Cl **FM** *SC* **Front Matter** *P* **13** *L* **12** # 447

Dudek, Mike — Marvell

Comment Type **T** *Comment Status* **D** *(bucket) (CG)*

The clause # is not included.

SuggestedRemedy

Make it Clause 168.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **0** *L* **0** # 63

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket) PICS (CG)*

The PICS subclauses may not be in alignment with the specification in each clause. Grant editorial license to update as needed.

SuggestedRemedy

With editorial license, update the PICS subclause in each clause/annex as necessary to align with specifications within the clause/annex.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Note that comment #376 proposes to reduce the content in the PICS subclauses.
For any clauses with a PICS subclause, implement the suggested remedy with consideration of the adopted response to comment #376 with editorial license.
[Editor's note: CC: many clauses]

Cl **00** *SC* **0** *P* **8** *L* **34** # 67

Lusted, Kent — Synopsys

Comment Type **E** *Comment Status* **D** *(bucket) (CG)*

Missing the list of members in the balloting committee

SuggestedRemedy

Add the list of members in the balloting committee

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.1.3.2** *P* **54** *L* **17** # 371

Ran, Adee — Cisco Systems

Comment Type **E** *Comment Status* **D** *(bucket) (CG)*

"The 1.6TMII is a logical interconnection intended for use as an intra-chip interface"
To me "interface" is formal and "interconnection" is practical/implementation.

(Other items that include this statement can be handled in maintenance)

SuggestedRemedy

Change to
"The 1.6TMII is a logical interface intended for intra-chip interconnection".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.2.3** *P* **54** *L* **28** # 281

Huber, Thomas — Nokia

Comment Type **T** *Comment Status* **D** *(bucket) (CG)*

Since this amendment is introducing "1.6TBASE-R", clause 1.2.3 needs to be updated to include "T" meaning Tb/s.

SuggestedRemedy

Change the first sentence of the last paragraph of 1.2.3 from
The data rate, if only a number, is in Mb/s, and if suffixed by a “G”, is in Gb/s.
To
The data rate, if only a number, is in Mb/s, if suffixed by a "G", is in Gb/s, and if suffixed by a "T", is in Tb/s.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **1** *SC* **1.3** *P* **54** *L* **44** # 361

Kocsis, Sam — Amphenol

Comment Type **ER** *Comment Status* **D** *(bucket) (CG)*

Reference to OSFP is Revision 5.1, September 12, 2024 is outdated

SuggestedRemedy

Update reference to Revision 5.22, August 9, 2025

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **1** *SC* **1.3** *P* **54** *L* **51** # 362

Kocsis, Sam — Amphenol

Comment Type **E** *Comment Status* **D** *(bucket) (CG)*

The reference to REF-TA-1011 is normative, but the document iteself is informative. There are no direct references to REF-TA-1011 in 802.3dj, and any of the relevant information would be covered in SFF-8665 or SFF-TA-1027, or 1031.

SuggestedRemedy

Remove the reference to "REF-TA-1011 Rev 1.1.7, July 11, 2025, Cross Reference to Select SFF Connectors and Modules."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.4** *P* **59** *L* **19** # 68

Lusted, Kent — Synopsys

Comment Type **T** *Comment Status* **D** *(bucket) (CG)*

In the base specification IEEE Std. 802.3-2022 page 204, the definition of "Channel Operating Margin (COM)" points to Clause 93A.1). There needs to be a reference to the COM in Annex 178A

SuggestedRemedy

Bring 1.4.237 Channel Operating Margin (COM): into the draft and add a reference to Annex 178A

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.4.24aa** *P* **55** *L* # 54

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CG)*

1.4.24aa is not the correct subclause number. Instead it should be immediately before 1.4.101a "200GBASE-CR2" as inserted by IEEE Std 802.3ck-2022.

SuggestedRemedy

Change the subclause number per comment with editorial license.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.5** *P* **59** *L* **50** # 69

Lusted, Kent — Synopsys

Comment Type **T** *Comment Status* **D** *(bucket) (CG)*

SCMR is used 12 times throughout the draft as an abbreviation for Signal to AC common-mode noise ratio. It is not listed in the abbreviations in Cl 1.5

SuggestedRemedy

Add abbrevation for SCMR as follows:
SCMR Signal to AC common-mode noise ratio

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.5.1.1.2** *P* **64** *L* **48** # 490

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (L)*

Need to add new speeds into the Behavior description.

SuggestedRemedy

Add 800GBASE-R and 1.6.TBASE-R to the laundry list of enumerations used when PMD type is unkown in the last paragraph of BEHAVIOR DEFINED AS: for aMAUType

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.5.1.1.4** *P* **64** *L* **0** # 460

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (L)*

The data rates 800G & 1.6T needs to be added to the behavior.

SuggestedRemedy

Add 800Gb/s and 1.6Tb/s to the seventh paragraph for the behavior of aMediaAvailable.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.5.1.1.12** *P* **64** *L* **0** # 461

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (L)*

The data rates 800G & 1.6T needs to be added to the behavior.

SuggestedRemedy

Add 800Gb/s and 1.6Tb/s to the behavior of aLaneMapping

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.5.1.1.17** *P* **64** *L* **0** # 462

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (L)*

The data rates 800G & 1.6T needs to be added to the behavior. Also to 30.5.1.1.18

SuggestedRemedy

Add 800Gb/s and 1.6Tb/s to the behavior of aFECCorrectedBlocks and aFECUncorrectedBlocks

In the SYNTAX sections the increment rate for 800Gb/s would be 160 000 000 and 320 000 000 for 1.6T/s
In the BEHAVIOR sections add 800 to list of xxxGBASE-R PHYs and in 1.6TBASER PHYs to the list as well.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.6.1.1.7** *P* **65** *L* **0** # 489

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (L)*

Clause 73 uses more than just the base page to indicate which technologies are available.

SuggestedRemedy

aAutoNegReceivedTechnologyAbility behavior needs to update this sentence:
For Clause 73 Auto-Negotiation, this attribute maps to bits D10-D13 and D21-D47 of the last received link codeword Base Page (see 73.6).

To:

For Clause 73 Auto-Negotiation, this attribute maps to bits of the last received link codeword Base Page and/or Message code 2 Next Page (see 73.6).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **71** *L* **48** # 457

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (L)*

Time Sync Inner FEC or ER1 is not the sub clause title

SuggestedRemedy

Remove "TimeSync Inner FEC or ER1" from the two rows in Table 45-3 at lines 48 and 49

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Replace "TimeSync Inner FEC or ER1 FEC" with "TimeSync FEC"

Cl **45** *SC* **45.2.1.8** *P* **77** *L* **6** # 339

Simms, William — NVIDIA

Comment Type **E** *Comment Status* **D** *(bucket) (L)*

table 45-12 name vs section header inconsistent with table 45-14 and its section header

SuggestedRemedy

change table 45-12 title to Transmit disable register description location

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The table title "Table 45–12—Transmit disable description location" matches what is in the base standard.

Cl **45** *SC* **45.2.1.10** *P* **77** *L* **34** # 340

Simms, William — NVIDIA

Comment Type **E** *Comment Status* **D** *(bucket) (L)*

title capitalization difference with table title

SuggestedRemedy

make 45.2.1.10 "PMA/PMD Extended Ability register" 'or' Table 45-14 "PMA/PMD extended ability register bit definitions"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change table title to be lower case "extended ability".

Cl **45** *SC* **45.2.1.175** *P* **97** *L* **42** # 458

Slavick, Jeff Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (L)*

This clause now includes Inner FEC/ER1 FEC.

SuggestedRemedy

Update PMA/PMD be FEC/PMA/PMD in the sub-clause title and text and references to this sub-clause (e.g. Table 45-3)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.258** *P* **110** *L* **29** # 282

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(bucket) (L)*

The registers in this subclause are used by both the "Inner FEC" and the "ER1 FEC", but the Name field is "Inner FEC", and Description is "Inner_FEC_..." Since the ER1 FEC is not an "inner FEC", the description should be generalized. This issue exists in subclauses 45.2.1.259, 45.2.1.260, and 45.2.1.261 also.

SuggestedRemedy

Change the Name column from "Inner FEC…" to "Inner FEC or ER1 FEC…"
Change the Description column from "Inner_FEC_..." to "FEC_..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.272** *P* **118** *L* **15** # 491

Slavick, Jeff Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (L)*

Title of this section does not need the word "duplication" as this is not a duplicate of another set of registers with the same information. It is a distinct set of registers that have the same function as other defined registers but for a different instance.

SuggestedRemedy

Remove "Duplication of" from the name of 45.2.1.272

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.272** *P* **118** *L* **19** # 492

Slavick, Jeff Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (L)*

What registers are they duplicates of?

SuggestedRemedy

Update the range of the ILT register space copy to be the first 4000 registers and use a 4000 register area of the map.

Update the text of 45.2.1.272 from:
Inter sublayer training requires control registers for the upper and bottom AUI components. The upper AUI component has the same control functionality as the bottom AUI component so the relevant registers are duplicated with an address offset of 4000.

To:
Inter sublayer training requires control registers for the upper and bottom AUI components. Registers 1.4000 through 1.7999 have identical functionality to the register 1.0 through 1.3999 (address offset of 4000). The relevant registers from 1.0 through 1.3999 are used of control and status of the bottom AUI component. The relevant registers from 1.4000 through 1.7999 are used for control and status of the upper AUI component.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **73** *SC* **73** *P* **136** *L* **3** # 199

Bruckman, Leon
Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket) (L)*

After adding the Host class to Autonegotiation, the base standard introduction to AN in 73.1 needs to be updated.

SuggestedRemedy

In 73.1
Change: "The Auto-Negotiation function allows an Ethernet device to advertise modes of operation it possesses to another device at the remote end of a Backplane Ethernet link and to detect corresponding operational modes the other device may be advertising."
To: "The Auto-Negotiation function allows an Ethernet device to advertise modes of operation it possesses and its characteristics to another device at the remote end of a Backplane Ethernet link and to detect corresponding operational modes and characteristics the other device may be advertising."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change the text to:
"The Auto-Negotiation function allows an Ethernet device to advertise characteristics and modes of operation it possesses to another device at the remote end of a Backplane Ethernet link and to detect corresponding operational modes and characteristics that the other device may be advertising".

Cl **73** *SC* **73.6.1.1** *P* **139** *L* **2** # 373

Ran, Adee
Cisco Systems

Comment Type **E** *Comment Status* **D** *(bucket) (L)*

The text of this clause includes "will" twice, and in both cases it seems like a normative requirement (so should be "shall").
There are several other instances of "will" in the document; they should be checked for compliance with the SA style manual ("will is only used in statements of fact") and changed if necessary. The suggested remedy lists some instances, and excludes instances for which I checked that "will" is appropriate.

SuggestedRemedy

Change "will" to "shall" twice in this subclause.
Check (and correct if necessary, e.g. to "is" or variants) other instances of "will" in clauses 73, and in 177.4.6, 177.5.2, 180.10.4, 184.4.9, 185.10.4, 186.2.3.3, 186.2.3.5.9, 186.2.3.8, 186.2.4.7.5, 187.10.4, 174A.10.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The style manual states the following: "The word will is deprecated and shall not be used when stating mandatory requirements; will is only used in statements of fact."
The two "will"s mentioned in 73.6.1.1 along with the one in 73.6.1.2 are in the base standard and so should be left as is.
The "will"s in 177.4.6, 177.5.2, 186.2.3.3 are statements of fact, so should remain.
The "will"s in 186.2.3.5.9 and 186.2.3.8 have been reviewed and are considered to be correct as written.
In 174A.10 the "will"s are consequences and should remain.
In 186.2.4.7.5 change "will need" to "are".
In 180.10.4, 185.10.4, and 187.10.4 change "will be met" to "are met".
The "will"s in in 184.4.9 delete the word "will".

Cl **73** *SC* **73.9.1.1** *P* **147** *L* **44** # 200

Bruckman, Leon
Nvidia

Comment Type **E** *Comment Status* **D** *(bucket) (L)*

Missing word

SuggestedRemedy

Change: "one of values" to: "one of three values"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **73** *SC* **73.11.4.5** *P* **153** *L* **13** # 341

Simms, William NVIDIA

Comment Type **E** *Comment Status* **D** *(bucket) (L)*

just a sanity check on the wording in quotes in the Value/Comment field of the table

SuggestedRemedy

should the langauge in quotes be removed?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Remove the text in quotes "Recognized as end of link partner's Next Pages"

Cl **73A** *SC* **73A.1a** *P* **696** *L* **36** # 194

Bruckman, Leon Nvidia

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

Host class is not negotiated, but it is part of an autonegotiation page. This may create confusion

SuggestedRemedy

Add footnote to Table 73A-1b: Host class is only reported, no negotiation is required."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **116** *SC* **116.3.3.3.1** *P* **171** *L* **18** # 334

Mascitto, Marco Nokia

Comment Type **E** *Comment Status* **D** *anagement intervention (CG)*

A value of FAIL will require management intervention. Recommend stating this explicitly.

SuggestedRemedy

Add sentence, "Management intervention is required".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
For this case, the value FAIL may not indicate the need for management intervention since for this case ILT as defined in Annex 178B is not supported. It would therefore not be generally correct. Also, the statement would in a small way affect legacy clauses.

Cl **116** *SC* **116.3.3.3.1** *P* **171** *L* **33** # 335

Mascitto, Marco Nokia

Comment Type **E** *Comment Status* **D** *anagement intervention (CG)*

A value of FAIL will require management intervention. Recommend stating this explicitly.

SuggestedRemedy

Add sentence, "Management intervention is required".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
In the instance, a value of FAIL is likely initiated by the ILT state diagram. Also, since it is stated for "IN_PROGRESS" and "TRAINING" it is stated "Management intervention is not required." It would to provide complementary guidance for the FAIL value. Also, there is the possibility in some implementations that management intervention is not required.
Add sentence:
"Management intervention might be required."

Cl **116** *SC* **116.3.3.3.1** *P* **171** *L* **34** # 201

Bruckman, Leon Nvidia

Comment Type **T** *Comment Status* **D** *anagement intervention (CG)*

For the values of SIGNAL_OK = READY or IN_PROGRESS, it is specified that "Management intervention is not required".
When SIGNAL_OK = FAIL, management intervention may be required, but this is not indicasted.

SuggestedRemedy

Add the following text to the end of definition of the FAIL value of SIGNAL_OK: "Management intervention may be required.".
Also in the second paragraph in page 172, at the end of the paragraph that starts: "A value of FAIL indicates…" add the following text: "and management intervention may be required."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the responses to comment #335 and #336.

Cl **116** *SC* **116.3.3.4.1** *P* **172** *L* **5** # 466

Slavick, Jeff — Broadcom

Comment Type **T** *Comment Status* **D** *ucket) service interface (CG)*

FAIL status is the state presented if none of the other states apply. The text states that FAIL is when communication is not established. But the states of IN_PROGRESS and READY would meet that FAIL criteria too as they have yet to establish communication.

SuggestedRemedy

Change "or has not establisshed communication"
To "or is unable to establish communication"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
In contrary to the comment, "READY" is defined indicating "that communication with the next higher sublayer is established but communication with an upper ISL has not completed".
"IN_PROGRESS" is defined as indicating "that the sublayer is establishing communication with the next higher
sublayer" and thus communication is not established. So there is some ambiguity here.
The distinction is that the attempt to establish communication was unsuccessful.
On page 172 line 5...
Change "or has not established communication"
To "or is unable to establish communication"

Cl **116** *SC* **116.3.3.4.1** *P* **172** *L* **8** # 336

Mascitto, Marco — Nokia

Comment Type **E** *Comment Status* **D** *anagement intervention (CG)*

A value of FAIL will require management intervention. Recommend stating this explicitly.

SuggestedRemedy

Add sentence, "Management intervention is required".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The addition statement applies on to the last sentence in this paragraph which implies that ILT is in use. Also, there is the possibility in some implementations that management intervention is not required.
Append the last sentence in the paragraph with "and management intervention might be required."

Cl **116** *SC* **116.5** *P* **177** *L* **11** # 493

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (CG)*

Can we move footnote d to the same place as foonote b?

SuggestedRemedy

In Table 116-8
Change "(UI)b" to "(UI)b,d"
Remove the words "at this Skew point" from the footnote d definition.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The footnote applies only to SP1 through SP6. It does not apply to "at PCS receive" since the extra delay due to the source PMA codeword interleaving has been removed by the destination PMA.

Cl **118** *SC* **118.1** *P* **179** *L* **40** # 342

Simms, William — NVIDIA

Comment Type **E** *Comment Status* **D** *(bucket) (L)*

observation that associated clauses are not completely in increasing order

SuggestedRemedy

note that clause 78 is at bottom of list in table 118-a (and also table 118-b) rather than at top.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Clause 78 was placed at the bottom of Table 118-a and Table 118-b to be consistent with the approach taken in previous projects (Clauses 84, 85, 86, 87, 88, etc). However for the equivalent tables being added in this project, the clauses are now listed in numerical clause order (Clauses 179, 180, 181, 182, etc...) . For consistency it makes sense to reoder Tables 118-a and 118-b in numerical clause order, and do the same for Tables 171-1 and 171-1a.

Reorder Table 118-a and Table 118-b in numerical clause order.

Reorder Table 171-1 and Table 171-1a in numerical clause order.

Cl **119** *SC* **119.2.1** *P* **184** *L* **7** # 498

Opsasnick, Eugene Broadcom

Comment Type **E** *Comment Status* **D** *(bucket) (L)*

The term "data units" should not be hyphenated unless it is functioning as a compound adjective directly before a noun.

Hyphanated example: "The network handles a high volume of data-unit transfers.".

Non-hyphenated example: "The network transmits many data units."

Although both forms, hyphenated and non-hyphenated, are used throughout the base standard, the new clauses in 802.3dj as well as updates to previous clauses should use the correct form. Note that "data units" is used 22 times throughout D2.1 of 802.3dj, and 119.2.1 contains the only two occurance of "data-units". In the base standard 802.3-2022, "data units" is used 51 times and "data-units" is used 34 times (which should also be fixed.). A maintenance request can be submitted to fix the base standard if this comment is accepted.

SuggestedRemedy

Change "data-units" to "data units" in the update to the fourth pargraph of 119.2.1. The first sentence should be changed
From:
"Transmit data-units are sent to the service interface via the PMA:IS_UNITDATA_i.request primitive."
To:
"Transmit data units are sent to the service interface via the PMA:IS_UNITDATA_i.request primitive."

The second sentence should be changed
From:
"The SIGNAL_OK parameter of the PMA:IS_SIGNAL.request primitive is set to OK when the transmit data-units are valid and is set to FAIL otherwise."
To:
"The SIGNAL_OK parameter of the PMA:IS_SIGNAL.request primitive is set to OK when the transmit data units are valid and is set to FAIL otherwise."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The comment correctly points out that in the context of 119.2.1 the correct term is "data units" and not "data-units". However, Clause 119 and the majoity of the legacy PCS clauses (49, 82, 97, 126 and 149) use the term "data-units". Note, this issue has been addressed in the recent PCS clauses , where Clauses 172 and 175 correctly use "data units".

