fiber

power budget - the minimum optical power available to overcome the sum of attenuation plus power penalties of the optical path between the transmitter= and receiver calculated as the difference between the minimum transmitter launch=

power (min.) and the receive power (min.).

RIN - relative intensity noise. The ratio of the variance in the optical= power to the average optical power.

mode partition noise - Amplitude, frequency and phase noise in the detected=

optical signal due to the interaction of the modes of a multimode laser and= the optical dispersion of the link

mode partition coefficient - a value between 0 and 1 representing the= tendency of a laser to produce mode partition noise.

modal noise penalty - the power penalty produced by the inclusion of mode selective loss elements (such as connectors and splices) in multimode fiber= optic links using coherent sources.

fiber attenuation - the static loss per unit length of the fiber at a= particular wavelength, usually expressed in dB/km.

modal bandwidth - the bandwidth of a multimode fiber due to dispersion= caused by variations in speed of the propagating modes.

WCMB - worst case modal bandwidth. The lowest value of the modal bandwidth=

found when measured using either an overfilled launch (OFL) or a radial overfilled launch (ROFL).

OFL - overfilled launch. The overfilled launch condition that excites both= radial and azimuthal modes defined in TIA-455-54A.

ROFL - radial overfilled launch. A launch condition created when a multimode=

optical fiber is illuminated by the coherent optical output of a source= operating in its lowest order transverse mode in a manner that excites predominantly the radial modes of the multimode fiber.

EMB - effective modal bandwidth. The modal bandwidth that occurs with a specific source and specific multimode fiber combination.

zero dispersion wavelength - That wavelength where the chromatic dispersion= of a fiber is at its minimum.

dispersion slope - The rate of change of the chromatic dispersion of a fiber= with wavelength.

receiver eye opening - the interval in time within a bit period where the= sampled data value will have a probability of error less than the specified bit= error ratio (BER).

BER - bit error ratio. The ratio of the number of bits received in error to=

the total
number of bits received.

Q - one half of the ratio of peak-to-peak signal to RMS noise.

extinction ratio - the ratio of the average optical power representing a=
logical one
to the average optical power representing a logical zero measured when
transients have settled.

RMS Spectral Width - the optical wavelength range as measured by FOTP-127.=

FOTP - fiber optic test procedure.

OFSTP - optical fiber system test procedure.

link attenuation - the static loss of a link between a transmitter and=
receiver. It
includes the loss of the fiber, connectors, and splices.

link penalties - the power penalties of a link not attri

Proposed Response **Response Status** C

done

Comment ID 147 **Topic**

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Cl 38 **SC** 10.1 **P** 38.17 **L** 42

Comment Type E **Comment Status** A

#14

Inaccurate reference to mating connector.

SuggestedRemedy

Replace reference to Table 38-10 with a reference to IEC 874-14
called out in the paragraph above.

Proposed Response **Response Status** W

Accept with comment - An error was found in line 36 which references IEC=
874-
14. This should be IEC 874-4. Change line 35 to "...optical connector=
(plug
and receptacle) shall be the duplex SC.." Also delete ".and Receptacle"=
from
line 31. Finally, delete complete section regarding MDI optical receptacle=
from
lines 40 to 45.
Change figure 38-5 call out of Connector to Plug. Also delete "and=
receptacle"
from Figure 38-5 title.
Finally, delete "and receptacle" from line 3 page 38.18.

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Cl 38 **SC** 3 **P** 38.5 **L** 19

Comment Type E **Comment Status** A

#2

The first sentence is redundant with 38.2.1.

SuggestedRemedy

Delete the first sentence.

Proposed Response **Response Status** W

OK

Comment ID 136 **Topic**
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Cl 38 **SC** 3.1 **P** 38.6 **L** all

Comment Type E **Comment Status** A

#3

This section should be informative.

SuggestedRemedy

Move section to the informative annex 38A.

Proposed Response **Response Status** W

OK

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Cl 38 **SC** 38.1.1 **P** 38.1 **L** 47

Comment Type E **Comment Status** R

Implementation of the PMD service interface should be required for the purpose of interoperability with the PMA.

SuggestedRemedy

Change "The following specifies the services provided by the PMD." to "The following specifies the services that shall be provided by the PMD." Add a PICS item to 38.11.4.1 to correspond with the new "shall": "FN-x, compliance with PMD service interface of 38.1.1, 38.1.1, M, Yes[], "

Proposed Response **Response Status** W

Rejected because this is an abstract interface not tied to a particular implementation. Page 38.3, lines 48-49, TP1 and TP4 are not system compliance points.

