Cl **1** *SC* *P* **1** *L* **1** # 69

Frank, Effenberger — Futurewei Technologies

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

The page numbers at the bottom of the page restart after page 16, and do not coincide with the actual page number in the pdf document.

SuggestedRemedy

Strongly recommend that you work to make the two page numbers match, so that the reviewers know what to enter into the tool.

In my comments, I always used the page number of the pdf document, and not what is on the page.

Response *Response Status* **C**

ACCEPT.
Mismatch in D1.1 between numbers is because of the table of contents. Editor will follow the 802.3 template to align the page numbers.

Cl **1** *SC* *P* **14** *L* **0** # 68

Frank, Effenberger — Futurewei Technologies

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

On all even page headers from page 14 onward, it says "Draft 1.0, september"

SuggestedRemedy

Ensure that all the headers are correct for the draft in question.

Response *Response Status* **C**

ACCEPT.
Editor will fix this and the date in the header

Cl **1** *SC* **3** *P* **14** *L* **1** # 66

Frank, Effenberger — Futurewei Technologies

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

A reference to the related ITU recommendation should be added

SuggestedRemedy

Add the following in alphabetical order:
ITU-T Recommendation G.9806-Higher speed bidirectional, single fibre, point-to-point optical access system (HS-PtP)

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

ITU-T G.9806 is not published yet.

Cl **1** *SC* **4** *P* **14** *L* **10** # 65

Frank, Effenberger — Futurewei Technologies

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

The definitions section typically contains all the PHY names. So, we should add the bunch of names that we have created.

SuggestedRemedy

Insert the following after 1.4.128 (approx):
50GBASE-BR10: IEEE 802.3 Physical Layer specification for a 50 Gb/s bidirectional link over one single-mode fiber with reach up to at least 10km. The link includes two different specifications for 50GBASE-BR10-D and 50GBASE-BR10-U. (See IEEE Std 802.3, Clause 160.)

50GBASE-BR20: IEEE 802.3 Physical Layer specification for a 50 Gb/s bidirectional link over one single-mode fiber with reach up to at least 20km. The link includes two different specifications for 50GBASE-BR20-D and 50GBASE-BR20-U. (See IEEE Std 802.3, Clause 160.)

50GBASE-BR40: IEEE 802.3 Physical Layer specification for a 50 Gb/s bidirectional link over one single-mode fiber with reach up to at least 40km. The link includes two different specifications for 50GBASE-BR40-D and 50GBASE-BR40-U. (See IEEE Std 802.3, Clause 160.)

50GBASE-BR40+: IEEE 802.3 Physical Layer specification for a 50 Gb/s bidirectional link over one single-mode fiber with reach up to at least 40km with a larger loss budget. The link includes two different specifications for 50GBASE-BR40+-D and 50GBASE-B40+-U. (See IEEE Std 802.3, Clause 160.)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Use the remedy, change all "(See IEEE Std 802.3" into "(See IEEE Std 802.3cp"

Cl **1** *SC* **4** *P* **14** *L* **10** # 64

Frank, Effenberger — Futurewei Technologies

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

The definitions section typically contains all the PHY names. So, we should add the bunch of names that we have created.

SuggestedRemedy

Insert the following after 1.4.91:
25GBASE-BR10: IEEE 802.3 Physical Layer specification for a 25 Gb/s bidirectional link over one single-mode fiber with reach up to at least 10km. The link includes two different specifications for 25GBASE-BR10-D and 25GBASE-BR10-U. (See IEEE Std 802.3, Clause 159.)

25GBASE-BR20: IEEE 802.3 Physical Layer specification for a 25 Gb/s bidirectional link over one single-mode fiber with reach up to at least 20km. The link includes two different specifications for 25GBASE-BR20-D and 25GBASE-BR20-U. (See IEEE Std 802.3, Clause 159.)

25GBASE-BR40: IEEE 802.3 Physical Layer specification for a 25 Gb/s bidirectional link over one single-mode fiber with reach up to at least 40km. The link includes two different specifications for 25GBASE-BR40-D and 25GBASE-BR40-U. (See IEEE Std 802.3, Clause 159.)

25GBASE-BR40+: IEEE 802.3 Physical Layer specification for a 25 Gb/s bidirectional link over one single-mode fiber with reach up to at least 40km with a larger loss budget. The link includes two different specifications for 25GBASE-BR40+-D and 25GBASE-B40+-U. (See IEEE Std 802.3, Clause 159.)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Use the remedy, change all "(See IEEE Std 802.3" into "(See IEEE Std 802.3cp"

Cl **1** *SC* **4** *P* **14** *L* **10** # 63

Frank, Effenberger — Futurewei Technologies

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

The definitions section typically contains all the PHY names. So, we should add the bunch of names that we have created.