However this project is only amendning 119.2.1 to add two sentences at the end of the fourth paragrpah. The term "data-units" was used for the new text being added for consistency with the other three occurances of "data-units" in 119.2.1 (in the first sentence of the fourth paragraph, and in the fifth and sixth paragraphs). In addition it is noted that comment #675 against D2.0 (https://www.ieee802.org/3/dj/comments/D2p0/8023dj_D2p0_comments_final_id_v2.pdf) changed "data units" to "data-units" for the next text being added, for consistency with the other three occurances of 119.2.1 (that are not being amended).

The suggested remedy would change the first sentence of the fourth paragraph, which is technically out of scope. In addition to changing text that is technically out of scope, the suggested remedy would result in two occurances of "data units" and two occurances of "data-units" within 119.2.1, which is likely to attract additional comments (simlar to comment #675 against D2.0). It is preferrable to use "data-units" for the new sentence being added, for consistency with the three other occurances of "data-units" in 119.2.1. A maintenance request can be submitted to fix this issue globally for all applicable occurances of "data-units" in all of the impacted PCS clauses (including Clause 119).

Cl **119** *SC* **119.2.5.3** *P* **185** *L* **11** # 455

Slavick, Jeff Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (L)*

Error marking needs to be more explicit about corrupting which 66b blocks following an uncorrected codeword are the ones from the same decoder. In 800G and 1.6T those could be later in the flow of 66-bit blocks at the MII interface and not the ones directly after 66-bit blocks from the uncorrectable block.

SuggestedRemedy

Change:
then the first four 66-bit blocks following the uncorrected codewords shall also be set to an error block.

To:
then the first four 66-bit blocks of the following set of two associated codewords processed by the Reed-Solomon decoder shall also be set to an error block.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change:
"... then the first four 66-bit blocks following the uncorrected codewords shall also be set to an error block."

To:
"... then the first four 66-bit blocks from the next two associated codewords processed by the Reed-Solomon decoder shall also be set to an error block to account for the possible error propagation by the descrambler."

Implement with editorial license.

Cl **119** *SC* **119.3.4a** *P* **187** *L* **4** # 374

Ran, Adee — Cisco Systems

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

The new counter is optional. The text says "The following optional counter may be implemented for these PHY types" followed by a list of PHYs - but obviously it is permitted ("may equals is permitted to") to implement the counter in any PCS; the same PCS can be part of different PHYs (e.g. depending on the module type). So the restricted list does not make sense.
Removing the restriction would make the counter simply optional. Adding an optional feature to an existing specification is not a violation of scope - it has been done before (e.g., EEE, TimeSync) and we are doing similar things in this project (e.g. adding optional stateless encoder and decoder).

Similarly for 119.3.4b FEC_codeword_error_bin_i

SuggestedRemedy

Change "The following optional counter may be implemented for these PHY types:" to "The following counter is optional".
Implement similar change in 119.3.4b.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **170** *SC* **170.1** *P* **213** *L* **12** # 499

Opsasnick, Eugene — Broadcom

Comment Type **E** *Comment Status* **D** *(bucket) (L)*

The update from D2.0 to the first line sentenc+F7e of 170.1 is a little cluncky. It shoud be able to be clean it up. Please update with editorial license to make it sound better. The proposed change is one option.

SuggestedRemedy

Change the first sentence of 170.1
From:
"This clause defines the characteristics of the Reconciliation Sublayers (RS) for 800 Gb/s and 1.6 Tb/s, the 800 Gb/s Media Independent Interface (800GMII), and the 1.6 Tb/s Media Independent Interface (1.6TMII)."
To:
"This clause defines the characteristics of the Reconciliation Sublayers (RS) and Media Independent Interfaces (800GMII and 1.6TMII) for 800 Gb/s and 1.6 Tb/s PHYs."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change the title of 170
From:
"Reconciliation Sublayer (RS) and Media Independent Interface for 800 Gb/s (800GMII) and 1.6 Tb/s (1.6TMII)"
To:
"Reconciliation Sublayer (RS) and Media Independent Interface for 800Gb/s and 1.6Tb/s operation"

Change the first sentence of 170.1
From:
"This clause defines the characteristics of the Reconciliation Sublayers (RS) for 800 Gb/s and 1.6 Tb/s, the 800 Gb/s Media Independent Interface (800GMII), and the 1.6 Tb/s Media Independent Interface (1.6TMII)."
To:
"This clause defines the characteristics of the Reconciliation Sublayer (RS) and Media Independent Interface for 800 Gb/s and 1.6 Tb/s PHYs."

Change the second sentence of 170.1
From:
"Figure 170–1 shows the relationship of the RS and, 800GMII, and 1.6TMII to the ISO/IEC OSI reference model."
To:
"Figure 170–1 shows the relationship of the RS and Media Independent Interface to the ISO/IEC OSI reference model. Note that there are two variants of the Media Independent Interface defined in this clause, the 800 Gb/s Media Independent Interface (800GMII) and the 1.6 Tb/s Media Independent Interface (1.6TMII)."

Implement with editorial licence.

Cl **174** *SC* **174.2.5** *P* **263** *L* **32** # 500

Opsasnick, Eugene Broadcom

Comment Type **E** *Comment Status* **D** *(bucket) (CG)*

The term "1.6TAUI-n" is used to represent either a 1.6TAUI-8 or a 1.6TAUI-16. "1.6TAUI-n" is usually used a singular noun as in the first sentence of 174.2.5, line 31 that states "A 1.6 Tb/s Attachment Unit Interface (1.6TAUI-n) provides an electrical interface ....". However in the second sentence on line 32, the same term is used as a plural noun which sounds funny. The standard should stick to using "1.6TAUI-n" as a singular noun whenerver possible.

SuggestedRemedy

Change the second sentence of 174.2.5
From:
"1.6TAUI-n are defined for chip-to-chip (C2C) and chip-to-module (C2M) implementations."
To:
"Two widths, 8-lane and 16-lane, of 1.6TAUI-n are defined for chip-to-chip (C2C) and chip-to-module (C2M) implementations."

Change the last sentence of 174.4.5
From: "1.6TAUI-n are instantiated within a Physical Layer implementation as described in 176B.7"
To:
"Each 1.6TAUI-n is instantiated within a Physical Layer implementation as described in 176B.7".

Similar changes should be made to 169.2.4a for the updates to the summary of the 800GE architecture.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy, including the suggested changes to 169.2.4a, with editorial license.

Cl **174** *SC* **174.2.5** *P* **263** *L* **35** # 501

Opsasnick, Eugene Broadcom

Comment Type **E** *Comment Status* **D** *(bucket) (CG)*

The list of the 4 types of 1.6TAUI-n on lines 35-41 should be presented as a dashed list. This would be consistent with similar lists of AUIs in 118.1.3 , and 171.4.

The similar list of 800-GAUI-n in 169.2.4a should also be changed to a dashed list.

SuggestedRemedy

Change:
"The 1.6TAUI-16 C2C is specified in Annex 120F.

The 1.6TAUI-16 C2M is specified in Annex 176D.

The 1.6TAUI-8 C2C is specified in Annex 176C.

The 1.6TAUI-8 C2M is specified in Annex 176D."

To:
" - The 1.6TAUI-16 C2C is specified in Annex 120F.
- The 1.6TAUI-16 C2M is specified in Annex 176D.
- The 1.6TAUI-8 C2C is specified in Annex 176C.
- The 1.6TAUI-8 C2M is specified in Annex 176D."

In 169.2.4a on page 199, starting on line 51, change the four separate paragraphs of 800GAUI-n types to a dashed list.
Change:
"The 800GAUI-8 C2C is specified in Annex 120F.

The 80GAUI-8 C2M is specified in Annex 120G.

The 800GAUI-4 C2C is specified in Annex 176C.

The 800GAUI-4 C2M is specified in Annex 176D"

To:
" - The 800GAUI-8 C2C is specified in Annex 120F.
- The 80GAUI-8 C2M is specified in Annex 120G.
- The 800GAUI-4 C2C is specified in Annex 176C.
- The 800GAUI-4 C2M is specified in Annex 176D"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The proposed changes would make the formatting of 174.2.5 inconsistent with the other subclauses under 174.2. The proposed changes do not improve the clarity or accuracy of the draft.

Cl **174A** *SC* **174A.6** *P* **717** *L* **43** # 240

He, Xiang Huawei

Comment Type **T** *Comment Status* **D** *(bucket) (CG)*

Is it really necessary to specify CRC error ratio to three digits?

SuggestedRemedy

Consider to keep only two digits like all other error ratios.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The extra two digits will have insignificant impact on the the FLR which is specified with 2 significant figures.
Change "5.706E-11" to "5.7E-11".

Cl **174A** *SC* **174A.8.2** *P* **720** *L* **6** # 456

Slavick, Jeff Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (CG)*

optical clauses are using block error ratio methods in the "recevier functional test". In 174A8.2 we talk about splitting the data based "p physical lanes". But for example in FR4 there's only one phyiscal lane (fiber) but you have the data flowing over mulitple lanes (wavelengths) in that single physical lane.

SuggestedRemedy

remove the word physical

change physical to input/output

Proposed Response *Response Status* **W**

PROPOSED REJECT.
For WDM duplex PMD types, each wavelength is a physical lane.
As an example, the overview in 183.1 says that for 800GBASE-FR4 and 800GBASE-LR4 "The PMDs provide point-to-point 800 Gb/s Ethernet links over four wavelength division multiplexing (WDM) lanes on single-mode fiber". It never refers to the fiber a being a lane.

Cl **174A** *SC* **174A.8.2** *P* **720** *L* **8** # 241

He, Xiang Huawei

Comment Type **TR** *Comment Status* **D** *(bucket) (CG)*

The number of physical lanes is p, so the index i should be in the range" 0 through p-1", instead of "0 through p".

SuggestedRemedy

Change "p" to "p-1"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **174A** *SC* **174A.8.2** *P* **720** *L* **9** # 242

He, Xiang Huawei

Comment Type **TR** *Comment Status* **D** *(bucket) (CG)*

"test_block_error_bin_i_k" is used in other clause, instead of "test_block_error_count_i_k".
Change "count" to "bin".
Do the same for "test_block_error_count_i_16p".

SuggestedRemedy

Change "count" to "bin" for "test_block_error_bin_i_k" and "test_block_error_count_i_16p".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "test_block_error_count_i_k"
To "test_block_error_bin_i_k"
Change "test_block_error_count_i_16p"
To: "test_block_error_bin_i_16p"
Implement with editorial license.

Cl **174A** *SC* **174A.8.3** *P* **720** *L* **16** # 410

Ran, Adee Cisco Systems

Comment Type **T** *Comment Status* **D** *(bucket) (CG)*

174A includes many instances of "histogram". This term is potentially misleading for readers because its typical meaning uses counts, not probabilities.
To avoid going into more precise but less common mathematical terms, I suggest (based on https://www.itl.nist.gov/div898/handbook/eda/section3/histogra.htm) using the term "Relative histogram". To minimize disruption to the text, the existing term can be retained, but a clarification should be provided.

SuggestedRemedy

Add the following informative NOTE after the first paragraph of 174A.8.3:
NOTE--Within this annex, the term "histogram" denotes an array that holds values normalized such that the sum of the values is one. This is sometimes referred to as a relative histogram.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **174A** *SC* **174A.8.3** *P* **720** *L* **39** # 243

He, Xiang Huawei

Comment Type **TR** *Comment Status* **D** *(bucket) (CG)*

In Equation 174A-1 and 174A-2, "test_block_error_count_i_k" should be "test_block_error_bin_i_k".

SuggestedRemedy

Change "test_block_error_count_i_k" to "test_block_error_bin_i_k" in Equation 174A-1 and 174A-2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Note that comment #242 proposed to rename the counters where they are defined in 174A.8.2.
Implement the suggested remedy with editorial license.

Cl **174A** *SC* **174A.8.4** *P* **720** *L* **52** # 244

He, Xiang Huawei

Comment Type **TR** *Comment Status* **D** *(bucket) (CG)*

#Definition of k#
Are we defining the variables at the first appearance and use this definition across this Annex? Or the definition varies from subclause to subclause?
For example, if k is defined in 174A.8.2, where it says k is "in the range 0 through 15" (line 9) and again in 174A.8.3 as "k<16" (line 19), but in 174A.8.4 it has "k = 16" (line 52)? If this is a different k, we need to define it locally in this subclause (and in each subclause it is used). Otherwise we should stick to "0 through 15" as the range for "k".

SuggestedRemedy

Define the range of k clearly in the beginning, adding something like "k in the range 0 through 15 in Annex 174A", if this is the same k across this Annex. Do not redefine it, or at least use the same definition whenever it is used.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This location as well as page 720 line 19 are not defining k, but rather defining the counts or histograms differently for different subranges of k. The indexing of the counters is unfortunately complicate because we named the 17th counter differently then the rest so is not conveniently indexed (see page 720 line 9).
The definitions of k are otherwise consistent and correct. The proposed remedy does not improve the clarity.

Cl **174A** *SC* **174A.8.5** *P* **721** *L* **29** # 245

He, Xiang Huawei

Comment Type **TR** *Comment Status* **D** *(bucket) (CG)*

#Definition of k#
“for all k>0” meaning "0<k<16" or "0<k<n"? Is 16 included?

SuggestedRemedy

Define the range of k clearly in the beginning, adding something like "k in the range 0 through 15 in Annex 174A", if this is the same k across this Annex. Do not redefine it, or at least use the same definition whenever it is used.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Resolve using the response to comment #244.

Cl **174A** *SC* **174A.8.7** *P* **722** *L* **3** # 55

Brown, Matt Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CG)*

"AUI component" is a new term introduced in 802.3dj.

SuggestedRemedy

Add a nomenclature subclause in Annex 174A and provide a definition for AUI component using the definition from 178B.3. Implement with editorial license.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **174A** *SC* **174A.10.4** *P* **725** *L* **8** # 246

He, Xiang Huawei

Comment Type **TR** *Comment Status* **D** *(bucket) (CG)*

The range for "i" is not clearly defined. While reading this I was confused whether this is only for the test channel or should this include the possible AUI's in the PHY receiver under test. If it is only PMD, then total lane number is p - we should clearly state that, and remove "or AUI component" in step b). If it includes the possible AUIs in the PHY receiver, the total number of lanes would be p + N*n, where N is the number of AUIs?

SuggestedRemedy

Specify the total number of lanes to be considered, i.e. range of "i" in this subclause.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The method defined in 174A.10.4 is for the entire PHY receive path as measured at the PMD inputs and is not relevant to the AUI or AUI components.
Change "the PMD or AUI component" to "the PMD".
Change "For each lane i" to "For each PMD input lane i"

Cl **174A** *SC* **174A.12** *P* **726** *L* **4** # 211

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CG)*

In Figure 174A-6, the spans labelled "Physical Layer implementation" were meant to illustrate the portion of this block diagram that is within the Physical Layer, similar to the spans for PHY and xMII extender.

SuggestedRemedy

In Figure 174A-6, change "Physical Layer implementation" to "Physical Layer" in two places.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **174A** *SC* **174A.12** *P* **727** *L* **34** # 451

Dudek, Mike — Marvell

Comment Type **T** *Comment Status* **D** *(bucket) (CG)*

The PMD link BER is wrong in figures , 174A-9. and a74A-10. The BERs do not add correctly to the PCS-toPCS path allocation. It is stated correctly as 2.28e-4 in Table 174A-1.

SuggestedRemedy

Change "2.76e-4" to "2.24e-4" in these two figures.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Table 174A-1 specifies BER of 2.28E-4 for the PMD link.
In Figure 174A-9 and Figure 174A-10 change the PMD link BER allocation to 2.28E-4.
[Editor's note: Changed line from 14 to 34]

Cl **174A** *SC* **174A.12** *P* **729** *L* **30** # 279

Kutscher, Noam — Marvell

Comment Type **T** *Comment Status* **D** *(bucket) (CG)*

Line 30 & 33 are the same line –'xAUI-n C2Cb'

SuggestedRemedy

Delete one of them.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Each row in Table 174A-2 represents one ISL in a PCS-to-PCS path. There is one xAUI-n C2C link at one end, a PMD link in the middle, and another xAUI-n C2C link at the other end. The sum of allocations to these links is equal to the net allocation to the PCS-to-PCS path. The table is correct as is. A similar approach is taken in Table 174A-1.

Cl **174A** *SC* **174A.12** *P* **729** *L* **48** # 212

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket) (CG)*

BER specified for xAUI-n C2C in Table 174A-3 (0.1E-4) is larger than that specified in the preceding tables for PHYs. For the latter, the numbers provided are the limits for the xAUI-n defined in Annex 176C and Annex 176D which were chosen to leave sufficient BER allocation for the PMD. For the the xMII Extender however there is room for excess BER on the C2C. The value 0.1E-4 is thus used allowing use of 50 Gb/s per lane (Annex 120D) and 100 Gb/s per lane xAUI-n (Annex 120F) xAUI-n C2C which are specified to 0.1E-4. A note for the reader to explain this would be helpful as it is not obvious.

SuggestedRemedy

In Table 174A-3, add a table note related to the C2C "A value of 0.1E-4 rather than 0.08E-4 is allocated to an xAUI-n C2C in an xMII Extender since there significant BER margin and this allows the use of an xAUI-n defined in Annex 120D or Annex 120F to be used without reducing the specified BER limit."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **174A** *SC* **174A.12** *P* **729** *L* **48** # 213

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket) (CG)*

BER for the XS-to-XS path is 2.21E-4. However, the total allocation to the two ISLs withing an XS-to-XS path (xMII extender) is 0.34. So there is significant margin. The allocation to the XS-to-XS path is based on the FLR allocated to the XS-to-XS path capability of the RS-FEC. The allocation to the xAUI-n is based on the specified limits for permitted xAUI-n, the sum of which is much lower than necessary to meet the FLR target. A note for the reader to explain this would be helpful as it is not obvious.

SuggestedRemedy

In Table 174A-3, add a table note related to the XS-to-XS path BER allocation as follows: "The BER allocation for the XS-to-XS path is based on the FLR target and the capability of the RS-FEC while the BER per ISL is based on the specified limits for permitted xAUI-n C2C and C2M, which were constrained by their respective specifications. This results in a significant BER margin for the XS-to-XS and PCS-to-FEC paths."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **175** *SC* **175.1.3** *P* **299** *L* **11** # 507

Opsasnick, Eugene Broadcom

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

In the summary list of PCS functions "FEC degrade detection and signaling" was changed to "FEC degrade signaling" because only the signaling is required and detection is optional. However, the FEC degrade detection is a significant optional feature that is described in this clause and it should be added back to the list. The introductory sentence to this list should state is a list of PCS functino, no just a list of functions required by thje MAC and RS.

SuggestedRemedy

Change: "FEC degrade signaling" to "FEC degrade detection and signaling"

Also change the first sentence of 175.1.3
From:
"The 1.6TBASE-R PCS provides all services required by the MAC and RS, including the following:"
To:
"The 1.6TBASE-R PCS provides the following functions including all services required by the MAC and RS:"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Both detection and signalling should be listed as functions of FEC degrade, but also make it clear that part of it is optional since all other list items are required.