Comment ID 179 **Topic**
Name Bob Musk
Email
Phone
Fax
Co. HP

Cl 38 **SC** 38.10.1 **P** 38.17 **L** 36

Comment Type E **Comment Status** A

IEC reference should refer to Interface Standard document to include= adapters.

SuggestedRemedy

Change reference IEC 874-14 to IEC 1754-4.

Proposed Response **Response Status** W

OK

Comment ID 127 **Topic**
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Cl 38 **SC** 38.10.1 **P** 38.16 **L** 40

Comment Type E **Comment Status** A

"MDI optical receptacle" should be a subclause heading (38.10.2)

SuggestedRemedy

See comment

Proposed Response **Response Status** W

OK

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Cl 38 **SC** 38.10.4 **P** 38.14 **L** 34

Comment Type E **Comment Status** R

Each link and link element (jumper) shall be crossed over implies that there may only be an odd number of links and link elements in a transmission path.

SuggestedRemedy

Suggest change to "..., optical link segments shall be crossed over to ensure proper connection between optical transceivers" to eliminate confusion. link segment, as defined in 1.4.110 defines the transmission path between two MDIs. Perhaps I am not interpreting the definition of link and link element properly.

Proposed Response **Response Status** W

Rejected since this is achieved automatically by following building wiring= system
practice and use of duplex SC connectors as specified in subclause 38.10. =

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Cl 38 **SC** 38.10.4 **P** 38.18 **L** 37

Comment Type E **Comment Status** R

The statement regarding cross-over functions seems to conflict with the requirement of 38.10.2: "The receptacle shall ensure that polarity is maintained." An internal cross-over seems to be expressly forbidden by the standard.

SuggestedRemedy

Suggest deleting the statement.

Proposed Response **Response Status** W

Reject. Remove section 38.10.3 Crossover function and remove Item LI-6 from=

table 38.11.4.5.

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Cl 38 **SC** 38.11.4.1 **P** 38.21 **L** 35

Comment Type E **Comment Status** A

Support of PICS items FN-3 and FN-4 implies support of FN-2. Therefore, FN-2 is redundant.

SuggestedRemedy

Delete FN-2. This lines up with what was done for clause 39.

Proposed Response **Response Status** W

OK, also need to remove shall in line 36, subclause 38.2 of page 38.3.

Comment ID 67 **Topic**

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Cl 38 **SC** 38.11.4.2 **P** 38.22 **L** 11

Comment Type E **Comment Status** R

Regarding item PMS-3, only overshoot and undershoot are normative.

SuggestedRemedy

Suggest change to read: "PMS-3, transmitter overshoot/undershoot, 38.3.2, SX:M, Yes[] N/A[], measured from transmit eye per 38.5.5"

Proposed Response **Response Status** W

Rejected - Changes due to comment 129 invalidate this comment. Action: correct reference on page 38.22, line 11, from 38.5.6 to 38.5.5.

Comment ID 70 **Topic**

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Cl 38 **SC** 38.11.4.3 **P** 38.22 **L** 33

Comment Type E **Comment Status** R

Regarding PML-3, only overshoot and undershoot are normative.

SuggestedRemedy

Suggest change to read: "PML-3, transmitter overshoot/undershoot, 38.4.2, LX:M, Yes[] N/A[], measured from transmit eye per 3.5.5"

Proposed Response **Response Status** W

Rejected - Changes due to comment 129 invalidate this comment. Action: correct reference on page 38.22, line 11, from 38.5.6 to 38.5.5.
Duplicate of comment 67 but for LW, PIC on PML3 on pg. 38.22, line 33.

Comment ID 62 **Topic**

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Cl 38 **SC** 38.2.2 **P** 38.4 **L** 26

Comment Type E **Comment Status** A

The conversion from tx_bit to optical power level should be mandated to guarantee interoperability.

SuggestedRemedy

Change "The higher optical power level corresponds to tx_bit=3DONE" to "The higher optical power level shall correspond to tx_bit=3DONE." Add a PICS item to 38.11.4.1, "FN-x, interpretation of tx_bit, 38.2.2, M, Yes[], higher optical power level corresponds to tx_bit=3DONE."

Proposed Response **Response Status** W

OK

Comment ID 63 **Topic**

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Cl 38 **SC** 38.2.3 **P** 38.4 **L** 32

Comment Type E **Comment Status** A

The conversion from optical power level to rx_bit should be mandated to guarantee interoperability.