SuggestedRemedy

Insert the following after 1.4.52:
10GBASE-BR10: IEEE 802.3 Physical Layer specification for a 10 Gb/s bidirectional link over one single-mode fiber with reach up to at least 10km. The link includes two different specifications for 10GBASE-BR10-D and 10GBASE-BR10-U. (See IEEE Std 802.3, Clause 158.)

10GBASE-BR20: IEEE 802.3 Physical Layer specification for a 10 Gb/s bidirectional link over one single-mode fiber with reach up to at least 20km. The link includes two different specifications for 10GBASE-BR20-D and 10GBASE-BR20-U. (See IEEE Std 802.3, Clause 158.)

10GBASE-BR40: IEEE 802.3 Physical Layer specification for a 10 Gb/s bidirectional link over one single-mode fiber with reach up to at least 40km. The link includes two different specifications for 10GBASE-BR40-D and 10GBASE-BR40-U. (See IEEE Std 802.3, Clause 158.)

10GBASE-BR40+: IEEE 802.3 Physical Layer specification for a 10 Gb/s bidirectional link over one single-mode fiber with reach up to at least 40km with a larger loss budget. The link includes two different specifications for 10GBASE-BR40+-D and 10GBASE-B40+-U. (See IEEE Std 802.3, Clause 158.)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Use the remedy, change all "(See IEEE Std 802.3" into "(See IEEE Std 802.3cp"

Cl **1** *SC* **5** *P* **14** *L* **14** # 67

Frank, Effenberger — Futurewei Technologies

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

Our clauses do not create any new abbreviations, so we can remove this subclause.

SuggestedRemedy

Remove section 1.5 from our draft.

Response *Response Status* **C**

ACCEPT.

Cl **157** *SC* **8** *P* **47** *L* **1** # 70

Frank, Effenberger — Futurewei Technologies

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

Because it is introductory, clause 157 does not need a PICS pro-forma. An example of the usual treatment is found in clause 56, the introduction to EFM.

SuggestedRemedy

Delete the clause

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Delete the PICS subcaluse in Clause 157.

Cl **158** *SC* **6** *P* **53** *L* **42** # 71

Frank, Effenberger — Futurewei Technologies

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

The table 158-5 header says "Minimum range", but the table entries give distance ranges. Also, the wavelength doesn't make sense to list here.

SuggestedRemedy

Change "Minimum range" to "Required operating range"
Remove "wavelength" column.

In other words, make this look like table 159-5

Response *Response Status* **C**

ACCEPT.

Cl **158** *SC* **7** *P* **57** *L* **50** # 72

Frank, Effenberger — Futurewei Technologies

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

Many of these clauses are basically an exact replica of an existing clause. For instance:
158.7 is the same as 52.8.
158.8 is the same as 52.9.
158.9 is a combination of 52.10, .11, and .12.
There are similar cases in clauses 159 and 160 as well.

There is a danger that the text will become misaligned, so we shoudl work to reduce it.

SuggestedRemedy

I suggest two possible fixes for this:
1: Add a sentence at the very beginning of each repetitive clause that says "This clause is meant to replicate the material in clause X [and Y]. In the case of any discrepancy, the original clause takes precedence over this clause."

2: We could replace the contents of these clauses with just a reference to the older clause. This would make our draft tighter (much less text to review), albeit at the cost of readability.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Remedy #2 is preferred. Editor will apply this to Clauses 158, 159, 160.

Cl **158** *SC* **8.10** *P* **63** *L* **9** # 74

Frank, Effenberger — Futurewei Technologies

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

The conditions of the stressed Rx test should ensure the diplexer isolation is sufficient.

SuggestedRemedy

At the end of the section, add the following:
"The transmitted optical signal and the reflectance of the optical link should be at their maximum levels."

Response *Response Status* **C**

ACCEPT.

Cl **158** *SC* **158.1** *P* **33** *L* **8** # 55

Tartaglia, Antonio Ericsson

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

There is evidence of development activities going on in the optical transceiver industry to support "mobile-optimized" 25G BiDi solutions, using cheaper laser sources and with shorter reach (<2km).

SuggestedRemedy

Adding a new "mobile-optimized" BiDi distance class, <2km.

Response *Response Status* **C**

REJECT.
This is outside of the scope. See Frank's email to the .3cp group on 1/3 with David Law's feedback on this proposal.