Change: "FEC degrade signaling" to "FEC degrade detection (optional) and signaling (required)"

Cl **175** *SC* **175.2.4.7** *P* **285** *L* **5** # 343

Simms, William NVIDIA

Comment Type **E** *Comment Status* **D** *(bucket) (L)*

"round robin" instead of "round-robin" used elsewhere in document

SuggestedRemedy

change "round robin" to "round-robin" also on line 8

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **175** *SC* **175.2.5.5** *P* **288** *L* **32** # 71

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

Boolean variables are not "deasserted", they are set to "false".

SuggestedRemedy

Change: It is deasserted when rx_am_sf<1> is deasserted
To: It is set to false when rx_am_sf<1> is deasserted

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **175** *SC* **175.2.5.5** *P* **288** *L* **37** # 72

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

Boolean variables are not "deasserted", they are set to "false".

SuggestedRemedy

Change: It is deasserted when rx_am_sf<2> is deasserted
To: It is set to false when rx_am_sf<2> is deasserted

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **175** *SC* **175.2.5.7** *P* **288** *L* **53** # 423

Nicholl, Shawn AMD

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

Currently, there is a note (in 175.2.4.3) for mapping to OTN. But no corresponding note for demapping from OTN.

SuggestedRemedy

At the end of "175.2.5.7 Block collection", add "Note -- The stream of 257-bit blocks generated by this process is used as the reference signal for de-mapping from OTN."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license.

Cl **175** *SC* **175.2.6.2.2** *P* **290** *L* **8** # 73

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

In 175.2.5.7, add to the end of the definition of amps_lock<x>:
"The value of amps_lock<x> is set by the alignment marker lock state diagram (see Figure 119-12)."
Implement with editorial license.

Cl **175** *SC* **175.2.6.2.2** *P* **290** *L* **42** # 74

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Modify the definition of the reset variable by adding: ", and is false otherwise." to end of the last sentence.
Implement with editorial license.

Cl **175** *SC* **175.3** *P* **293** *L* **34** # 378

Ran, Adee Cisco Systems

Comment Type **E** *Comment Status* **D** *(bucket) (L)*

FEC degrade is part of the PCS functionality. It should be under 175.2 PCS functions. Similarly for Loopback in 175.4.

SuggestedRemedy

Move 175.3 and 175.4 to become subclauses of 175.2.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The whole clause is the definition of the PCS functionality. Subclause 175.2 describes the PCS top-level interfaces and TX and RX data manipulations mainly for "normal flow" of data.". Loopback functionality does not fall into this category for 175.2 and should remain as a separate subclause at the same level as 175.2 (as is also done in other PCS clauses such as 119 and 172). FEC degrade has a portion that is performed in the TX path and a portion that is performed in the RX path, and these are described in 172.2.2 (TX functionality) and 172.2.3 (RX functionality). Subclause 175.3 is used at this level to tie the two parts of the FEC degrade feature together and act as an anchor for other clauses to reference.

Cl **175** *SC* **175.3** *P* **293** *L* **40** # 377

Ran, Adee Cisco Systems

Comment Type **E** *Comment Status* **D** *(bucket) (L)*

"FEC degrade detection is specified in 175.2.5.3. FEC degrade detection is optional." 175.2.5.3 does not specify FEC degrade detection; it only changes the definition of the counters (and thus modifies the criteria for detection). This subclause is the specification of the Reed-Solomon decoder, and it refers to the original specification in 119.2.5.3 - that is where FEC degrade is actually defined. A direct reference would be friendly for the reader.

SuggestedRemedy

Change to "FEC degrade detection is specified in 119.2.5.3 with the exception listed in 175.2.5.3. FEC degrade detection is optional."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Implement the suggested remedy with editorial license.

[Editor's note: changed page from 287 to 293]

Cl **175** *SC* **175.7** *P* **295** *L* **3** # 6

Brown, Matt Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (L)*

Editor's note expire's after Draft 2.1.

SuggestedRemedy

Delete editor's note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **175** *SC* **175.9.4.2** *P* **299** *L* **11** # 8

Brown, Matt Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

The PCS lane number is captured to a management variable, which would then be mapped to MDIO or alternate register as defined in 175.8.

SuggestedRemedy

For RF2, change the Feature to "PCS lane number is captured
to a management variable" and in the Status column change "MD:M" to "M".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **175** *SC* **175.9.4.4** *P* **300** *L* **31** # 7

Brown, Matt Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket) (CG)*

The management PICS do not align well with the specifications. The management variables are defined at the end of the clause. The subclause specifies management variables, not management objects. It specifies an "alternate" not "equivalent" mechanism if MDIO is not implemented. The "alternate" method is mandatory, not optional, if MDIO is not implemented.

SuggestedRemedy

Move 179.9.4.4 "Management", to the end of 179.9.4.
In M1, change feature to "Alternate access to PCS management variables is provided" and change status to "MD:M".
For Clause 176 through Clause 187, Annex 176C, and Annex 176D, align the PICS with the updated 179.9.4.4 and including *MD in the "Major capabilities/options" subclause.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Note that the suggested remedy refers to 179.9.4.4 and 179.9.4, but those references should be to 175.9.4.4 and 175.9.4.
Implement the suggested remedy with editorial license and with consideration of the resolution of comment #376 which suggests removing most of the PICS content.
[Editor's note: CC 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 176C, 176D]

Cl **176** *SC* **176.2** *P* **306** *L* **29** # 354

Swenson, Norman — Nokia, Point2

Comment Type **ER** *Comment Status* **D** *(bucket) (L)*

"When the client sublayer is an xAUI-n"… An AUI has never (to my knowledge) been defined as a sublayer, but rather a physical instantiation of a service interface. If we are going to treat it as a sublayer now, we need to formally state that.

SuggestedRemedy

Clarify whether we are treating xAUI-n as a sublayer.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The comment correctly points out that the AUI is not defined as a sublayer.
Change from:
"When the client sublayer is an xAUI-n, each instance of tx_symbol and rx_symbol takes on one of four values... "
To:
"When there is an xAUI-n above the PMA, each instance of tx_symbol and rx_symbol takes on one of four values "

Additionally, there are other instances in Clause 176 where an AUI is referred to as a sublayer.
- 176.3, Page 307, Line 38
- Fig 176-2, footnotes c and d.

Make changes to all instances in Clause 176 where an AUI is referred to as a sublayer.
Implement with editorial license.

Cl **176** *SC* **176.4.2** *P* **311** *L* **10** # 283

Huber, Thomas — Nokia

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

The AMs provide both the RS FEC symbol boundary and the RS FEC codeword boundary

SuggestedRemedy

Change the beginning of the 3rd sentence from:
"This also identifies the RS-FEC symbol boundary and allows the PCSLs to then be deskewed and aligned to a multiple-symbol or codeword boundary…"
to
"This also identifies the RS-FEC symbol boundary and RS-FEC codeword boundary and allows the PCSLs to then be deskewed and aligned to a multiple-symbol or codeword boundary..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license.

Cl **176** *SC* **176.4.2.3.1** *P* **312** *L* **1** # 284

Huber, Thomas — Nokia

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

The 4-codeword deskew contains additional text about how much skew is left after 4 CW deskew is complete. That would seem to obvious - iby definition, it's an integer multiple of 4 CW, since that is what the process says must be done. By comparison, the 20 bit and 40 bit deskew description doesn't have similar information about remaining skew.

SuggestedRemedy

Delete the paragraph starting with "After the 4-codeword deskew is complete, the remaining inter-lane skew…", the two dashed list items below it, and the NOTE (it should be obvious that zero is an integer, so a full deskew would be compliant with a deskew to 4 CW boundaries, in the same way that is obvious for the 20-bit and 40-bit deskews).

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The paragraph provides the allowed values of inter-lane skew between PCS lanes, for the 200Gb/s and 400Gb/s data rates. Having this additinal detail does not hurt even though it may seem obvious. Similarly, the note that explictly states that a remaining skew of zero satsifies the requirement of the 4-codeword deskew function, is good to have, since some implementations may prefer to perform a full deskew as opposed to deskewing to the closest 4-codeword boundary.

In summary, this paragraph provides additional explanation which will help the reader understand the function better, and there is insufficient justification to deleting it.

Cl **176** *SC* **176.4.4.2.1** *P* **320** *L* **54** # 75

Wienckowski, Natalie — IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Update the definition of reset to keep it consistent with comments #74 - reset is a special case.
Modify the definition of the reset variable by adding: ", and is false otherwise." to end of the last sentence.
Implement with editorial license.

Cl **176** *SC* **176.4.4.2.1** *P* **321** *L* **7** # 76

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Update the definition of the align_status_mux variable from:
"Boolean variable that is set to true when PCS lane synchronization is complete. It indicates that all_locked_mux is true and deskew is complete."
To:
"Boolean variable that indicates the alignment marker lock and deskew processes are complete. Its value is set by the PMA multiplex synchronization state diagram (see Figure 176-10)."
Implement with editorial license.

Cl **176** *SC* **176.4.4.2.1** *P* **321** *L* **21** # 77

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Update the definition of the pcs_lanes_identified_mux variable from:
"Boolean variable that is set to true if each input lane is locked to a unique alignment marker sequence identified using the alignment markers in Table 119–1 for 200GBASE-R, Table 119–2 for 400GBASE-R, Table 172–2 and Table 172–3 for 800GBASE-R, or Table 175–2 for 1.6TBASE-R PMAs."
To:
"Boolean variable that is set to true if each input PCS lane is locked to a unique alignment marker sequence identified using the alignment markers in Table 119–1 for 200GBASE-R, Table 119–2 for 400GBASE-R, Table 172–2 and Table 172–3 for 800GBASE-R, or Table 175–2 for 1.6TBASE-R PMAs. It is set to false upon entering the LOSS_OF_ALIGNMENT state in the PMA multiplex synchronization state diagram (see Figure 176-10)."
Implement with editorial license.

Cl **176** *SC* **176.4.4.2.1** *P* **321** *L* **42** # 78

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the definition of all_locked_demux from:
"Boolean variable that is set to true when pmal_locked_demux<y> is true for all y. For y = 0 to (n–1)."
To:
"Boolean variable is set to true when pmal_locked_demux<y> is true for all y, where y = 0 to (n-1), which indicates all PCS lanes within all PMA lanes have achieved alignment marker lock. Otherwise, this variable is set to false."
Implement with editorial license.

Cl **176** *SC* **176.4.4.2.1** *P* **321** *L* **48** # 79

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the definitiion of pcs_lanes_identified_demux
From:
"Boolean variable that is set to true if all demultiplexed PCS lanes are locked to a unique alignment marker sequence identified using the alignment markers in Table 119–1 for 200GBASE-R, Table 119–2 for 400GBASE-R, Table 172–2 and Table 172–3 for 800GBASE-R, or Table 175–2 for 1.6TBASE-R PMAs."
To:
"Boolean variable that is set to true if all demultiplexed PCS lanes are locked to a unique alignment marker sequence identified using the alignment markers in Table 119–1 for 200GBASE-R, Table 119–2 for 400GBASE-R, Table 172–2 and Table 172–3 for 800GBASE-R, or Table 175–2 for 1.6TBASE-R PMAs. It is set to false upon entering the LOSS_OF_SYMBOL_LOCK state in the PMA demultiplex symbol lock state diagram (see Figure 176-11)."

Cl **176** *SC* **176.4.4.2.1** *P* **321** *L* **52** # 80

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the definiintion of pmal_locked_demux<y>
From:
"Boolean variable that is set to true when amps_lock<x> is true, as defined in 119.2.6.2.2, for all PCSLs within the single input lane in the demultiplexing direction. For y = 0 to (n–1)"
To:
"Boolean variable that is set to true when amps_lock<x> is true, as defined in 119.2.6.2.2, for all PCSLs within the single input PMA lane y in the demultiplexing direction, and is set to false otherwise. For y = 0 to (n–1)."
Implement with editorial license.

Cl **176** *SC* **176.4.4.2.1** *P* **322** *L* **5** # 81

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
This variable definition actually explains how the restart_lock variable in Fig. 119-12 gets replaced by the restart_lock_demux<y> variable for use in the CL 176 data flow. This is already explained in 176.4.3.2.3.
Remove restart_lock from the state diagram variable definitions in 176.4.4.2.1.
Remove similar redundant definition of restart_lock in the multiplexing direction in 176.4.4.2.1 and add a description of restart_lock for the multiplexing direction in 176.4.2.2 similar to the description in 176.4.3.2.3.
Implement with editorial license.

Cl **176** *SC* **176.4.4.2.1** *P* **322** *L* **10** # 82

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the definition of restart_lock_demux<y>
From:
"Boolean variable that is set to true in the SYMBOL_LOCK_RESTART and SLIP_CONTROL states to restart the alignment marker lock processes for the PCSLs within a single input lane in the demultiplexing direction. For y = 0 to (n–1)."
To:
"Boolean variable that is used to restart the alignment marker lock processes for the PCSLs within the single input lane y in the demultiplexing direction, where y = 0 to (n–1). Its value is set by the PMA demultiplex symbol lock state diagram (see Figure 176-11)."
Implement with editorial license.

Cl **176** *SC* **176.4.4.2.1** *P* **322** *L* **17** # 83

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to true or false. There is just a description of the use.

SuggestedRemedy

Change: For y = 0 to (n–1).
To: It is set to true for y = 0 to (n–1). Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the definition of symbol_lock_counter_demux<y>
From:
"Boolean variable that indicates that the symbol_lock_counter_demux<y> has reached its terminal count. For y = 0 to (n–1).",
To:
"Boolean variable that is set to true when the counter symbol_lock_counter_demux<y> has reached its terminal count, and is set to false when starting the counter (see figure 176-11). For y = 0 to (n–1)."

Implement with editorial license.

Cl **176** *SC* **176.12** *P* **337** *L* **3** # 64

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket) PICS (L)*

Per editor's note, the PICS is incomplete.

SuggestedRemedy

Complete the PICS with editorial license and delete editor's note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with consideration of the resolution to comment #376 which suggests removing most of the PICS content.

Cl **176c** *SC* **176c.6.3.7** *P* **771** *L* **52** # 346

Simms, William — NVIDIA

Comment Type **E** *Comment Status* **D** *(bucket) (E)*

RLcd is defined but RLdc is used for equation and plot

SuggestedRemedy

Change RLcd to RLdc in the definition

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #344

Cl **176C** *SC* **176C.6.4.6** *P* **776** *L* **33** # 306

Healey, Adam — Broadcom, Inc.

Comment Type **TR** *Comment Status* **D** *(bucket) RX JTOL (E)*

The jitter tolerance test procedure defined in Annex 176C is not consistent with the test procedure defined in Clause 178. There is no obvious reason why the test procedures should differ.

SuggestedRemedy

Align the jitter tolerance test procedure defined in 176C.6.4.6 with the jitter tolerance test procedure defined in 178.9.3.5.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The addition of additive broad-band noise to calibrate COM in the jitter tolerance test (comment #496 against D2.0, see <https://www.ieee802.org/3/dj/comments/D2p0/8023dj_D2p0_comments_final_id.pdf#page=129>) was implemented in clause 178 but not in the other clasues, although that was obviously the intent.

Apply changes corresponding to the resolution of comment #496 in clause 179, annex 176C, and annex 176D.
Implement with editorial license.

Cl **176C** *SC* **176C.7** *P* **781** *L* **17** # 413

Ran, Adee — Cisco Systems

Comment Type **E** *Comment Status* **D** *(bucket) (E)*

The references for RLcd and for maximum AC-coupling frequency point to 176C.7.4 and 176C.7.5, which in turn point to subclauses of clause 178 with no modification.
There are other references pointing directly to clause 178. The chain of references can be eliminated here too.
(ILdd and ERL are exceptions; these specifications have different values or parameters).

SuggestedRemedy

Replace the references in these rows to point directly at the specifications in clause 178, and delete the subclauses in this annex.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176C** SC **176C.7.3** P **781** L **1** # 412

Ran, Adee — Cisco Systems

Comment Type **E** *Comment Status* **D** *(bucket) (E)*

Stray space in "an d"

SuggestedRemedy

Change to "and".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176D** SC **176D.6.1** P **790** L **11** # 150

Ghiasi, Ali — Ghiasi Qunatum/Marvell

Comment Type **TR** *Comment Status* **D** *(bucket) Figure labels (E)*

Lable for the DC blocks are missing

SuggestedRemedy

Add capacitor or DC blocks on the figrue 176D-5

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The purpose of the figure is to illustrate the test points. Unnecessary details would reduce the clarity of the figure.
Similar figures exist in previous AUI-C2M annexes (see Figure 83E-2 as an initial example, which many similar figures are based on, and the more recent Figure 120G–2 and Figure 120G-4). It is assumed that readers are familiar with the symbolic representation of a capacitor.

Cl **176D** SC **176D.6.4** P **790** L **47** # 3

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (E)*

Editor's note expire's after Draft 2.1.

SuggestedRemedy

Delete editor's note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176D** SC **176D.6.4** P **791** L **39** # 4

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (E)*

Editor's note expire's after Draft 2.1.

SuggestedRemedy

Delete editor's note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176D** SC **176D.6.5** P **792** L **5** # 5

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (E)*

Editor's note expire's after Draft 2.1.

SuggestedRemedy

Delete editor's note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **176D** *SC* **176D.7.1** *P* **794** *L* **21** # 310

Healey, Adam — Broadcom, Inc.

Comment Type **E** *Comment Status* **D** *(bucket) Figure labels (E)*

The term "die-to-die channels" is used but the term "die" is not in IEEE Std 802.3 (or in the IEEE P802.3dj draft). "Device" has been used instead e.g., in the Channel Operating Margin reference model.

SuggestedRemedy

Change "die-to-die channels" to "device-to-device channels". Make the same change in Figure 176D-6.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
"Device-to-Device channel" has not been used anywhere in 802.3 or in presentations. The editor suspects that this term would be more confusing that "die-to-die".
However, the terms "die-to-die" and "end-to-end" that appear in 176D.7 and subclause can be made more specific, using the named test points.

In the first sentence of 176D.7, change from "the channel between the C2M components is not specified from end to end" to "the channel between the C2M components is not specified".
In 176D.7.1, change "The insertion loss of the host, module, and die-to-die channels is not expected to be measurable" to "The insertion losses of the host channel, the module channel, and the TP0d-TP1d and TP4d-TP5d channels are not expected to be measurable".
In Figure 176D-6, change the label "Die-to-die" to "TP0d-TP1d and TP4d-TP5d".
Implement with editorial license.

Cl **176D** *SC* **176D.7.1** *P* **794** *L* **25** # 275

Kutscher, Noam — Marvell

Comment Type **T** *Comment Status* **D** *(bucket) Figure labels (E)*

The point in the center is not well defined. What is it? cage? HCB?

SuggestedRemedy

Add an explanation of the location to which the arrows point.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The NOTE at the bottom of the figure states "For loss budgeting purposes, the connector is considered part of the host". The arrows representing the channels indicate that; the connector (labeled) is within the host channel.
As noted in the subclause text, these losses are not expected to be measurable.
It is not clear whether additional explanation is necessary, and what it should be.
The suggested remedy does not provide sufficient detail to implement.

Cl **176D** *SC* **176D.8.13.2** *P* **805** *L* **23** # 307

Healey, Adam — Broadcom, Inc.