SuggestedRemedy

Change "The higher optical power level corresponds to rx_bit=3DONE" to "The higher optical power level shall correspond to rx_bit=3DONE." Add a PICS item to 38.11.4.1, "FN-x, definition of rx_bit, 38.2.2, M, Yes[], higher optical power level corresponds to rx_bit=3DONE."

Proposed Response **Response Status** W

OK

Comment ID 65 **Topic**

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Cl 38 **SC** 38.3 **P** 38.5 **L** 21

Comment Type E **Comment Status** A

If a device meets the requirements of 38.3, all media types in table 38-1 should be supported. If the requirements of 38.3 are not sufficient, the statement that all media types SHALL be supported does not really help the PMD implementor. Therefore, I believe this statement to be redundant.

SuggestedRemedy

Suggest change "A 1000BASE-SX complaint transmitter shall be capable of supporting..." to "A 1000BASE-SX compliant transmitter is capable of supporting..." Delete PICS item PMS-1 from 38.11.4.2.

Proposed Response **Response Status** W

OK

Comment ID 66 **Topic**

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Cl 38 **SC** 38.3.2 **P** 38.7 **L** 03

Comment Type E **Comment Status** A

reference to table 38-2 should be to table 38-3.

SuggestedRemedy

change reference from 38-2 to 38-3.

Proposed Response **Response Status** W

OK

Comment ID 130 **Topic**

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Co. IBM AS/400 Division

Cl 38 **SC** 38.3.2 and 3 **P** 38.7 **L** 3, 35

Comment Type E **Comment Status** A

Incorrect references for Table 38-2 and 38.3

SuggestedRemedy

change Table 38-2 reference to Table 38.3, and Table 38.3 reference to Table= 38.4

Proposed Response **Response Status** W

OK

Comment ID 68 **Topic**

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Cl 38 **SC** 38.3.3 **P** 38.7 **L** 35

Comment Type E **Comment Status** A

Reference to table 38-3 should be to table 38-4.

SuggestedRemedy

Change reference from 38-3 to 38-4.

Proposed Response **Response Status** W

OK

Comment ID 71 **Topic**

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Cl 38 **SC** 38.3.4 **P** 38.8 **L** 03

Comment Type E **Comment Status** R

Both SX and LX must meet the jitter requirements of table 38-5.

SuggestedRemedy

Change "The 1000BASE-SX PMD shall..." to "The 1000BASE-SX PMD and the 1000BASE-LX PMD shall..."

Proposed Response **Response Status** W

Reject - Move 38.3.4 to become new 38.x where x replaces 38.5 position. Reference new 38.5 from 38.3 and 38.4.

Comment ID 182 **Topic**

Name Doug Day
Email
Phone
Fax
Co. VSLI Technology

Cl 38 **SC** 38.3.4 **P** **L** 12-27

Comment Type E **Comment Status** D

There is no normative reference to the frequency content of the jitter= budget
(Table 38-5), i.e., that the jitter is all above 637 kHz.

SuggestedRemedy

Add "Numbers in the Table 38-5 represent high frequency jitter (above 637= kHz)
and do not include low frequency jitter or wander."

Proposed Response **Response Status** Z

Doug withdrew comment

Comment ID 69 **Topic**

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Cl 38 **SC** 38.4 **P** 38.8 **L** 03

Comment Type E **Comment Status** A

If a device meets the requirements of 38.4, all media types in table 38-1 should be supported. If the requirements of 38.3 are not sufficient, the statement that all media types SHALL be supported does not really help the PMD implementor. In order to support all media types, the MMF value column of table 38-8 must be implemented. If a station is required to implement the MMF value column, the statement in 38.4 becomes redundant.

SuggestedRemedy

Suggest change "A 1000BASE-LX complaint transmitter shall be capable of supporting..." to "A 1000BASE-LX compliant transmitter is capable of supporting..." Delete PICS item PML-1 from 38.11.4.3. Change 38.4.2, page 38.10, line 1, to "The 1000BASE-LX transmitter shall meet the specifications defined in the MMF value column of table 38-8..." Adjust PICS entry PML-2 accordingly.

Proposed Response **Response Status** W

This is a two part comment and has two different responses.
Accept the suggested change to "A 1000BASE-LX complaint transmitter shall be=

capable of supporting..." to "A 1000BASE-LX compliant transmitter is capable= of
supporting..." Also add "50 and 62.5um MMF" to value descriptions on tables=

38.3 and 38.8.