Cl **158** *SC* **Figure 158-1** *P* **50** *L* **14** # 61

Luo, Yuanqiu Futurewei

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

10G BiDi BER reference level is 1e–12 (Clause 158.1.1). There is no FEC function block in PHY. The Editor's note on FEC sublayer can be removed from Figure 158-1

SuggestedRemedy

Remove the Editor's note from Figure 158-1

Response *Response Status* **C**

ACCEPT.

Cl **158** *SC* **Table 158-6Table 158** *P* **54** *L* **10** # 56

Luo, Yuanqiu Futurewei

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

Tables 158-6 and 158-7 share almost all parameters except the downstream and upstream wavelengths. We should merge transmit characteristics into one table.

Same merging should be implemented to Tables 159-6/159-7, Tables 160-6/160-7

SuggestedRemedy

Propose to merge Table 158-7 into Table 158-6, change row "Center wavelength (range)" into "BRx-D Center wavelength (range)", add a new row "BRx-U Center wavelength (range)" to capture the upstream wavelengths.

Change table title into "10GBASE-BRx transmit characteristics". Remove "-D" from cells in the first row.

Do the same merging to Tables 159-6/159-7, Tables 160-6/160-7

Refer to December conference call contribution "D1.1 Optical table spreadsheet" for details.

Response *Response Status* **C**

ACCEPT.

Merge D/U transmit tables, update all references and table numbers.

Cl **158** *SC* **Table 158-8Table 158** *P* **56** *L* **4** # 57

Luo, Yuanqiu Futurewei

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

Tables 158-8 and 158-9 share almost all parameters except the downstream and upstream wavelengths. We should merge receiver characteristics into one table.

Same merging should be implemented to Tables 159-8/159-9, Tables 160-8/160-9

SuggestedRemedy

Propose to merge Table 158-9 into Table 158-8, change row "Center wavelength (range)" into "BRx-D Center wavelength (range)", add a new row "BRx-U Center wavelength (range)" to capture the upstream wavelengths.

Change table title into "10GBASE-BRx receive characteristics". Remove "-D" from cells in the first row.

Do the same merging to Tables 159-8/159-9, Tables 160-8/160-9

Refer to December conference call contribution "D1.1 Optical table spreadsheet" for details.

Response *Response Status* **C**

ACCEPT.

Merge D/U transmit tables, update all references and table numbers.

Cl **158** *SC* **Table 158-8Table 158** *P* **56** *L* **19** # 62

Luo, Yuanqiu Futurewei

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

Both mW and dBm values are specified in Row "Receiver sensitivity (max) in OMA" and Row "Stressed receiver sensitivity (max) in OMA". This is redundant. In similar tables of Clauses 159 and 160, only dBm values are specified. We should make them consistant.

SuggestedRemedy

Remove mW units and mW values from Tables 158-8 and 158-9

Response *Response Status* **C**

ACCEPT.

Cl **159** *SC* **7.10** *P* **84** *L* **28** # 75

Frank, Effenberger Futurewei Technologies

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

The conditions of the stressed Rx test should ensure the diplexer isolation is sufficient.

SuggestedRemedy

At the end of the lettered list, add the following:
"h) The transmitted optical signal and the reflectance of the optical link should be at their maximum levels."

Response *Response Status* **C**

ACCEPT.

Cl **159** *SC* **159.10** *P* **70** *L* **5** # 52

Geng, Limin Huawei

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

The nominal wavelength of the upstream is 1288 in Table 159-15. With ±8nm spacing, the wavelength upper limit is only 1296nm, which does not fully cover the standard LWDM wavelength range from 1294.53 to 1296.59 defined in 802.3bs and cn. Meanwhile, the non-standard wavelength range would also impacts the yield and cost, and we will follow up with a presentation slide.

SuggestedRemedy

The Nominal wavelength in Table 159-15 needs to be changed from 1288 to 1289. The nominal wavelength of 1289 together with ±8nm spacing would fully cover the standard LWDM wavelength range defined in 802.3bs and cn.

Response *Response Status* **C**

ACCEPT.

Note to Editor: Change 25G and 50G 20km+ US center wavelength into 1289nm, do global check. Group Comments #52/53/54.

Cl **160** *SC* **7.5.2** *P* **104** *L* **44** # 73

Frank, Effenberger — Futurewei Technologies

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

The coeffients for the fiber dispersion are wrong.
Also, the mean DGD is the same.