Comment Type **TR** *Comment Status* **D** *(bucket) ITOL/JTOL (E)*

The first sentence of the note below Table 176D-10 states the following. "For a module input test, ADD and sigmaRJ calculated from pattern generator measurements using Equation (179-14) and Equation (179-15) can be higher than the values in Table 176D-7. In this case, a suitable channel should be chosen in order to meet the COM requirement with these higher values." This suggests that a receiver is permitted to be tested with a transmitter that is far outside the limits imposed on compliant transmitters. It also relies on the Channel Operating Margin (COM) calculation being able to correctly evaluate the penalty caused by transmitters with high jitter. The COM calcuation uses a first-order approximation of the noise due to transmitter jitter and the accuracy of this approximation can be expected to degrade for higher levels of jitter. Therefore, it seems likely trade-offs between channel loss/noise and jitter may not a evaluated accurately. The test transmitter, including the added sinusoidal jitter, should be required to meet the JRMS and Jnu03 specifications or the degree to which the test transmitter is allowed to exceed the specifications should be limited.

SuggestedRemedy

Remove the first sentence of the note. The requirements of 176D.8.12.2 (referred to by 176D.8.13.2) item d) are then expected to apply.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #308.

Cl **177** *SC* **177.1.1** *P* **339** *L* **12** # 189

Bruckman, Leon — Nvidia

Comment Type **E** *Comment Status* **D** *(bucket) (L)*

Text can be simplified. As an example see similar text in 176.1.1

SuggestedRemedy

Change: "When necessary for disambiguation, to differentiate the Inner FEC defined in this clause"
To: "When necessary to differentiate the Inner FEC defined in this clause"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #504

Cl **177** *SC* **177.1.1** *P* **388** *L* **13** # 504

Opsasnick, Eugene Broadcom

Comment Type **ER** *Comment Status* **D** *(bucket) (L)*

Redundant language should be simplified.

SuggestedRemedy

Change:
"When necessary for disambiguation, to differentiate the Inner FEC defined in this clause from the 800GBASE-LR1 Inner FEC defined in Clause 184, the terms ..."
To:
""When necessary to differentiate the Inner FEC defined in this clause from the 800GBASE-LR1 Inner FEC defined in Clause 184, the terms ..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **177** *SC* **177.1.3** *P* **339** *L* **12** # 506

Opsasnick, Eugene Broadcom

Comment Type **ER** *Comment Status* **D** *(bucket) (L)*

Missing comma and article

SuggestedRemedy

Change:
"Per Inner FEC flow binary(128,120) encoding and decoding"
To:
"Per Inner FEC flow, a binary(128,120) encoding and decoding"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **177** *SC* **177.1.4** *P* **340** *L* **28** # 285

Huber, Thomas Nokia

Comment Type **ER** *Comment Status* **D** *(bucket) (L)*

No need to describe the pad as "8x128b" in Figure 177-2. The details of how the pad is constructed are in 177.4.7, which is titled "Pad insertion and format".

SuggestedRemedy

Change the label from "8x128b pad insertion" to "Pad insertion" Make the same change in figure 177A-1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **177** *SC* **177.2** *P* **341** *L* **24** # 508

Opsasnick, Eugene Broadcom

Comment Type **E** *Comment Status* **D** *(bucket) (L)*

The cross-referece to Figure 177-2 in this paragraph is out of place, especially since the paragraph prior to it describes at the same client interface which are illustrated in the same figure without a cross-reference.

SuggestedRemedy

Remove "(see Figure 177-2)" from the line 24.

At line 4 of page 341, just prior to "The service interface primitives are summarized as follows:", add a single sentence paragraph that reads:
"The Inner FEC service interfaces is illustrated in Figure 177–2..

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license.

Cl **177** *SC* **177.3** *P* **342** *L* **16** # 509

Opsasnick, Eugene Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (L)*

The NOTE under table 177-2 talks about PMD:IS_UNITDATA_i.indication provided to the Inner FEC possibly being invalid, but the Table 177-2 is about the generation of PMD:IS_SIGNAL.request which is in the opposite direction and would correspond to the PMD:IS_UNITDATA.request. Also, it is ambigous which "SIGNAL_OK" the note is referring to, "FEC:IS_SIGNAL.request(SIGNAL_OK) or the PMD:IS_SIGNAL.request(SIGNAL_OK).

SuggestedRemedy

It seems this note is referring to SIGNAL_OK from the PMD and the UNITDATA from the PMD. Move this NOTE to subcluse 177.2 just below Table 177-1 and change the text make it clear which SIGNAL_OK is being referenced.

Change the text of the NOTE,
From:
"NOTE—SIGNAL_OK = OK does not guarantee that the stream provided to the Inner FEC sublayer through PMD:IS_UNITDATA_i.indication is a valid signal."
To:
"NOTE—PMD:IS_SIGNAL.indication(SIGNAL_OK) = OK does not guarantee that the stream provided to the Inner FEC sublayer through PMD:IS_UNITDATA_i.indication is a valid signal."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **177** *SC* **177.4.5** *P* **346** *L* **32** # 495

Slavick, Jeff Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (L)*

There are two instances of "dot" matrix. Lets make sure both a referred to.

SuggestedRemedy

Change "where the "*" denotes a matrix dot multiplicaiton."
To: "where the "*" denotes matrix dot multiplication in the preceding equation and in Eq 177-4"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **177** *SC* **177.4.5** *P* **347** *L* **5** # 494

Slavick, Jeff Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (L)*

I've not heard of an inversion operation for a matrix. I know what the inverse of a matrix is. Should also make sure this explanation is relevant just to Eq 177-5

SuggestedRemedy

Change “The superscript “-1” denotes a matrix inversion operation.”
To:
The superscript “-1” denotes the inverse of the matrix in Eq 177-5.
Or:
The superscript “-1” in Eq 177-5 is the notation for taking the inverse of the matrix.
Or:
delete this sentence entirely since superscript “-1” means “one over the thing” in math notation. So whether this is a number or a matrix it’s the same mathematical operation and how can it be mis-interpreted.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change “The superscript “-1” denotes a matrix inversion operation.”
To:
The superscript “-1” denotes the inverse of the matrix in Eq 177-5.

Cl **177** *SC* **177.4.7.1** *P* **348** *L* **41** # 496

Slavick, Jeff Broadcom

Comment Type **E** *Comment Status* **D** *(bucket) (L)*

The description of the FAS could be improved.

SuggestedRemedy

Update the section to read as follows: "The Frame Alignment Sequence (FAS) is a fixed pattern that is the first 48-bits transmitted in each pad and enables the receiver to locate the pad. The fixed FAS pattern is as follows with the leftmost bit transmitted first:
01011001 01010010 01100100 10100110 10101101 10011011"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **177** *SC* **177.4.7.2** *P* **348** *L* **48** # 190

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket) (L)*

It will be beneficial to refer to the PRBS13 pattern generator figure in the base standard.

SuggestedRemedy

Change: "using a self-synchronizing PRBS13 scrambler using the same polynomial as Equation (94–3)."
To: "using a self-synchronizing PRBS13 scrambler as shown in Figure 94-6 and using the polynomial defined in Equation (94–3)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **177** *SC* **177.5.2** *P* **350** *L* **36** # 191

Bruckman, Leon Nvidia

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

Pad identification and removal is described in the next sectio. It will be useful to refer to it.

SuggestedRemedy

Change: "removed before the received data is processed further."
To: "removed before the received data is processed further (see 177.5.3)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **177** *SC* **177.7.2.1** *P* **355** *L* **9** # 84

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to true or false. There is just a description of the use.

SuggestedRemedy

Change: Boolean variable that indicates that fas_cnt has reached its terminal count.
To: Boolean variable that is set to true when fas_cnt has reached its terminal count. Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the definition of fas_cnt_done
From:
"Boolean variable that indicates that fas_cnt has reached its terminal count."
To:
"Boolean variable that is set to true when the counter fas_cnt has reached its terminal count and is set to false when starting the counter (see Figure 177-13)."
Implement with editorial license.

Cl **177** *SC* **177.7.2.1** *P* **355** *L* **13** # 85

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change definition of fas_lock
From:
"A Boolean variable that is set to true when the receiver has detected the location of the frame alignment sequence within the pad codewords."
To:
"A Boolean variable that indicates the receiver has detected the location of the frame alignment sequence within the pad codewords. Its value is set by the Inner FEC pad detection state diagram (see Figure 177-13)."
Implement with editorial license.

Cl **177** *SC* **177.7.2.1** *P* **355** *L* **20** # 86

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add to the end of definiton of fas_valid:
"Otherwise, this variable is set to false."
Implement with editorial license.

Cl **177** *SC* **177.7.2.1** *P* **355** *L* **29** # 87

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Update the definition of reset to keep it consistent with comments #74 - reset is a special case.
Modify the definition of the reset variable by adding: ", and is false otherwise." to end of the last sentence.
Implement with editorial license.

Cl **177** *SC* **177.7.2.1** *P* **355** *L* **33** # 88

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to true or false. There is just a description that says what processes set it.

SuggestedRemedy

Add a description of when it is set to true and when it is set to false. There isn't enough information in the spec to provide a suggestion.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change the definition of restart_inner_fec_sync
From:
"A Boolean variable that is set by the Inner FEC synchronization process or the Inner FEC pad detection process."
To:
"A Boolean variable that is used to restart all eight self-synchronization processes as well as the pad detection process associated with an input lane in the receive direction. Its value can be set to true in the either the Inner FEC self-synchronization state diagram (see Figure 177-12) or the Inner FEC pad detection state diagram (see Figure 177-13). Its value is set to false upon entering the FAS_LOCK_INIT state of the Inner FEC pad detection state diagram."
Implement with editorial license.

Cl **177** *SC* **177.7.2.1** *P* **355** *L* **41** # 89

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the definition of slip_done
From:
"A Boolean variable that is set to true when the SLIP requested by the Inner FEC synchronization state diagram has been completed indicating that the next candidate 128-bit block position can be tested."
To:
"A Boolean variable that indicates the next candidate 128-bit block position can be tested by the Inner FEC self-synchronization process. It is set to true when the SLIP function completes and is set to false upon entering the GET_BLOCK state of the Inner FEC self-synchronization state diagram (see Figure 177-12).
Implement with editorial license.

Cl **177** *SC* **177.7.2.1** *P* **355** *L* **45** # 90

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the definition of the variable sync_clow<x>
From:
"A Boolean variable that is set to true after the Inner FEC codeword boundary is found for an Inner FEC flow, where x = 0 to 7, and represents an Inner FEC flow ID before identifying the actual Inner FEC flow numbering."
To:
"A Boolean variable that indicates the Inner FEC codeword boundary is found for an Inner FEC flow, where x = 0 to 7, and x represents an Inner FEC flow ID before identifying the actual Inner FEC flow numbering. The value of sync_flow<x> is set by the Inner FEC self-synchronization state diagram (see Figure 177-12). "
Implement with editorial license.

Cl **177** *SC* **177.10** *P* **360** *L* **29** # 286

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(bucket) (L)*

The variables for counting corrected codewords, uncorrected codewords, total bits, and corrected bits (rows 3-TBD) are shared with the ER1 FEC, so they should have more general names.

SuggestedRemedy

Change "Inner_FEC_..." to "FEC_..." (see related comment on 45.2.1.258)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **177** *SC* **177.10** *P* **363** *L* **29** # 287

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(bucket) (L)*

In table 177-8, all of the variables that start with "Inner_FEC_delay…" are not aligned with the description in clauses 45.2.1.177a and 45.2.1.177b (or 45.2.1.175 for the ability registers)

SuggestedRemedy

Change "Inner_FEC_delay…" to "FEC_delay…" in the last 12 rows of the table

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.1** *P* **367** *L* **15** # 58

Brown, Matt Alphawave Semi

Comment Type **TR** *Comment Status* **D** *(bucket) (E)*

The word "device" has two meaning in Clause 178. On Page 367 line 15 "device" is packaged part (e.g., die plus the package). On the other hand, on page 373 line 41 the device is something that sits on the package (e.g., die) and the package is separate from the device. The term "device" in the latter context is well embedded so the former context should be given a different term. Subclause 179.11.7.1 uses the term "packaged device".

SuggestedRemedy

When referring to a packaged part, use the term "packaged device". Another unique term would be acceptable.
Update 179, 176C, 176D similarly, as necessary.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
In 178.1, change "Devices conform to" to "PMD transmitters and PMD receivers conform to".
Change "between two devices" to "between two PMDs" and similarly in the rest of the sentence.

Elsewhere, change "device" to "PMD" when it refers to a PMD rather than the die inside the package.
Implement with editorial license.

Cl **178** *SC* **178.1** *P* **384** *L* **47** # 251

Mellitz, Richard Samtec

Comment Type **TR** *Comment Status* **D** *(bucket) (E)*

table 178–11 missing reference for SCMR_CH

SuggestedRemedy

Add 179.11.8 as the reference

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.8.1** *P* **373** *L* **16** # 347

Swenson, Norman Nokia, Point2

Comment Type **ER** *Comment Status* **D** *(bucket) (E)*

The first sentence starts with "The test points are illustrated…" This implies that these are the only test points. But additional test points are later defined for compliance testing. This can be confusing.

SuggestedRemedy

Change "The test points are illustrated…" to "Reference test points are illustrated…" Add a sentence after the first sentence that says "Additional test points for compliance measurement are defined in Section 178.9."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license.

Cl **178** *SC* **178.8.1** *P* **373** *L* **33** # 379

Ran, Adee Cisco Systems

Comment Type **E** *Comment Status* **D** *(bucket) (E)*

"ILT" is a very general term. The block diagram in Figure 178-2 shows the ILT function, part of the PMD functional specification. It would better be labeled "ILT function", to match the other PMD blocks (receive and transmit).
Also in 179.8.1, Figure 179-2.

SuggestedRemedy

Change "ILT" to "ILT function", twice, in Figure 178-2 and Figure 179-2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.8.9** *P* **374** *L* **35** # 333

Mascitto, Marco — Nokia

Comment Type **E** *Comment Status* **D** *(bucket) (E)*

The statement is incomplete (cut-n-paste error).

SuggestedRemedy

Replace, "When the variable mr_training_enable is true, the ILT function is used to request changes to the peer transmitter state (modulation, training pattern, and precoder state), control the PMD transmitter output on each lane based on requests from the peer interface."

with

"When the variable mr_training_enable is true, the ILT function is used to request changes to the peer transmitter state (modulation, training pattern, and precoder state), control the PMD transmitter output on each lane based on requests from the peer, indicate the receiver state, and coordinate the transition of the PMD transmit function to DATA mode."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #502.

Cl **178** *SC* **178.8.9** *P* **374** *L* **37** # 502

Opsasnick, Eugene — Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) ILT (E)*

The statement "When mr_training_enable is false and
tx_mode = local_pattern (see 178B.7.3.1), the PMD transmits PRBS31 encoded by Inner FEC (see
177.6.1.1)." is wrong since these -KR interfaces do not use an inner FEC. Subclause 178.8.9 describes the same functionality for a backplane connection as 179.8.9 does correctly for copper cable interfaces. Many of the 178.8.x subclauses currently refer to the definition of the same function in 179.8.x, This can also be done for 178.8.9

SuggestedRemedy

Replace all text in 178.8.9 with:
"The PMD inter-sublayer link training function specification is identical to that of 179.8.9."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.9.2** *P* **375** *L* **15** # 381

Ran, Adee — Cisco Systems

Comment Type **T** *Comment Status* **D** *est equipment impedance (E)*

Slide 12 of https://www.ieee802.org/3/dj/public/25_07/ran_3dj_01c_2507.pdf (used for resolution of several comments against D2.0) says "Specify that transmitter time-domain measurements are made with a 50 Ω single-ended load".
This is not stated explicitly in Clause 178, nor in Annex 178C. It is especially important now that the reference impedance is changed.
The text about transmitter measurement should be unified.

SuggestedRemedy

In 178.9.2, change the second paragraph to
"Unless specified otherwise, transmitter signal measurements are made for each lane separately using a fourth-order Bessel-Thomson low-pass response with a 3 dB bandwidth of 60 GHz, with AC-coupled connection from TP0v to 50 Ω single-ended loads in the test equipment."

In 176C.6.3, replace the existing two paragraphs with the three paragraph in 178.9.2, including the change above.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license.

Cl **178** *SC* **178.9.2** *P* **376** *L* **11** # 278

Kutscher, Noam — Marvell

Comment Type **T** *Comment Status* **D** *(bucket) TX jitter (E)*

A difference of 0.002 is not a resolution that the Scope can provide.

SuggestedRemedy

Change the Tx package Class A value to be ‘0.12’ instead of ‘0.118’.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Jitter specifications to 3 significant digits is consistent with previous clauses (e.g. 162, 163) and with the other electrical clauses in this draft.
No evidence has been presented that scopes cannot provide this resolution.

Cl **178** *SC* **178.9.2.6** *P* **378** *L* **47** # 252

Mellitz, Richard — Samtec

Comment Type **TR** *Comment Status* **D** *(bucket) SCMR (E)*

Comment 48 in
https://www.ieee802.org/3/dj/comments/D2p0/8023dj_D2p0_comments_final_clause.pdf
Not implemented.

SuggestedRemedy

Either change equation 178-1
To
SCMR= 10*log10(P_signal / VCM_FB^2)
Or
SCMR= 20*log10(sqrt(P_signal) / VCM_FB)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change equation (178-1) to SCMR= 10*log10(P_signal / VCM_FB^2).

Cl **178** *SC* **178.9.2.6** *P* **378** *L* **47** # 311

Levin, Itamar — Altera corp.

Comment Type **T** *Comment Status* **D** *(bucket) SCMR) (E)*

When changing from vpeak to Psignal in this formula going from D2.0 to D2.1, we now have a ratio of power to voltage within the log function, insetead of a "unit-less" ratio. Note that in eq 179-8 Psignal is a sum of squares of pulse shapes which is proportional to power indeed (like in its use in eq. 179-9). And yet we have 20log … If the formula originated from 10log(P/V^2) than that is still incorrect since this expression corrosponds to 20log(P^0.5/V)

SuggestedRemedy

If the intent here is to use Psignal, than in this formula we should take the root of this quantity in order to fix the ratio, or conversely - use 10log(Psignal/Vcm^2) in order for the quantity within the log function be unit-less.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #252.

[Editor's note: changed page/line from 415/14]

Cl **178** *SC* **178.9.2.6** *P* **378** *L* **52** # 312

Levin, Itamar — Altera corp.

Comment Type **E** *Comment Status* **D** *(bucket) (E)*

The accurate clause is not 179.9.4.5 but subclause 179.9.4.5.1

SuggestedRemedy

change 179.9.4.5 to 179.9.4.5.1

Proposed Response *Response Status* **W**

PROPOSED REJECT.
179.9.4.5.1 was the subclause in D2.0 but its content was merged into 179.9.4.5.
[Editor's note: changed page/line from 415/19]

Cl **178** *SC* **178.9.2.7** *P* **379** *L* **20** # 344

Simms, William — NVIDIA

Comment Type **E** *Comment Status* **D** *(bucket) (E)*

RLcd is defined but RLdc is used for equation and plot

SuggestedRemedy

Change RLcd to RLdc in the definition

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "where RLcd is the differential-mode to common-mode" to "where RLdc is the common-mode to differential-mode"
Implement in 178.9.2.7 and in 176C.6.3.7, with editorial license.