Rejecting. Delete PICS item PML-1 from 38.11.4.3. Change 38.4.2, page 38.10, line 1, to "The 1000BASE-LX transmitter shall meet the specifications defined in the MMF value column of table 38-8..." Adjust PICS entry PML-2 accordingly" - because we are specifying a single=

interface for both single-mode and multimode.

Comment ID 174 **Topic**
Name Paul Kolesar
Email
Phone
Fax
Co. Lucent

Cl 38 **SC** 38.4.2 **P** 38.4 **L** n/a

Comment Type E **Comment Status** A

Table 38.2 lists response time as a spec. That same line (response time)= should
be in Table 38.6 - 1000BASE-LX transmit characteristics.

SuggestedRemedy

See comment

Proposed Response **Response Status** W

OK

Comment ID 178 **Topic**
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Cl 38 **SC** 38.6.1 **P** 38.14 **L** 12

Comment Type E **Comment Status** A

Safety standard is "IEC 90"

SuggestedRemedy

Change to "IEC - 950"
Also change PIC (page 24, line 3) OR14

Proposed Response **Response Status** W

Accept

Comment ID 74 **Topic**
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Cl 38 **SC** 38.7 **P** 38.14 **L** 37

Comment Type E **Comment Status** A

The wording of 38.7 is unclear.

SuggestedRemedy

Suggest change to "Hardware shall be implemented such that the normative specifications of this clause are met over the life of the product while the product operates within the manufacturer's range..."

Proposed Response **Response Status** W

Accept comment - change "implementing hardware" in line 37, section 38.7 to= "a
system integrating a 1000-BASE-X PMD"

Comment ID 124 **Topic**
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Cl 38 **SC** 38.9 **P** 38.16 **L** 1 to 55

Comment Type E **Comment Status** A

General clean up of table 38.10

SuggestedRemedy

Remove reference row. Remove 850nm in Description text.

Proposed Response **Response Status** W

OK

Comment ID 138 **Topic**
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Cl 38 **SC** 4 **P** 38.8 **L** 39

Comment Type E **Comment Status** A

#5

The first sentence is redundant with 38.2.1.

SuggestedRemedy

Delete first sentence.

Proposed Response **Response Status** W

OK

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Cl 38 **SC** 4.1 **P** 38.9 **L** all

Comment Type E **Comment Status** A

#6

This section should be informative.

SuggestedRemedy

Move section to the informative annex 38A.

Proposed Response **Response Status** W

OK

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Cl 38 **SC** 9.4 **P** 38.17 **L** 5

Comment Type E **Comment Status** A

#13

Figure 38-4 does not distinguish between 50 and 62.5 MMF.

SuggestedRemedy

Provide a vertical line at 1320 nm to divide the regions of the figure with the left labeled 50 um MMF and the right labeled 62.5 um MMF. Since the regions were split in Table 38.10, they should also be split in Figure 38-4.

Proposed Response **Response Status** W

Accept with comment - delete subclause 38.9.4 Dispersion slope (informative)

Comment ID 150 **Topic**
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Cl 38 **SC** A.1 **P** 38.26 **L** 11

Comment Type E **Comment Status** A

#17

Dual meanings for T sub s.

SuggestedRemedy

Ts is used in equation 6 to represent system rise time and again in equations 7 and 8 for source rise time. Suggest changing equation 6 to Tsys.

Proposed Response **Response Status** W

Accept, change sub s to sub sys in 5 places in equations 5&6 and text.

Comment ID 151 **Topic**
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Cl 38 **SC** A.2 **P** 38.26 **L** 36

Comment Type E **Comment Status** A

#18

Incorrect symbols.

SuggestedRemedy

T sub e should be T sub c as defined in line 33.

Proposed Response **Response Status** W

OK, change sub e to sub c in eq. 8.

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Cl 38 **SC** All **P** All **L** *

Comment Type E **Comment Status** A

Global search and change "Gbaud" to "GBd."

SuggestedRemedy

See comment

Proposed Response **Response Status** W

OK

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Co. Corning

Cl 38 **SC** Table 38.8 **P** 38.6 **L** 21

Comment Type E **Comment Status** A

Dispersion slope formula is incorrect for the wavelength range 1295-1300.

SuggestedRemedy

Change the Dispersion slope (max) to 0.11 for 1300=9Cl(0)=9C1320 and 0.001=
(l(0)-
1190) for 1295=9Cl(0)=9C1300

Proposed Response **Response Status** W

OK