SuggestedRemedy

The coefficient for 10km should be 0.2325
That for 20km should be 0.465
That for 40km should be 0.93

The mean DGD should be 0.8 ps for all distances.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Optical return loss in the same table should be fixed as 10km --- 15.6 dB, 20km --- 15.3 dB, 40/40+km --- 15 dB

Cl **160** *SC* **7.10.2** *P* **108** *L* **40** # 76

Frank, Effenberger — Futurewei Technologies

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

The conditions of the stressed Rx test should ensure the diplexer isolation is sufficient.

SuggestedRemedy

At the end of the bulleted list, add the following:
"- The transmitted optical signal and the reflectance of the optical link should be at their maximum levels.

Response *Response Status* **C**

ACCEPT.

Cl **160** *SC* **160.6.1** *P* **82** *L* **41** # 53

Geng, Limin — Huawei

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

In Table 160-7, the wavelength range of 50GBASE-BR20-U/50GBASE-BR40-U/50GBASE-BR40+-U transmitter is 1280 to 1296nm. However, the wavelength upper limit is only 1296nm, which is not fully cover the standard LWDM wavelength upper limit of 1296.59nm defined in 802.3bs and cn. On the other hand, the non-standard wavelength range also impacts the yield and cost, and we will follow up with a presentation slide.

SuggestedRemedy

To fully cover the standard LWDM wavelength range defined in 802.3bs and cn, the Wavelength(range) of 50GBASE-BR20-U/50GBASE-BR40-U/50GBASE-BR40+-U transmitter in Table 160-7 needs to be changed to 1281-1297 nm.

If this comment is accepted, Table 159-15 and 160-9 would be affected.

Response *Response Status* **C**

ACCEPT.
See Comment #52

Cl **160** *SC* **160.6.2** *P* **84** *L* **41** # 54

Geng, Limin — Huawei

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

In Table 160-9, the wavelength range of 50GBASE-BR20-U/50GBASE-BR40-U/50GBASE-BR40+-U receiver is1280 to1296nm. However, the wavelength upper limit is only 1296nm, which is not fully cover the standard LWDM upper wavelength limit of 1296.59nm defined in 802.3bs and cn. On the other hand, the non-standard wavelength range also impacts the yield and cost, and we will follow up with a presentation slide.

SuggestedRemedy

To fully cover the standard LWDM wavelength range defined in 802.3bs and cn, the Wavelength(range) of 50GBASE-BR20-U/50GBASE-BR40-U/50GBASE-BR40+-U receiver in Table 160-9 needs to be changed to 1281-1297 nm.

If this comment is accepted, Table 159-15 and 160-7 would be affected.

Response *Response Status* **C**

ACCEPT.
See Comment #52

Cl **160** *SC* **Table 160-13** *P* **104** *L* **48** # 60

Luo, Yuanqiu Futurewei

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

There are undetermined factors in 50GBASE-BR20 dispersion. 50GBASE-BR40/40+ dispersion formula is different from 802.3cn Table 139-11.

SuggestedRemedy

Reuse dispersion spec in 802.3cn Table 139-11 for Table 160-13 as follows:
- In Row "50GBASE-BR20", replace the first "@@" with "0.2325", replace the thrid "@@" with "15.6", replace the last "@@" with "0.8"
- In Row "50GBASE-BR40, 50GBASE-BR40+", replace both places of "0.2325" with "0.93", replace "15.6" with "15"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See Comment #73

Cl **160** *SC* **Table 160-6** *P* **97** *L* **46** # 58

Luo, Yuanqiu Futurewei

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

Values of 50GBASE-BRx Tx "Average launch power (max)" should reuse those in the latest draft of 802.3cn Table 139-6.

SuggestedRemedy

Table 160-6, Row "Average launch power (max)", change 3.63 to 3.6, 6.63 to 6.6, and 11.63 to 11.6.

Value 6.6 is from 802.3cn Table 139-6, 3.6 and 11.6 are calculated from 6.6

Response *Response Status* **C**

ACCEPT.

Cl **160** *SC* **Table 160-8** *P* **99** *L* **52** # 59

Luo, Yuanqiu Futurewei

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

Values of 50GBASE-BRx Rx "Damage threshold" and "Average receive power (max)" should reuse those in the latest draft of 802.3cn Table 139-7. 50GBASE-BR20/BR40/BR40+ should share the same Rx

SuggestedRemedy

Table 160-8, Row "Damage threshold", change 4.63/2.63/2.63 to -2.4.

Table 160-8, Row "Average receive power (max)", change 3.63/1.63/1.63 to -3.4.

Values -2.4 and -3.4 are from 802.3cn Table 139-7

Response *Response Status* **C**

REJECT.

.3cp loss budget numbers are different from .3cn