Cl **178** *SC* **178.9.3.3** *P* **380** *L* **44** # 382

Ran, Adee — Cisco Systems

Comment Type **T** *Comment Status* **D** *t) RX amplitude tolerance (E)*

In D2.1 the receiver amplitude tolerance text has been expanded in clause 179, and now the text in clause 178 and Annex 176C does not match it.
The requirement is essentially the same so the text should be similar (with perhaps different references).

SuggestedRemedy

Change the text in 178.9.3.3 and in 176C.6.4.2 to match the text in 179.9.5.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.9.3.3** *P* **380** *L* **48** # 332

Mascitto, Marco — Nokia

Comment Type **T** *Comment Status* **D** *(bucket) ITOL (E)*

The receiver's control of the transmitter's equalizer coefficients is an important function that helps that receiver to meet the block error ratio. Recommend making this normative.

SuggestedRemedy

Change "The receiver may control" to "The receiver should control".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Receiver control of the transmit equalizer coefficients is an implementation choice, and some implementations may not need it to meet the test requrements. It is therefore optional to use the transmitter control in this test.
Note that the ILT function is a normative requirement regardless of this test.

Cl **178** *SC* **178.9.3.4.2** *P* **381** *L* **32** # 345

Simms, William — NVIDIA

Comment Type **E** *Comment Status* **D** *(bucket) (E)*

Difficult to tell when exceptions begin and end

SuggestedRemedy

Add an additional indent for the exceptions

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The remainder of the subclause consists of exceptions to the calculation of COM.
Change "the exceptions described below" to "the exceptions in this subclause".

Cl **178** *SC* **178.9.3.4.2** *P* **381** *L* **52** # 383

Ran, Adee — Cisco Systems

Comment Type **E** *Comment Status* **D** *(bucket) ITOL (E)*

in "J4u03" the "u" should not be in subscript.

SuggestedRemedy

Change to normal text.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.10.** *P* **384** *L* **28** # 387

Ran, Adee — Cisco Systems

Comment Type **E** *Comment Status* **D** *(bucket) (E)*

"the channel is bound by TP0 and TP5"
"bound" does not seem natural here.
Also in 176C.7.

SuggestedRemedy

Change to "The channel is defined between TP0 and TP5" or alternatively "The channel is delimited by TP0 and TP5".
Apply a similar change in 176C.7.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change to "The channel is defined between TP0 and TP5".
Also, apply to 176C.7.

Cl **178** *SC* **178.10.** *P* **384** *L* **36** # 388

Ran, Adee — Cisco Systems

Comment Type **E** *Comment Status* **D** *(bucket) (E)*

"Tp0d to Tp5d" - P should be uppercase

SuggestedRemedy

Change to "TP0d to TP5d"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.10.** *P* **384** *L* **45** # 389

Ran, Adee — Cisco Systems

Comment Type **TR** *Comment Status* **D** *(bucket) (E)*

In Table 178–11, maximum AC coupling frequency of 100 kHz does not match the value in referenced subclause, which was changed to 250 kHz.
In Table 176C-6, the value is 50 kHz, not matching the reference either.

SuggestedRemedy

Change to 250 kHz in Table 178–11 and in Table 176C–6.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178** *SC* **178.10.** *P* **384** *L* **47** # 390

Ran, Adee
Cisco Systems

Comment Type **E** *Comment Status* **D** *(bucket) (E)*

Missing reference for SCMR_CH.

SuggestedRemedy

Add a reference to 179.11.8 (or another place if the location of the definition changes).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #251.

Cl **178** *SC* **178.10.1** *P* **386** *L* **6** # 391

Ran, Adee
Cisco Systems

Comment Type **TR** *Comment Status* **D** *et) Reference Impedance (E)*

In Table 178-12, R0 should be 46.25 Ohm (Slide 12 of https://www.ieee802.org/3/dj/public/25_07/ran_3dj_01c_2507.pdf).
Also in Table 176C–7.

SuggestedRemedy

Change per comment (2 places).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178A** *SC* **178A.1.9.3** *P* **830** *L* **37** # 1

Shakiba, Hossein
Huawei Technologies Canada

Comment Type **TR** *Comment Status* **D** *(bucket) (E)*

Based on this paragraph, calculation of the noise PDF starts with a Dirac delta function and moves on to include the non-Gaussian crosstalk and dual-Dirac jitter noises in the following two paragraphs. Then, the third following paragraph adds the remaining Gaussian noise terms. However, this process of calculating noise PDF misses the ISI noise.

SuggestedRemedy

Add a description to include the ISI noise PDF and its calculation using reference to the procedure defined in 93A.1.7.3. This can be done by either adding another convolution step or starting with ISI noise PDF instead of a Dirac delta function.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The draft is correct as written.
The preceding paragraph states that "DELTA is defined in 178A.1.7.6 with the exception that the Gaussian approximation of the probability density function of the noise amplitude pga(y) is replaced with the probability density function of the noise amplitude pn(y) defined below." The definition of DELTA in 178A.1.7.6 is based on the convolution of the probability distribution function of the noiseless signal amplitude prior to quantization ps(n) and the Gaussian approximation of the probability density function of the noise amplitude prior to quantization pga(y). Substitution of pn(y) for pga(y) means that pn(y) will be convolved with ps(y) to generate the probability distribution function for signal and noise amplitude prior to quantiation psn(y) that is used to determine the quantization step DELTA. Since ps(y) is defined in 178A.1.7.6 to include the signal and inter-symbol interference, all of the appropriate terms are being included.

Cl **178B** *SC* **178B.1** *P* **835** *L* **12** # 196

Bruckman, Leon
Nvidia

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

This is an annex not a clause

SuggestedRemedy

Change: "This clause defines" to: "This annex defines"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.1** *P* **835** *L* **12** # 217

D'Ambrosia, John — Futurewei, U.S. Subsidiary of Huawei

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

Opening states - "This clause…"
this is an annex

SuggestedRemedy

Replace "clause" with "annex"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.2** *P* **835** *L* **22** # 414

Ran, Adee — Cisco Systems

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

"Through this communication, ILT creates a well-defined path start-up process for paths that include one or more ISLs"
The path start-up protocol in 178B.6 should be referenced.

SuggestedRemedy

Add "(see 176B.6)" in this sentence and reword if necessary with editorial license.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **178B** *SC* **178B.2** *P* **835** *L* **23** # 415

Ran, Adee — Cisco Systems

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

"Initially all ISLs are in TRAINING mode"
It is the AUIs or AUI components that are in TRAINING mode.

SuggestedRemedy

Reword as necessary with editorial license.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #320.

Cl **178B** *SC* **178B.2** *P* **835** *L* **23** # 464

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (CI)*

When you use local pattern you don't enter "TRAINING mode".

SuggestedRemedy

Change "TRAINING mode," to "a tx mode (see 178B.5)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #320.

Cl **178B** *SC* **178B.2** *P* **835** *L* **23** # 320

Mascitto, Marco — Nokia

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

In TRAINING mode, locally generated training frames are sent to the peer interface, not data.

SuggestedRemedy

Replace:
Initially all ISLs are in TRAINING mode, in which the data sent to the peer is generated locally by each interface.

With:
Initially all ISLs are in TRAINING mode, in which the training frames sent to the peer are generated locally by each interface.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change: "Initially all ISLs are in TRAINING mode, in which the data sent to the peer is generated locally by each interface."
To: "Initially all AUI components and PMDs that have ILT enabled are in TRAINING mode (tx_mode = training, see 178B.7.3.1), in which the training frames sent to the peer are generated locally by each interface."
In the following paragraph change: "ILT includes a training protocol, used in TRAINING mode,"
To: "ILT defines a training protocol, used in TRAINING mode (tx_mode = training, see 178B.7.3.1),"
Implement with editorial license.

Cl **178B** *SC* **178B.2** *P* **835** *L* **25** # 479

Slavick, Jeff Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (CI)*

The coordinated transition is the start-up protocol portion of ILT, give a reference from here to it.

SuggestedRemedy

Add "(see 178B.6)" after DATA mode

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change: "The ILT function provides coordinated transition of all ISLs to DATA mode,"
To: "The ILT function provides coordinated transition of all ISLs to DATA mode (tx_mode = data, see 178B.7.3.1),"
Implement with editorial license.

Cl **178B** *SC* **178B.2** *P* **835** *L* **27** # 465

Slavick, Jeff Broadcom

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

ILT defines the training protocol not really includes.

SuggestedRemedy

Change "includes" to "defines"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #320.

Cl **178B** *SC* **178B.2** *P* **835** *L* **30** # 321

Mascitto, Marco Nokia

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

The last sentence of this paragraph is not clear and may lead to confusion.

SuggestedRemedy

Replace:
ILT can also establish communication between interfaces that do not use a training protocol.

With:
ILT ensures that any ISLs in the path that do not make use of the training protocol (e.g., ISLs using 100Gb/s lane technology) signal their readiness for DATA mode so that the end-to-end path start-up process can complete successfully.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change: "ILT can also establish communication between interfaces that do not use a training protocol."
To: "ILT allows ISLs in the path that do not make use of the training protocol to signal their readiness for DATA mode (tx_mode = data, see 178B.7.3.1) so that the end-to-end path start-up process can complete successfully."
Implement with editorial license.

Cl **178B** *SC* **178B.2** *P* **835** *L* **36** # 322

Mascitto, Marco Nokia

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

"[…] with or without a training protocol" can be more precise to eliminate confusion.

SuggestedRemedy

Replace:
The state diagrams in Figure 178B–9
and Figure 178B–10, and their associated variables defined in 178B.6, apply for all interfaces that include an ILT function, with or without a training protocol.

With:
The state diagrams in Figure 178B–9
and Figure 178B–10, and their associated variables defined in 178B.6, apply for all interfaces that include an ILT function, whether they make use of a training protocol or not.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license.

Cl **178B** *SC* **178B.3** *P* **835** *L* **49** # 235

Mi, Guangcan — Huawei Technologies Co., Ltd

Comment Type **ER** *Comment Status* **D** *(bucket) (CI)*

definition of Interface, should be specified, not quantified

SuggestedRemedy

chagne "quantified" to "specified".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license..

Cl **178B** *SC* **178B.3** *P* **836** *L* **14** # 10

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

The span labelled "Physical Layer implementation" is intended to convey simply that this portion of the diagram is representative of the entire Physical Layer not an implementation; otherwise PHY and xMII Extender should be labelled as implementations as well.

SuggestedRemedy

Change "Physical Layer implementation" to "Physical Layer".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.3** *P* **856** *L* **12** # 51

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

Add cross-reference to state diagram figure.

SuggestedRemedy

After "state diagram" insert "(see Figure 178B-12)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.4** *P* **836** *L* **40** # 247

He, Xiang — Huawei

Comment Type **ER** *Comment Status* **D** *(bucket) (CI)*

The sentence "A physically instantiated interface is
either a PMD or an AUI component." is repeated too many times in this Annex.

SuggestedRemedy

Consider to define this once in front (in fact it has been defined in 178B.3 which is the perfect place), and remove all other repeatitions in the following text.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This wording is used only in this pararaph and it adds clarity to the text.

Cl **178B** *SC* **178B.4** *P* **836** *L* **47** # 325

Mascitto, Marco — Nokia

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

Improve clarity.

SuggestedRemedy

Replace:
The ILT function in AUI components and PMDs is composed of one per-interface function and one per-lane function for each lane associated with the interface as shown in Figure 178B–2.

With:
The ILT function at an interface is composed as shown in Figure 178B-2, with:
- one per-interface function
- one per-lane function for each lane associated with the interface

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #12.

Cl **178B** *SC* **178B.4** *P* **836** *L* **48** # 12

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

It sounds like you have both a per-interface function and one per-lane function on each lane. Clarify text.

SuggestedRemedy

Change "is composed of one per-interface function and one per-lane function for each lane associated with the interface"
Change "is composed of one per-interface function for the entire interface and one per-lane function for each lane associated with the interface"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **178B** *SC* **178B.4** *P* **837** *L* **19** # 13

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

In Figure 178B-2, it would be helpful to point out that the DLi and SLi are attaching to the medium or AUI channel.

SuggestedRemedy

Add a label to the right "Medium or AUI Channel"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **178B** *SC* **178B.5** *P* **837** *L* **43** # 326

Mascitto, Marco — Nokia

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

"If training is available" makes it seem like training is optional for ISLs that require training.

SuggestedRemedy

Replace:
If training is available on the interface the behavior is as follows:

With:
For those interfaces that require training, the behavior is as follows:

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **178B** *SC* **178B.5** *P* **837** *L* **47** # 14

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

local_rts, remote_rts, and remote_rx_ready are defined as Boolean variable thus should be given values true and false, not 0 and 1.

SuggestedRemedy

Change "1" to "true" on ...
page 837 line 47
page 838 lines 7, 13, 16, 18
Change "0" to "false" on …
page 838 line 16
Apply similarly elsewhere as necessary.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **178B** *SC* **178B.5** *P* **837** *L* **47** # 327

Mascitto, Marco — Nokia

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

The "rts" in variables local_rts and remote_rts is misleading and caused confusion. When asserted, it means the interface is ready to send (RTS) and receive (CTS) data, not just send data.

SuggestedRemedy

Propose changing local_rts to local_ifready and remote_rts to remote_ifready.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The term RTS is well defined. Implementing the proposed change may create confusion with the rx_ready indication.

Cl **178B** *SC* **178B.5** *P* **849** *L* **28** # 24

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

Paragraph begins with an incomplete sentence/thought. The same is conveyed more clearly in the first sentence of 178B.5.7 "Equalization control is only available for the E1 format."

SuggestedRemedy

Change "Only applies for E1 format" to "The initial condition request only applies for the E1 format."
Make similar updates in 178B.5.3.4, 178B.5.3.5, 178B.5.4.5, 178B.5.4.7, 178B.5.4.8.
Align text in 178B.5.7.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **178B** *SC* **178B.5.1.1** *P* **838** *L* **26** # 16

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

Training frames are always based on a local clock regardless of the other interface state.

SuggestedRemedy

Delete "In this case".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.5.1.1** *P* **838** *L* **28** # 17

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

It would be good to be clear about where the recovered clock is coming from.

SuggestedRemedy

Change "recovered clock" to "recovered clock from the receiver on the other interface" or similar.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **178B** *SC* **178B.5.1.1** *P* **838** *L* **32** # 18

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

Misused comma.

SuggestedRemedy

Delete comma between "PCS clock and such".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.5.1.1** *P* **838** *L* **32** # 469

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (CI)*

The transmit clock functional mode may not be based upon the PCS clock. It may based on DTE XS or PHY XS or not ever change.

SuggestedRemedy

Change:
As shown in the RTS control state diagram (Figure 178B–9) local_rts is set to true only after the transmit clock is derived from the PCS clock, such that the transition between clock sources occurs while sending local_rts = false.
To:
As shown in the RTS control state diagram (Figure 178B–9) local_rts is set to true only after the transmit clock is derived from its mission mode source (local_rts is false when a transition between clock sources occurs).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change: "local_rts is set to true only after the transmit clock is derived from the PCS clock"
To: "local_rts is set to true only after the transmit clock is derived from the clock recovered by the other interface receiver"

Cl **178B** *SC* **178B.5.1.1** *P* **839** *L* **13** # 468

Slavick, Jeff Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (CI)*

The dotted lines for the clocks going to the PLLs optional? Required? Implementation choice?

SuggestedRemedy

Add the following NOTE to Figure 178B-3
"The dotted lines represent clocking connections that are needed within a retimer for ILT operations."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
In Figure 178B-3 change dotted lines to lines.

Cl **178B** *SC* **178B.5.1.1** *P* **839** *L* **18** # 467

Slavick, Jeff Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (CI)*

We should not be defining a limit of the clock accuracy in this Clause.

SuggestedRemedy

Remove the 50ppm from Figure 178B-3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.5.1.2** *P* **839** *L* **38** # 470

Slavick, Jeff Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (CI)*

Which same process? The Retimer process?

SuggestedRemedy

Remove 178B.5.1.2 there is no need to call out anything special here.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Remove the colon after "process" to make clear to whcih process the text refers.

Cl **178B** *SC* **178B.5.2** *P* **839** *L* **46** # 19

Brown, Matt Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

The phrase "whose values (0, 1,,2, 3) correspond to the possible values of the tx_symbol and rx_symbol variables of the sublayer service interface" seems to be rather unecessary and insignificant information. It is not even clear why this sentence is necessary here.

SuggestedRemedy

Change sentence to "The training frame is a sequence of PAM4 symbols with values 0, 1, 2, 3." or delete the sentence.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change: "The training frame is a sequence of PAM4 symbols whose values (0, 1, 2, 3) correspond to the possible values of the tx_symbol and rx_symbol variables of the sublayer service interface."
To: "The training frame is a sequence of PAM4 symbols."
Implement with editorial license.

Cl **178B** *SC* **178B.5.2.2** *P* **841** *L* **1** # 20

Brown, Matt Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

The sentence "Each interface using ILT shall identify
which format is relevant for it." does not make sense. How is an interface to identify a preferred format. Perhaps that clause or annex that specifies the interface should identify the format, given that is the case.

SuggestedRemedy

Change sentence to "The training frame format is specified by the clause specifying the AUI component or PMD."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license.

Cl **178B** *SC* **178B.5.2.2** *P* **841** *L* **1** # 472

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (CI)*

Only interfaces that use training mode need to specify which training format they use.

SuggestedRemedy

Change:
Each interface using ILT shall identify which format is relevant for it.
To:
Each interface using ILT that supports TRAINING mode shall specify which format it uses.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #20.

Cl **178B** *SC* **178B.5.2.3** *P* **841** *L* **14** # 473

Slavick, Jeff — Broadcom

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

The "(see Figure 178B-5)" is not needed at the end of the 3rd paragraph

SuggestedRemedy

Remove "(see Figure 178B-5)" from the end of the 3rd paragraph

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.5.2.3** *P* **841** *L* **17** # 21

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

The setting to one value or another is mandatory, not just permitted.

SuggestedRemedy

Change "precoding may be enabled or disabled" to "precoding is either enabled or disabled".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.5.2.3** *P* **841** *L* **28** # 22

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

In Figure 178B-5, what does the box "x3" do?

SuggestedRemedy

Provide description of the "x3" block.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This function is described in 178B.5.2.4 second paragraph.

Cl **178B** *SC* **178B.5.3** *P* **845** *L* **26** # 23

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

The Figure title should like be a level 4 Annex sublclause heading, 178B.5.3.1.

SuggestedRemedy

Change heading paragraph appropriately.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **178B** *SC* **178B.5.3** *P* **845** *L* **26** # 236

Mi, Guangcan — Huawei Technologies Co., Ltd

Comment Type **ER** *Comment Status* **D** *(bucket) (CI)*

the caption of the figure,"Figure 178B–7—Initial condition request", is misplaced or the figure is missing.

SuggestedRemedy

Delete the caption, or add the figure.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #23.

Cl **178B** *SC* **178B.5.3** *P* **845** *L* **28** # 474

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (CI)*

Lost the heading for "Initidal condition request".

SuggestedRemedy

Restore the heading for "Initial condition request". It's been converted to a Figure title.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #23.

Cl **178B** *SC* **178B.5.3.5** *P* **846** *L* **4** # 25

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

This paragraph defines how a coefficient not just give permission to do so.

SuggestedRemedy

Change "may be changed" to "is changed".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **178B** *SC* **178B.5.4** *P* **846** *L* **53** # 26

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

In Table 178B-4 footnote a three values are described as being undefined. Why are they not just listed along with the others and mark as either "undefined" or "reserved" as is done for other fields.

SuggestedRemedy

For coefficient select echo add values "010, 011, and 100 and indicate they are "= reserved" or "= undefined".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
For coefficient select echo add values "010, 011, and 100 and indicate they are "= undefined". Remove footnote "a".

Cl **178B** *SC* **178B.5.4.2** *P* **847** *L* **38** # 30

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

The sentence is rather ambiguous; not clear if the variable reflect the state of the status bits or vice versa. Since local_tp_mode is set by the state machine it seems the status bits are set based on local_tp_mode.

SuggestedRemedy

Change "The training pattern status bits encode the value of local_tp_mode." to "The training status bits are encoded to convey the value of local_tp_mode."
Update 178B.5.4.3 similarly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **178B** *SC* **178B.5.4.2** *P* **847** *L* **39** # 27

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

The variable local_tp_mode is used in state diagram in Figure 178B-10 so should be defined in 178B.7.3.1

SuggestedRemedy

Move definition to 178B.7.3.1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #475.

Cl **178B** *SC* **178B.5.4.2** *P* **847** *L* **40** # 475

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (CI)*

local_tp_mode was moved from the State variables definition even though it's used in Figure 178B-8. But others that are also encoded in the status frame did not have their variable definitions move the status frame bit descriptions (like cf_sts or coef_sel).

SuggestedRemedy

Move the definitions of local_tp_mode and local_mc_mode back to 178B.7.3.1 and add "(see 178B.7.3.1)" to the end of the sentence in 178B.5.4.2 and 178B.5.4.3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **178B** *SC* **178B.5.4.2** *P* **847** *L* **42** # 31

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

It is required not just permitted to set the variable to one of the listed values.

SuggestedRemedy

Change "may be assigned" to "is assigned".
Update 178B.5.4.3 similarly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **178B** *SC* **178B.5.4.2** *P* **847** *L* **43** # 29

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

This variable is set by state diagram which take precedence. It would be helpful to state explicit that the action is handled by the state diagram as is done for training_failure.

SuggestedRemedy

For the definitions for local_tp_mode, local_mc_mode, tx_disable, tx_mode, lane_training_status, training, and training_failure add the following sentence "The value of <variable name>
is set by the state diagram in Figure 178B–10."
For the definitions for tf_offset, local_tf_lock, new_marker, and slip_done add the following sentence "The value of <variable name>
is set by the state diagram in Figure 178B–11."
For the definitions for coef_sts, ic_req, ic_sts, and k add the following sentence "The value of <variable name> is set by the state diagram in Figure 178B–12."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy for: local_tp_mode, local_mc_mode, lane_training_status and training.
The definitions of tx_disable, tx_mode and training_failure already include the proposed reference to the state diagram.
Implement suggested remedy for: tf_offset, local_tf_lock and new_marker.
The definition of slip_done already includes the proposed reference to the state diagram.
Implement suggested remedy for: ic_req, ic_sts, and k
The definition of coef_sts already includes the proposed reference to the state diagram.
Implement with editorial license.

Cl **178B** *SC* **178B.5.4.3** *P* **847** *L* **39** # 28

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

The variable local_mc_mode is used in state diagram in Figure 178B-10 so should be defined in 178B.7.3.1

SuggestedRemedy

Move definition to 178B.7.3.1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #475.

Cl **178B** *SC* **178B.5.4.4** *P* **848** *L* **4** # 33

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

The first sentence describes the bit as a status bit to be read while the second sentence describes it as a status bit to be a set to one value or another. The second sentence is correct.

SuggestedRemedy

Change "When the receiver frame lock bit is set to 1, the receiver is indicating that it has identified"
To "The receiver frame lock bit is set to 1 when the receiver has identified"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #32.

Cl **178B** *SC* **178B.5.4.4** *P* **848** *L* **4** # 32

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

Typically, lock is defined by identifying the mark position not the infinite set of equally spaced positions. Is there some special meaning to this?

SuggestedRemedy

Change "positions" to "position".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change: "When the receiver frame lock bit is set to 1, the receiver is indicating that it has identified training frame marker positions"
To: "The receiver frame lock bit is set to 1 when the receiver has identified the training frame marker position"
Implement with editorial license.

Cl **178B** *SC* **178B.5.4.7** *P* **848** *L* **25** # 476

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (CI)*

Add a reference to coef_sel in the coef_select_echo description.

SuggestedRemedy

Add this sentence to end of 178B.5.4.7 "The coefficient select echo bits reflect the value of the k variable generated by the coefficient update state diagram (Figure 178B–12)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **178B** *SC* **178B.5.5** *P* **848** *L* **37** # 34

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

Training frame lock is not achiebed by "looking" but rather by "detecting".

SuggestedRemedy

Change "by looking for the frame marker or the inverted frame marker in" to "by detecting either the frame marker or the inverted frame marker in".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.5.7.1** *P* **849** *L* **28** # 477

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (CI)*

There are two possible coef status values for a ic_req.

SuggestedRemedy

Add the following to the end of step b)
or "coefficient not supported"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Coefficient is not being selected at this stage, so it can not be unsupported.

Cl **178B** *SC* **178B.5.7.4** *P* **851** *L* **19** # 35

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

The defining for variable ck_stp could be improved. The decription implies that the variable is something that can be set or queried. But rather the variable is representative of the step size used by the implementation but is nevertheless within the specified bounds.

SuggestedRemedy

Change the definition to "Variable that represents the magnitude of the change in c(k) for one step up or one step down from its current value. The value is implementation dependent but within the range specified by the clause or annex that defines the PMD or AUI component.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **178B** *SC* **178B.5.7.4** *P* **851** *L* **22** # 36

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

The set of indices are not defined by the AUI component or PMD but rather by the clause or annex that specifies them.

SuggestedRemedy

Change "defined by" to "specified for".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **178B** *SC* **178B.5.9** *P* **851** *L* **44** # 37

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

Although the changes are permitted to occur during this time span they are to not occur outside of this time span.

SuggestedRemedy

Change "training pattern may occur at" to "training pattern occurs at" or "training pattern shall occur at".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change: "training pattern may occur at any"
To: "training pattern occurs at any"
Implement with editorial license.

Cl **178B** *SC* **178B.6** *P* **852** *L* **27** # 38

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

The word "can" is deprecated in the sense of giving permission. It is not clear if this is giving permission or stating the possibility of occurrence.

SuggestedRemedy

Assuming the intent is to give permission, change the sentence to "The path may include ISLs that do not use a training protocol."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change: "The path can include ISLs that do not use a training protocol."
To: "The path may include ISLs that do not use a training protocol."
Also change: "that can include AUI components and PMDs"" in the previous sentence to: "that may include AUI components and PMDs"
Implement with editorial license.

Cl **178B** *SC* **178B.6** *P* **852** *L* **34** # 328

Mascitto, Marco — Nokia

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

This statement conflicts with the variable definition in 178B.7.2.1. local_rts asserted means that the training of the local interface has completed successfully. The training of the remote interface is still undetermined, so we are not yet in the ISL_READY state.

SuggestedRemedy

Delete:
(it reached the ISL_Ready state in Figure 178B-10)

Proposed Response *Response Status* **W**

PROPOSED REJECT.
local_rts is set only if isl_ready is set, and that indicates that both sides have completed training.

Cl **178B** *SC* **178B.6** *P* **852** *L* **37** # 39

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

What is meant by "a remote AUI component or PMD"? Is this the peer interface as defined for this annex?

SuggestedRemedy

Change "a remote AUI component or PMD" to "the peer interface".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **178B** *SC* **178B.6** *P* **852** *L* **41** # 248

He, Xiang — Huawei

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

The sentence does not read right with the first "both" because it says "an AUI component *or* PMD" before it.

SuggestedRemedy

Remove the first "both" in the sentence.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.6** *P* **852** *L* **51** # 40

Brown, Matt — Alphawave Semi

Comment Type **TR** *Comment Status* **D** *(bucket) (CI)*

Behaviors defined in the second bullet are loosely defined as being included in the ILT umbrella, not outside. Each of the descriptions should have a qualifier as to when they apply, not delegate that to an informational note; language from 178B.5.1 can be leveraged. These bullets are not methods but rather they are means. Finally, the second bullet is insufficiently defined; should it not also include the sending of local pattern?

SuggestedRemedy

Change the opening sentence and two dashed bullets to the following:
Ready to send (RTS) propagates over ISLs using one of the following means:
-- If training is enabled, the continue training bit in the control field of the training frames (see 178B.5.3.1)
-- If training is disabled or not supported, the transmit disable function to send and signal detect function to detect

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested change with editorial license.

Cl **178B** *SC* **178B.7.2.1** *P* **853** *L* **40** # 118

Wienckowski, Natalie — IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

This Boolean variable is never set to true or false. It just says it is set by the RTS state diagram

SuggestedRemedy

Add a description of when it is set to true and when it is set to false. There isn't enough information in the spec to provide a suggestion.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Text indicates that local_rts is set by the state diagram that clearly indicate when this variable is true and when it is false.

Cl **178B** *SC* **178B.7.2.1** *P* **853** *L* **53** # 42

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

Use of word may with means "is permitted to". Desribing a possible occurrence here not giving permission to "not work".

SuggestedRemedy

Change "may" to "might".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.7.2.1** *P* **854** *L* **12** # 44

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

The variable is required, not just permitted, to be set to one these values.

SuggestedRemedy

Change "This variable may be assigned one of the following values:"
To "This variable may is assigned one of the following values:"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change: "This variable may be assigned one of the following values"
To: "This variable is assigned one of the following values"

Cl **178B** *SC* **178B.7.2.1** *P* **854** *L* **23** # 482

Slavick, Jeff — Broadcom

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

We've often used "DATA mode" to indicate state rather than tx_mode = data, which is only used as an assignement in the state machine.

SuggestedRemedy

Change "tx_mode = data" to "DATA mode" in the definition of uses_recovered_clock

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change: "to drive its output when tx_mode = data."
To: "to drive its output in DATA mode (tx_mode = data, see 178B.7.3.1)."
Implement with editorial license.

Cl **178B** *SC* **178B.7.2.1** *P* **854** *L* **23** # 46

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

It would be helpful to direct the reader to some background on the use of recovered clock.

SuggestedRemedy

Change "a clock recovered by another interface"
To "a clock recovered by another interface (see 178B.5.1.1)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested change with editorial license.

Cl **178B** *SC* **178B.7.2.4** *P* **855** *L* **18** # 47

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

The inclusion of adjacent_remote_rts in the transition is redundant or uncecessary since if it is false then the state would transition to the "START" state.

SuggestedRemedy

In the transition from "WAIT_ADJACENT" to "SWITCH_CLOCK" delete "* adjacent_remote_rts"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.7.3** *P* **855** *L* **50** # 483

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (CI)*

When we enter PATH_READY the state of local_mc_mode should apply to the given interface that it's set on, not any other interface. As we sometimes use adjacent to mean "the other PMA" versus the PMA that is providing the data for this interface.

SuggestedRemedy

Remove the word adjacent from the 2nd and 3rd paragraphs in four places.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #60.

Cl **178B** *SC* **178B.7.3** *P* **855** *L* **51** # 60

Brown, Matt — Alphawave Semi

Comment Type **TR** *Comment Status* **D** *(bucket) (CI)*

For PMD types defined in Clause 182 and Clause 183, the adjacent sublayer that provides or reverses precoding is the Inner FEC defined in Clause 177 rather than a PMA as defined in Clause 176.

SuggestedRemedy

Change "the AUI component or PMD shall cause the adjacent PMA to transmit all subsequent data on the corresponding lane with precoding (see 176.7.1.2) and otherwise cause the adjacent PMA to transmit all subsequent data on the corresponding lane without precoding."
To: "the AUI component or PMD shall cause the adjacent PMA or Inner FEC to transmit all subsequent data on the corresponding lane with precoding (see 176.7.1.2) and otherwise cause the adjacent PMA or Inner FEC to transmit all subsequent data on the corresponding lane without precoding."
Change: "the AUI component or PMD shall inform the adjacent PMA that all subsequently received data on the corresponding lane includes precoding (see 176.7.1.2) and otherwise inform the adjacent PMA that all subsequently received data on the corresponding lane does not include precoding."
To: "the AUI component or PMD shall inform the adjacent PMA or Inner FEC that all subsequently received data on the corresponding lane includes precoding (see 176.7.1.2) and otherwise inform the adjacent PMA or Inner FEC that all subsequently received data on the corresponding lane does not include precoding."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change: "the AUI component or PMD shall cause the adjacent PMA to transmit all subsequent data on the corresponding lane with precoding (see 176.7.1.2) and otherwise cause the adjacent PMA to transmit all subsequent data on the corresponding lane without precoding."
To: "the AUI component or PMD shall cause the PMA or Inner FEC to transmit all subsequent data on the corresponding lane with precoding (see 176.7.1.2) and otherwise cause the PMA or Inner FEC to transmit all subsequent data on the corresponding lane without precoding."
Change: "the AUI component or PMD shall inform the adjacent PMA that all subsequently received data on the corresponding lane includes precoding (see 176.7.1.2) and otherwise inform the adjacent PMA that all subsequently received data on the corresponding lane does not include precoding."
To: "the AUI component or PMD shall inform the PMA or Inner FEC that all subsequently received data on the corresponding lane includes precoding (see 176.7.1.2) and otherwise inform the PMA or Inner FEC that all subsequently received data on the corresponding lane does not include precoding."

Cl **178B** *SC* **178B.7.3** *P* **856** *L* **5** # 50

Brown, Matt — Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

The definition of remote_mc_mode is not introduced. It is also only used here and could be replaced with a reference to the received status.

SuggestedRemedy

Add the following to the end of the paragraph: "The variable remote_mc_mode is defined as follows:"
Also, consider deleting this variable and instead of pointing to the state of the received status "Modulation and precoding status" field.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change: "is entered with remote_mc_mode set to “PAM4 with precoding”"
To: "is entered with the modulation and coding status of the status field of the received training frames set to “PAM4 with precoding”"
Delete the remote_mc_mode variable and its definition. Remove the remote_mc_mode row from Table 178B-7.
Implement with editorial license.

Cl **178B** *SC* **178B.7.3** *P* **856** *L* **8** # 48

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

Use of word may with means "is permitted to". In this case, assignment to one of these is mandatory.

SuggestedRemedy

Change "may be" to "is".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested change with editorial license.

Cl **178B** *SC* **178B.7.3** *P* **856** *L* **11** # 484

Slavick, Jeff — Broadcom

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

The last paragraph of 178B.7.3 is describing which state machines are used which is related to the first paragraph of this section. The paragaphs between the first and last describe some specific cases related to precoding operations. So it'd be better if the first and last were next to each other.

SuggestedRemedy

Move the last paragraph that begins with "Interfaces using the E1 format" to be the second paragraph of this sub-clause.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This paragraph moved to this location according to the resolution of comment #499 against D2.0

Cl **178B** *SC* **178B.7.3** *P* **856** *L* **19** # 49

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

Use of word may with means "is permitted to". In this case, assignment to one of these is mandatory.

SuggestedRemedy

Change "may be" to "is assigned".
Update the definitions for coef_sts, ic_req, ic_sel, ic_sts, lane_training_status, remote_tp_mode, similarly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license..

Cl **178B** *SC* **178B.7.3.1** *P* **857** *L* **10** # 120

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

This Boolean variable is never set to false.
The description includes "Otherwise it is set to true.", but never says when it it set to false.

SuggestedRemedy

Add a description of when it is set to false. There isn't enough information in the spec to provide a suggestion.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The definition of local_tf_lock includes the condition to set it true and to set it false.
The last sentence of the local_tf_lock variable definition is not relevant here, and is a repetition of text in 178B.5.4.4. Delete the last sentence of the local_tf_lock variable definition.

Cl **178B** *SC* **178B.7.3.1** *P* **857** *L* **35** # 121

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

This Boolean variable is never set to true or false. It just says it is derived from the “receiver frame lock” bit of the status field of received training frame

SuggestedRemedy

Add a description of when it is set to true and when it is set to false. There isn't enough information in the spec to provide a suggestion.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The definition of remote_tf_lock includes the condition to set it true and to set it false.

Cl **178B** *SC* **178B.7.3.1** *P* **857** *L* **38** # 52

Brown, Matt Alphawave Semi

Comment Type **E** *Comment Status* **D** *(bucket) (CI)*

The variable remote_tp_mode is never used by or set by any state diagram and is never referenced elsewhere.

SuggestedRemedy

Delete the entry for remote_tp_mode.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.7.3.1** *P* **858** *L* **3** # 123

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Text indicates that tx_disable is set by the state diagram that clearly indicate when this variable is true and when it is false.

Cl **178B** *SC* **178B.7.3.1** *P* **858** *L* **12** # 488

Slavick, Jeff Broadcom

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

Training frames could use a reference

SuggestedRemedy

Add "(see 178B.5.2)" to the end of the definition of the training enumeration.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license..

Cl **178B** *SC* **178B.7.3.1** *P* **858** *L* **15** # 487

Slavick, Jeff Broadcom

Comment Type **TR** *Comment Status* **D** *(bucket) (CI)*

In Data mode we're transmitting the data from the other sub-layer, not really the AUI component or PMD those have digitized the data, but it's then processed by a PMA/PCS/XS/Inner FEC before being transmitted again.

SuggestedRemedy

Change the definintion of data to be "transmit data from the PMA"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license..

Cl **178B** *SC* **178B.7.3.5** *P* **860** *L* **45** # 53

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

In Figure 178B-10 operator symbol "#" is used but likely it was intended to be no-equal-to symbol.

SuggestedRemedy

Change "#" to not-equal-to symbol.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.7.3.5** *P* **860** *L* **45** # 249

He, Xiang — Huawei

Comment Type **ER** *Comment Status* **D** *(bucket) (CI)*

the "not equals" sign should be "≠" instead of "#".

SuggestedRemedy

Change "#" to "≠"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
According to Table 21–1—State diagram operators, not equal sign is ≠. Replace # with ≠.

Cl **178B** *SC* **178B.7.3.5** *P* **860** *L* **52** # 231

Mi, Guangcan — Huawei Technologies Co., Ltd

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

there is a variable isl_ready and a state ISL_READY. The variable isl_ready is used in the RTS state diagram. But not appearing in the control state diagram. By definition

SuggestedRemedy

change the local_rx_ready and remote_rx_ready after the ISL_READY state to isl_ready

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **178B** *SC* **178B.8** *P* **863** *L* **16** # 197

Bruckman, Leon — Nvidia

Comment Type **T** *Comment Status* **D** *(bucket) (CI)*

Wrong reference for mr_restart, mr_training_enable and training_status

SuggestedRemedy

In Table 178B-6 change the references of mr_restart, mr_training_enable and training_status to point to clause 45 and not clause 42.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **179** *SC* **179.1** *P* **397** *L* **15** # 370

Kocsis, Sam — Amphenol

Comment Type **E** *Comment Status* **D** *(bucket) Wording (E)*

The sentence "Annex 179B specifies test fixtures" implies that the normative annex contains normative requirements for the test fixtures. However, the normative requirements are for the mated test fixtures only, not independent requirements.

SuggestedRemedy

Update the sentence to say "Annex 179B specifes the normative requirements for mated test fixtures."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
179B.1 states that the test fixture are specified, and the parameters measured in mated state create implied specifications for each fixture.
Change "Annex 179B specifies test fixtures" to "Annex 179B includes specifications and reference insertion loss for test fixtures".

Cl **179** *SC* **179.8.1** *P* **404** *L* **23** # 309

Healey, Adam — Broadcom, Inc.

Comment Type **E** *Comment Status* **D** *(bucket) Test points (E)*

In Table 179.8.1 the term "die bump" is used in the definition of TP0d and Tp5d but it is not defined in IEEE Std 802.3 (or in the IEEE P802.3dj draft). Since TP0d and TP5d are also defined in Clause 178 and Annex 176C, use of similar language seems appropriate. Refer to Figure 178-2 for an example.

SuggestedRemedy

Replace "die bump" with "device-to-package interface" in the definitions of TP0d and TP5d.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **179** *SC* **179.8.1** *P* **404** *L* **39** # 350

Swenson, Norman — Nokia, Point2

Comment Type **ER** *Comment Status* **D** *(bucket) (E)*

Notes 3 and 4 define how testing is to be done by pointing to an annex that is informative, not normative. This needs to be in a normative annex or clause.

SuggestedRemedy

Describe the test fixtures and compliance test points in a normative clause or annex.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Contrary to the comment, Annex 179B is normative. No change required.

Cl **179** *SC* **179.8.1** *P* **405** *L* **21** # 394

Ran, Adee — Cisco Systems

Comment Type **E** *Comment Status* **D** *(bucket) (E)*

In Figure 179-2, the demarcation lines of PMD, Cable assembly, and PMD should be at the bottom of the diagram (below the newly-introduced "ILT" blocks).

SuggestedRemedy

Change the diagram per the comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **179** *SC* **179.8.9** *P* **407** *L* **9** # 503

Opsasnick, Eugene — Broadcom

Comment Type **ER** *Comment Status* **D** *(bucket) (E)*

The first sentence of 179.8.9 states "A PMD shall provide …", but this subclause is specifing the behavior of a specific PMD, not all PMDs.

SuggestedRemedy

Change "A PMD shall provide … " to "The PMD shall provide …"
This matches the style of the other 179..8.x function definitions.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **179** *SC* **179.9.4** *P* **408** *L* **8** # 395

Ran, Adee — Cisco Systems

Comment Type **E** *Comment Status* **D** *(bucket) (E)*

Article mismatch in "to a 50 Ω single-ended loads".

SuggestedRemedy

Delete "a".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **179** *SC* **179.9.4.1.5** *P* **413** *L* **1** # 206

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *cket) Standards language (E)*

A note (preceded with "NOTE--") is an informative statement. The word "may" is normative interpreted as "is permitted to" per the style guide. If this is intended to describe the possibility given the normative specifications, then we can change "may" to "can" (interpreted as "is able to"). If we want to give permission, then it should not be an informative note. The style manual helps us with the latter suggest that the sentence be prefixed with "Note that".

SuggestedRemedy

Two solutions are suggested:
#1 Change "may" to "can". (preferred)
#2 Change "Note--Any" to "Note that any"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "may" to "can".

Cl **179** *SC* **179.9.4.6** *P* **414** *L* **40** # 207

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *cket) Standards language (E)*

The second sentence of the informative note is making a recommendation, which is normative, not informative, as it could mean the test is not properly done otherwise. The style manual helps us out suggesting that instead we use "Note that" if it is normative.

SuggestedRemedy

Change "NOTE--Outputs" to "Note that outputs".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The recommendation in the second sentence ("Other circuitry in lanes not under test should be kept active during the measurement") can affect the measurement result and is not just explanatory.

Move the second sentence from the NOTE to the paragraph above it, with editorial license.

Cl **179** *SC* **179.9.5.2** *P* **419** *L* **11** # 208

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **R** *cket) Standards language (E)*

Two concerns with this note. First, the statements are extra information relating to the normative requirements and is worded somewhat normatively; so this should not be an informative note. Secondly, the first sentence is ambiguous as it is the measurement of steady-state voltage as specified in 179.9.4.1.2 that is defined with the transmitter set to preset 1.

SuggestedRemedy

Change "NOTE—Steady-state voltage is defined with preset 1. It is not initially generated by a transmitter, due to the initialize setting in Table 179–8."
To "Note that the measurement of steady-state voltage as defined in 179.9.4.1.2 with transmit equalizer set to preset 1 (no equalization), which is not initially generated by a transmitter per initialize setting in Table 179–8 ."

Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **179** *SC* **179.9.5.4.2** *P* **423** *L* **23** # 308

Healey, Adam — Broadcom, Inc.

Comment Type **TR** *Comment Status* **D** *(bucket) ITOL/JTOL (E)*

The note below Table 179-13 states the following. "The ADD (Equation (179-14)) and sigmaRJ (Equation (179-15)) calculated from transmitter measurements in this test may be higher than the values in Table 179-19. A suitable channel should be chosen in order to meet the COM requirement with these values." This suggests that a receiver is permitted to be tested with a transmitter that is far outside the limits imposed on compliant transmitters. It also relies on the Channel Operating Margin (COM) calculation being able to correctly evaluate the penalty caused by transmitters with high jitter. The COM calcuation uses a first-order approximation of the noise due to transmitter jitter and the accuracy of this approximation can be expected to degrade for higher levels of jitter. Therefore, it seems likely trade-offs between channel loss/noise and jitter may not a evaluated accurately. The test transmitter, including the added sinusoidal jitter, should be required to meet the JRMS and Jnu03 specifications or the degree to which the test transmitter is allowed to exceed the specifications should be limited.

SuggestedRemedy

Remove the note. The requrements of 179.9.5.3.3 (referred to by 179.9.5.4.2) item c) are then expected to apply.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The measured parameters of the pattern generator, J4u_03 and J_RMS, need to be within the limits in Table 179-7.

Add a statement in 179.9.5.4.1 that the pattern generator with SJ insjection complies with EOJ03, J4u03, and JRMS in Table 179-7.
Apply similar changes in the JTOL subclauses in Clause 178, Annex 176C, and Annex 176D.
Implement with editorial license.

Cl **179** *SC* **179.11.8** *P* **433** *L* **40** # 396

Ran, Adee — Cisco Systems

Comment Type **E** *Comment Status* **D** *cket) Document structure (E)*

The new SCMR_CH specification is relevant for all electrical channels, not just to cable assemblies. Its location under 179.11 is not ideal, and it is possible that other electrical channel specifications will also include this parameters.
Annex 178A, titled "Specification methods for 200 Gb/s per lane electrical channels", is a more appropriate place.

SuggestedRemedy

Move the content of 179.11.8 to a new subclause 178A.2.
Update the existing reference in Table 179–14 accordingly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **179B** *SC* **179B.3.1** *P* **874** *L* **15** # 443

Dudek, Mike — Marvell

Comment Type **TR** *Comment Status* **D** *ket) Test fixture reference (E)*

Equation 179B-2 leads to -34.26dB at 53GHz. An obvious problem as the value per figure 179A-1 should be 5.95dB

SuggestedRemedy

Change the 0.841f to 0.0841f

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The comment identifies an editorial error in translating the equation for D2P1. There are technical implications wiht the error, but the suggested remedy provides the right corrective action.
Implement the suggested remedy.

Cl **179B** *SC* **179B.3.1** *P* **874** *L* **19** # 442

Dudek, Mike — Marvell

Comment Type **T** *Comment Status* **D** *(bucket) Test points (E)*

The cable assembly test fixture includes the connector, vias, etc.

SuggestedRemedy

Delete "PCB" from "test fixture PCB reference"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The comment identifies an inconsistency in the nomenclature.
However, the text fixture should be referenced correctly.

Change "test fixture PCB reference" to "cable assembly test fixture reference".
Update the details of the structures included in the cable assembly test fixture in the text of 179B.3.1.
Implement with editorial license.

Cl **179B** *SC* **179B.4.2** *P* **875** *L* **33** # 366

Kocsis, Sam — Amphenol

Comment Type **E** *Comment Status* **D** *ket) Test fixture reference (E)*

Equation 179B-5, as plotted in Figure 179B-2 provides a reference insertion loss for the mated test fixture, without any context.

SuggestedRemedy

Add text, or a note that specifies that Equation 179B-5 is the sum of Equations 179B-1 and 179B-2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add the following NOTE after the parameter list that follows equation 179B-5:
NOTE---ILDD_MTFref is equal to the sum of ILdd_tref in Equation (179B-1) and ILdd_catref in Equation (179B-2).

Cl **180** *SC* **180.1** *P* **443** *L* **38** # 433

Nicholl, Gary — Cisco Systems

Comment Type **TR** *Comment Status* **D** *(bucket) AUI (O)*

In Table180-1, footnote c also applies to 200GAUI-2 C2C and 200GAUI-2 C2M. When implemented in a 200GBASE-DR1 PHY the signalling rate of these AUIs must also be constrained as defined in 120.1.4 (i.e. to 50ppm).

Same comment for Table 180-2..

SuggestedRemedy

Update Table 180-1 and Table 180-2 , to add footnote c to 200GAUI-2 C2C and 200GAUI-2 C2M (Table 180-1) and 400GAUI-4 C2C and 400GAUI-4 C2M (Tabe 180-2).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **180** *SC* **180.3** *P* **447** *L* **45** # 398

Ran, Adee — Cisco Systems

Comment Type **E** *Comment Status* **D** *(bucket) (O)*

The title "Physical Medium Dependent (PMD) service interface" is unnecessarily wordy. The acronym "PMD" has already been expanded in 180.1, and is not more familiar to readers.
Also in other optical PMD clauses.

SuggestedRemedy

Change the title to "PMD service interface".
Apply also in clauses 181-183, 185, 187.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The "Physical Medium Dependent (PMD) service interface" is the title of a subclause. It provides clear information about the subject, avoiding confusion. It is a different case when PMD is mentioned in the mainbody text. Similar examples spreads through out the base standard, such as 179 where PMD is spelled out, 179.5 where AN is spelled out, and 179.15 PICS/PMD all spelled out.

Cl **180** *SC* **180.6** *P* **452** *L* **43** # 436

Nicholl, Gary — Cisco Systems

Comment Type **T** *Comment Status* **D** *(bucket) MDI (O)*

This is more of a question for clarification. I wanted to clarify that this subclause is only assigning optical lanes at the MDI. It is not attempting to place any restriction on the mapping between eleectrical lanes (on the AUI-n) and optical lanes at the MDI ?

The whole point of the MLD based PCS is to allow both host and module implementors flexibility in the routing and mapping of both electrical and optical lanes.

SuggestedRemedy

Clarify that we are not placing any restrictions on the mapping between electrical lanes from the AUI-n to optical lanes on the MDI.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
There could be a gearbox between the AUI and the optical PMD, therefore, it is not necessarily a one-to-one relation. However, the suggested remedy does not provide sufficient detail to implement.

Cl **180** *SC* **180.7.1** *P* **454** *L* **26** # 124

Landry, Gary — Texas Instruments

Comment Type **E** *Comment Status* **D** *(bucket) (O)*

The text was changed from referencing "Table 180-8" to "180-9." This sentence refers to the Tx specs and should have remained "Table 180-8"

SuggestedRemedy

Change reference back to Table 180-8

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The D2.1 clean version correctly has the cross reference as Table 180-8

Cl **180** *SC* **180.8.3** *P* **459** *L* **48** # 142

Ghiasi, Ali — Ghiasi Qunatum/Marvell

Comment Type **TR** *Comment Status* **D** *(bucket) (O)*

Missing IEC reference for single row 12-fiber and single-row 16 fiber

SuggestedRemedy

Add folloiwng IEC references
- IEC 61754-7-1:2014 for single row MPO 12-fiber
- IEC 61754-7-2:2017 for two rows MPO 12-fiber
- IEC 61754-7-3:2019 single rows MPO 16-fiber

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Annex 180A was created to contain the details about the MDIs which includes references to appropriate IEC standards for the MDIs.
In 180.8.3, it reads "Annex 180A specifies the details of the MDIs for 200GBASE-DR1, 400GBASE-DR2, 800GBASE-DR4,
and 1.6TBASE-DR8."
Single row 12-fiber is written in 180A.3.1. single row 16-fiber is written in 180A.3.2, single row .
The current specification of xGBASE-DRn series of PMDs do not support the two row 12-fiber interface.

Cl **180** *SC* **180.9.4** *P* **461** *L* **33** # 316

Rodes, Roberto — Coherent

Comment Type **E** *Comment Status* **D** *(bucket) TDECQ method (O)*

The definitions of OMA, overshoot, transmitter power excursion, extinction ratio, and transition time are misleading. These tests are measured using waveforms at the output of the reference receiver defined in 180.9.5. This wording could give the impression that the same waveform used in 180.9.5 is applied to the test, which is not the case.

SuggestedRemedy

Move the definition of the reference receiver from the TDECQ to the TECQ subclause, and specify TDECQ by referencing TECQ with the addition of the fiber, instead of the other way around as it is currently written in the document.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Implement the suggested remedy with editorial license.

Cl **180** *SC* **180.9.7** *P* **464** *L* **31** # 233

Mi, Guangcan — Huawei Technologies Co., Ltd

Comment Type **E** *Comment Status* **D** *(bucket) (O)*

p=1, where p should be italian

SuggestedRemedy

make p italian

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the format of p into italics.

Cl **180** *SC* **180.9.7** *P* **464** *L* **31** # 449

Dudek, Mike — Marvell

Comment Type **T** *Comment Status* **D** *(bucket) (O)*

Confusion between codeword and test block. The test is performed with PRBS31Q so codeword is not appropriate.

SuggestedRemedy

Change "single codeword" to "single test block".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **180** *SC* **180.9.13** *P* **467** *L* **29** # 319

Johnson, John — Broadcom

Comment Type **E** *Comment Status* **D** *(bucket) (O)*

The Note about the use of linear extrapolation, while syntactically correct, is challenging to parse.

SuggestedRemedy

Change From: "NOTE - To reduce test time, a means to provide statistical projection of the measured histograms (see 174A.8.3), if the statistical projection is modeled accurately by a linear fit extrapolation, follows."

To: "NOTE - If the statistical projection is modeled accurately by a linear fit extrapolation, a means to provide statistical projection of the measured histograms (see 174A.8.3) in order to reduce test time follows."

The same remedy can be applied to the Notes in clauses 180.9.14, 181.9.13, 181.9.14, 182.9.13, 182.9.14, 183.9.13 and 183.9.14, with editorial license.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

[Editor's note: changed page/line from 496/35]

Cl **180A** *SC* **180A.4.1** *P* **903** *L* **14** # 421

Ran, Adee — Cisco Systems

Comment Type **T** *Comment Status* **D** *MDI breakout (bucket) (O)*

"Such interfaces support a single 4-lane optical PMD <..>, or alternatively four single lane optical PMDs <…>, or <…>"
The word "support" is overloaded; it might be interpreted as if all implementations (e.g. optical modules) are required to "support" all these combinations - and it's not necessarily the case.

Also in the last paragraph (lines 42-44 on this page), which is phrased differently, for no apparent reason.

SuggestedRemedy

Change "support" to "enable using a connector as".
Change the wording of the last paragraph to match and use the wording above.
Implement with editorial license.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The suggested changes are not incorrect but the current wording is correct and appropriate as written.

Cl **180A** *SC* **180A.4.2** *P* **905** *L* **34** # 218

D'Ambrosia, John — Futurewei, U.S. Subsidiary of Huawei

Comment Type **ER** *Comment Status* **D** *(bucket) (O)*

There are two instances of 1.6TBASE-DR8 in the note.

SuggestedRemedy

The second instance of 1.6TBASE-DR8 should be replaced with "1.6TBASE-DR8-2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **181** *SC* **181.7.1** *P* **484** *L* **21** # 125

Landry, Gary — Texas Instruments

Comment Type **E** *Comment Status* **D** *(bucket) (O)*

The variable OMAouter (min) is now shown as "max(TECQ, TDECQ)." While strictly correct, it would be better to explictly show the offset for parallelism to other clauses

SuggestedRemedy

Change "max(TECQ, TDECQ)" to
"0 + max(TECQ, TDECQ)"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
While the intention of the comment is understandable, it is unnecessary to add 0 when the value has an explicit expression, i.e., max(TECQ, TDECQ).

Cl **182** *SC* **182.1** *P* **505** *L* **39** # 434

Nicholl, Gary — Cisco Systems

Comment Type **TR** *Comment Status* **D** *(bucket) AUI (O)*

In Table 182-1, footnote c also applies to 200GAUI-2 C2C and 200GAUI-2 C2M. When implemented in a 200GBASE-DR1-2 PHY the signalling rate of these AUIs must also be constrained as defined in 120.1.4 (i.e. to 50ppm).

Same comment for Table 182-2.

SuggestedRemedy

Update Table 182-1 and Table 182-2 , to add footnote c to 200GAUI-2 C2C and 200GAUI-2 C2M (Table 182-1) and 400GAUI-4 C2C and 400GAUI-4 C2M (Tabe 182-2).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #433.

Cl **182** *SC* **182.8.3** *P* **521** *L* **51** # 143

Ghiasi, Ali — Ghiasi Qunatum/Marvell

Comment Type **TR** *Comment Status* **D** *(bucket) (O)*

Missing IEC reference for single row 12-fiber, two row 12-fiber, and single-row 16 fiber

SuggestedRemedy

Add folloiwng IEC references
- IEC 61754-7-1:2014 for single row MPO 12-fiber
- IEC 61754-7-2:2017 for two rows MPO 12-fiber
- IEC 61754-7-3:2019 single rows MPO 16-fiber

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Resolve using the response to comment #142.
[Editor's note: changed clause/subclause from 180/180.8.3]

Cl **183** *SC* **183.7.3** *P* **548** *L* **47** # 318

Johnson, John — Broadcom

Comment Type **T** *Comment Status* **D** *(bucket) (O)*

Footnote (b) of Table 183-8 has an error. Per Table 183-11, the maximum channel insertion loss for 800GBASE-FR4 can be reduced by up to 0.3dB.

SuggestedRemedy

Change Table 183-8 footnote (b)
From: "This channel insertion loss may be reduced by up to 0.5 dB …"

To: "This channel insertion loss may be reduced by up to 0.3 dB …"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **184** *SC* **184.1.1** *P* **568** *L* **11** # 505

Opsasnick, Eugene Broadcom

Comment Type **ER** *Comment Status* **D** *(bucket) (L)*

Redundant language should be simplified.

SuggestedRemedy

Change:
"When necessary for disambiguation, to differentiate the Inner FEC defined in this clause from the 800GBASE-R Inner FEC defined in Clause 177, the term 800GBASE-LR1 Inner FEC is used."
To:
"When necessary to differentiate the Inner FEC defined in this clause from the 800GBASE-R Inner FEC defined in Clause 177, the term 800GBASE-LR1 Inner FEC is used."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **184** *SC* **184.1.2** *P* **568** *L* **31** # 403

Ran, Adee Cisco Systems

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

Figure 184–1 shows the Inner FEC sublayer directly below the PCS. However, Figure 184–2 indicates that the sublayer above can also be a PMA (two specific types).
While theoretically the PCS can be connected directly, as in Figure 184–1, it is likely not the implementation most people have in mind.

SuggestedRemedy

In Figure 184–1 add a box for the PMA, with a footnote that it is optional and limited to the 800GBASE-R 8:32 PMA or 800GBASE-R 4:32 PMA (to match Figure 184–2).

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The only time a PMA is above the Inner FEC is when an AUI C2M is present. That will probably be the case for most implementations of 800GBASE-LR1. But it's the same case for all implementations of IMDD PHYs, and we have historically not included AUIs in these introductory figures. This figure is consistent with similar PHY types defined in the base standard.

Cl **184** *SC* **184.4.7** *P* **575** *L* **45** # 239

He, Xiang Huawei

Comment Type **ER** *Comment Status* **D** *(bucket) (L)*

The terminology "DP-QAM16" is not used in the standard. Instead, "DP-16QAM" is used.

SuggestedRemedy

Change "DP-QAM16" to "DP-16QAM"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **184** *SC* **184.7.2.2** *P* **584** *L* **33** # 91

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the definition of dsp_lock<x>
From:
"A Boolean variable that is set to true when the receiver has detected the location of the PS for a given polarization symbol stream on the 800GBASE-LR1 PMD service interface, where x = 0:1."
To:
"A Boolean variable that indicates the receiver has detected the location of the PS for a given polarization symbol stream on the 800GBASE-LR1 PMD service interface, where x = 0 or 1. Its value is set by the DSP lock state diagram (see Figure 184–9)."
Implement with editorial license.

Cl **184** *SC* **184.7.2.2** *P* **584** *L* **42** # 92

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Update the definition of reset to keep it consistent with comments #74 - reset is a special case.
Modify the defintion of the reset variable by adding: ", and is false otherwise." to end of the last sentence.
Implement with editorial license.

Cl **184** *SC* **184.7.2.2** *P* **584** *L* **47** # 93

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the definition of the variable restart_lock
From:
"A Boolean variable that is set by the DSP frame lock process to reset the synchronization process on each polarization symbol stream. It is set to true when M PS symbols in a row fail to match (M_BAD state) on a given polarization symbol stream."
To:
"A Boolean variable that is used to restart the synchronization process for both polarization symbol streams when M PS symbols in a row fail to match within either polarization symbol stream. Its value is set by the DSP lock state diagram (see Figure 184-9).
Implement with editorial license.

Cl **184** *SC* **184.7.2.2** *P* **584** *L* **54** # 94

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to true or false. There is just a description of the use.

SuggestedRemedy

Change: Boolean variable that indicates that sym_counter has reached its terminal count.
To: Boolean variable that is set to true when sym_counter has reached its terminal count. Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the definition of the variable sym_counter_done
From:
"A Boolean variable that indicates that sym_counter has reached its terminal count."
To:
"A Boolean variable that is set to true when the counter sym_counter has reached its terminal count. It is set to false when the counter is started (see figure 184-9).
Implement with editorial license.

Cl **184** *SC* **184.7.2.2** *P* **585** *L* **3** # 95

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the definition of the variable sym_slip_done
From:
"A Boolean variable that is set to true when the SYM_SLIP requested by the DSP frame lock state diagram has been completed indicating that the next candidate PS position is available for testing."
To:
"A Boolean variable that indicates the next candidate PS position is available for testing. Is it set to true when the SYM_SLIP function completes and is set to false upon entering the GET_SYMBOL state of the DSP lock state diagram (see Figure 184-9)."

Implement with editorial license.

Cl **184** *SC* **184.7.2.2** *P* **585** *L* **7** # 96

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the definition of sym_valid
From:
"A Boolean variable that is set to true if the received symbol is a valid PS symbol according to the state of the pilot sequences generator (see 184.4.9) for the value of the current_ps_id variable."
To:
"A Boolean variable that is set to true if the received symbol is a valid PS symbol according to the state of the pilot sequences generator (see 184.4.9) for the value of the current_ps_id variable. Otherwise, this variable is set to false."

Implement with editorial license.

Cl **185** *SC* **185.12.4.1** *P* **614** *L* **32** # 288

Huber, Thomas Nokia

Comment Type **ER** *Comment Status* **D** *(bucket) (O)*

Item F1 refers to an 800GBASE-LR1 PCS and PMA, but there are no such sublayers. Since LR1 requires an inner FEC it should be included in the PICS.

SuggestedRemedy

Change the feature column of item F1 to say "Compatible with 800GBASE-R PCS and PMA and 800GBASE-LR1 Inner FEC"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **185A** *SC* **185A.2.4.1** *P* **914** *L* **50** # 129

Zimmerman, George ADI,APLgp,Cisco,Marvell,OnSemi,Sony

Comment Type **TR** *Comment Status* **D** *(bucket) ENOB (O)*

while the final ENOB number is the average of "the individual points" - what are the points being averaged - are they "effective bits", are they "SNR" in dB (both log scales, so this is a geometric mean), or are they a linear average of signal power and noise power from which effective bits is then computed (more accurate). The text doesn't say. I have an old version of IEEE Std 1241 (2011), but I believe you want to average the NAD term, according to equation 67 there (COherent sampling test method for SINAD in the frequency domain).

SuggestedRemedy

Change "The final ENOB number is then the average of the individual points." to "The final ENOB number is computed from the linearly averaging the noise and distortion terms and then computing ENOB of that average according to IEEE Std 1241-2023."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
In 185A.2.4.1 replace "The final ENOB number is then the average of the individual points." with "The final ENOB number is computed from linearly averaging the noise and distortion terms and then computing ENOB of that average according to IEEE Std 1241-2023."

Cl **185A** *SC* **185A.2.5** *P* **916** *L* **2** # 296

Huber, Thomas Nokia

Comment Type **ER** *Comment Status* **D** *(bucket) (O)*

The text here was not updated to reflect the change in modeling of 800GBASE-ER1 as a FEC sublayer rather than a standalone PCS.

SuggestedRemedy

Change "… the input to the PCS for 800GBASE-ER1 and 800GBASE-ER1-20." to "… the input to the ER1 FEC for 800GBASE-ER1 and 800GBASE-ER1-20."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **185A** *SC* **185A.2.5.3** *P* **917** *L* **35** # 130

Zimmerman, George ADI,APLgp,Cisco,Marvell,OnSemi,Sony

Comment Type **T** *Comment Status* **D** *(bucket) shall statements (O)*

I think this is the key requirement for ETCC - the stepwise calculation. Unfortunately, you can't actually specify the steps - that's a requirement on the user - but you can specify the steps or their equivalent.

SuggestedRemedy

Replace "ETCC is calculated using the following steps." with "ETCC shall be calculated using the following steps, or methods which produce the same result."

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The normative statement is in clauses 185 and 187 that use the annex. In both clauses the parameter definition is "The ETCC shall be within the limit given in Table 185–5 if measured using the methods specified in 185.9" where 185.9 points to the annex and provides the specific parameter values to use the annex.
To meet ETCC requirement the value must be measured per the steps in the annex, adding "or methods which produce the same result" removes this requirement.

Cl **186** *SC* **186.1.2** *P* **617** *L* **31** # 408

Ran, Adee Cisco Systems

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

Figure 186–1 shows the FEC sublayer directly below the PCS. However, Figure 186–2 and Figure 186–3 indicate that the sublayer above can also be a PMA (two specific types). While theoretically the PCS can be connected directly, as in Figure 186–1, it is likely not the implementation most people have in mind.

SuggestedRemedy

Figure 186–1 add a box for the PMA, with a footnote that it is optional and limited to the 800GBASE-R 8:32 PMA or 800GBASE-R 4:32 PMA (to match Figure 186–2).

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The only time a PMA is above the Inner FEC is when an AUI C2M is present. That will probably be the case for most implementations of 800GBASE-ER1 and 800GBASE-ER1-20. But it's the same case for all implementations of IMDD PHYs, and we have historically not included AUIs in these introductory figures. This figure is consistent with similar PHY types defined in the base standard.

Cl **186** *SC* **186.2.1** *P* **619** *L* **30** # 289

Huber, Thomas Nokia

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

The location of the test pattern insertion points should be shown in the overview figure

SuggestedRemedy

Add an arrow indicating PRBS31 insertion occurs above the GMP mapping function.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Modify figure 186-3 as proposed.

Cl **186** *SC* **186.2.1** *P* **620** *L* **8** # 192

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket) (L)*

The indicated rate is nominal. See page 620 line 53.

SuggestedRemedy

Change: "a rate of 26.5625 Gb/s." To: "a nominal rate of 26.5625 Gb/s."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.2.2** *P* **621** *L* **6** # 193

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket) (L)*

According to Figure 186-3, FEC:IS_SIGNAL.indication is also influences by PMA:IS_SIGNAL.indication from the PMA.

SuggestedRemedy

Change: "The SIGNAL_OK parameter is set to OK when fec_all_mfas_locked (see 186.4.2.1) is true and is set to FAIL when fec_all_mfas_locked is false."
To: "The SIGNAL_OK parameter is set to OK when fec_all_mfas_locked (see 186.4.2.1) is true and the PMA:IS_SIGNAL.indication(SIGNAL_OK) is set to OK, and is set to FAIL otherwise."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.2.3.5.9** *P* **626** *L* **52** # 290

Huber, Thomas Nokia

Comment Type **TR** *Comment Status* **D** *(bucket) (L)*

The sum of C(sub)nD is encoded in bits D1-D5 rather than D1-D7.

SuggestedRemedy

Change "…is encoded in bits D1-D7 of JC4 and JC5…" to "…is encoded in bits D1-D5 of JC4 and JC5…

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **186** *SC* **186.2.3.5.10** *P* **627** *L* **7** # 497

Slavick, Jeff Broadcom

Comment Type **E** *Comment Status* **D** *(bucket) (L)*

First sentence is very long.

SuggestedRemedy

From:
The three bytes of the AML field are used to encode information about the location of 800GBASE-R PCS alignment markers that were removed by the Inverse RS-FEC transmit function (see 186.2.3.1) within the stream of 257-bit blocks that are mapped into the 800GBASE-ER1 tributary multi-frame payload area, such that the 800GBASE-R PCS alignment markers can be re-inserted in the same location by the 800GBASE-ER1 FEC sublayer receive function.

To:
The three bytes of the AML field encodes the location within the stream of 257-bit blocks that the 800GBASE-R PCS alignment markers were removed by the Inverse RS-FEC transmit function (see 186.2.3.1). The AML field is mapped into the 800GBASE-ER1 tributary multi-frame payload area so that the 800GBASE-R PCS alignment markers can be re-inserted in the same location by the 800GBASE-ER1 FEC sublayer receive function.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The first sentence is indeed too long and complex, but the suggested remedy is not accurately capturing the meaning.

Replace the first paragraph of 186.2.3.5.10 with this text:
"The three bytes of the AML field (row 3, octets 2 and 3, and row 4, octet 3) in each mult-frame form a single 24-bit field, as shown in FIgure 186-6. This field is used to encode information about the location of 800GBASE-R PCS alignment markers that were removed by the Inverse RS-FEC transmit function (see 186.2.3.1). The field encodes the position of the first non-stuff block that is mapped into the payload area relative to the location of the 800GBASE-R PCS alignment markers that were removed. This information allows the 800GBASE-R PCS alignment markers to be re-inserted in the same location by the 800GBASE-ER1 FEC sublayer receive function."

Implement with licence.

Cl **186** *SC* **186.2.3.12** *P* **631** *L* **33** # 291

Huber, Thomas Nokia

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

The text regarding where the test pattern is inserted should be more clear.

SuggestedRemedy

Change "… is generated by the 800GBASE-ER1 FEC sublayer into each of the eight 800GBASE-ER1 tributary frames…" to "… is generated by the 800GBASE-ER1 FEB sublayer into each of the eight 800GBASE-ER1 tributary frames, before the GMP mapping process (see Figure 186-3)..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change "… is generated by the 800GBASE-ER1 FEC sublayer into each of the eight 800GBASE-ER1 tributary frames…" to "… is generated by the 800GBASE-ER1 FEC sublayer into each of the eight 800GBASE-ER1 tributary frames, before the GMP mapping process (see Figure 186-3)..."

Cl **186** *SC* **186.4.2.1** *P* **648** *L* **40** # 97

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The intent is that this variable is set to false when the next state is entered (in thia case, RAML_CNT_0 or RAML_CNT_INC), but the asssignmnet to false is missing.

Change the definition of the block_rx variable
From:
"Boolean variable that is set to true when the next non-stuff 257b block is demapped by the GMP demapper function."
To:
"Boolean variable that is set to true when the next non-stuff 257b block is demapped by the GMP demapper function. It is set to false upon entering the RAML_CNT_0 or RAML_CNT_INC states in the 800GBASE-ER1 FEC sublayer alignment marker location state diagram (see Figure 186-21)."

Update figure 186-21 to assign the value false to variable block_rx in states RAML_CNT_0 and RAML_CNT_INC.

Implement with editorial license.

Cl **186** *SC* **186.4.2.1** *P* **649** *L* **11** # 98

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to true or false. There is just a description of the use.

SuggestedRemedy

Change: Boolean variable that indicates that amp_counter has reached its terminal count.
To: Boolean variable that is set to true when amp_counter has reached its terminal count. Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

In addition to not defining the true/false conditions, the text also refers to "amp_counter" rather than "fam_counter".

Change the definition of the variable fam_counter_done
From:
"A Boolean variable that indicates that amp_counter has reached its terminal count."
To:
"A Boolean variable that is set to true when the counter fam_counter has reached its terminal count. It is set to false when the counter is started (see figure 186-19).
Implement with editorial license.

Cl **186** *SC* **186.4.2.1** *P* **649** *L* **14** # 104

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to true or false. It just says it holds the output of the function FAW_COMPARE.

SuggestedRemedy

Add a description of when it is set to true and when it is set to false. There isn't enough information in the spec to provide a suggestion.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The variable faw_match holds the result of the FAW_COMPARE function. The definition of the function indicates what it returns, and there is no value in repeating that information in the definition of the variable. The specification methodology is consistent with clause 119 and 172. However, in 186.4.2.2, the FAW_COMPARE function does not specify when it is set to false.

Add to the end of the defintion of function FAW_COMPARE in 186.4.2.2: ", otherwise it is set to false."

Implement with editorial license.

Cl **186** *SC* **186.4.2.1** *P* **649** *L* **14** # 99

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to true or false. It just says it holds the output of the function FAM_COMPARE.

SuggestedRemedy

Add a description of when it is set to true and when it is set to false. There isn't enough information in the spec to provide a suggestion.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The variable fam_compare holds the result of the FAM_COMPARE function. The definition of the function indicates what it returns, and there is no value in repeating that information in the definition of the variable. The specification methodology is consistent with clause 119 and 172. However, in 186.4.2.2, the FAM_COMPARE function does not specify when it is set to false.

Add to the end of the defintion of function FAM_COMPARE in 186.4.2.2: ", otherwise it is set to false."

Implement with editorial license.

Cl **186** *SC* **186.4.2.1** *P* **649** *L* **18** # 100

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the definition of the variable fam_slip_done
From:
"A Boolean variable that is set to true when the FAM_SLIP requested by the FAM field lock state diagram has been completed and the next candidate 480-bit block position is available to be tested."
To:
"A Boolean variable that indicates the next candidate 480-bit block position is available to be tested. Is it set to true when the FAM_SLIP function completes and is set to false upon entering the GET_BLOCK state of the 800GBASE-ER1 FEC sublayer FAM field lock state diagram (see Figure 186-19)."""

Implement with editorial license.

Cl **186** *SC* **186.4.2.1** *P* **649** *L* **23** # 101

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy to update the fam_valid definition with editorial license.

Cl **186** *SC* **186.4.2.1** *P* **649** *L* **28** # 102

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change the definition of the variable fam_lock<x>
From:
"A Boolean variable that is set to true when the receiver has detected the location of the FAM field among the stream of 257-bit blocks on an 800GBASE-ER1 FEC sublayer tributary FEC flow, where x = 0 to 7."
To:
"A Boolean variable that indicates the receiver has detected the location of the FAM field among the stream of 257-bit blocks on an 800GBASE-ER1 FEC sublayer tributary FEC flow,
where x = 0 to 7. The value of fam_lock<x> is set by the 800GBASE-ER1 FEC sublayer FAM field lock state diagram (see Figure 186-19)."
Implement with editorial license.

Cl **186** *SC* **186.4.2.1** *P* **649** *L* **30** # 103

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to true or false. There is just a description of the use.

SuggestedRemedy

Change: Boolean variable that indicates that faw_counter has reached its terminal count.
To: Boolean variable that is set to true when faw_counter has reached its terminal count. Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the definition of the variable faw_counter_done
From:
"A Boolean variable that indicates that faw_counter has reached its terminal count."
To:
"A Boolean variable that is set to true when the counter faw_counter has reached its terminal count. It is set to false when the counter is started (see figure 186-17).
Implement with editorial license.

[Editor's note: changed line from 11]

Cl **186** *SC* **186.4.2.1** *P* **649** *L* **45** # 105

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy to update the faw_valid definition with editorial license.

Cl **186** *SC* **186.4.2.1** *P* **649** *L* **50** # 106

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the definition of the variable faws_lock<x>
From:
"A Boolean variable that is set to true when the receiver has detected the location of the FAW field for a given polarization symbol stream on the 800GBASE-ER1 PMD service interface, where x = 0:1."
To:
"A Boolean variable that indicates the receiver has detected the location of the FAW field for a given polarization symbol stream on the 800GBASE-ER1 PMD service interface, where x = 0 or 1. The value of faws_lock<x> is set by the 800GBASE-ER1 PMA FAW field lock state diagram (see Figure 186-17)."

Implement with editorial license.

Cl **186** *SC* **186.4.2.1** *P* **650** *L* **25** # 107

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the definition of the variable mfas_lock<x>
From:
"A Boolean variable that is set to true when the receiver has detected a valid MFAS sequence on an 800GBASE-ER1 FEC sublayer tributary FEC flow, where x = 0 to 7."
To:
"A Boolean variable that indicates the receiver has detected a valid MFAS sequence on an 800GBASE-ER1 FEC sublayer tributary FEC flow, where x = 0 to 7. The value of mfas_lock<x> is set by the 800GBASE-ER1 FEC sublayer multi-frame alignment state diagram (see FIgure 186-20)."

Implement with editorial license.

Cl **186** *SC* **186.4.2.1** *P* **650** *L* **29** # 108

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy to update the mfas_valid definition with editorial license.

Cl **186** *SC* **186.4.2.1** *P* **650** *L* **40** # 109

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the definition of the variable fec_restart_lock
From:
"A Boolean variable that is set by the FAM field lock process to reset the synchronization process. It is set to true when 5 consecutive FEC frame alignment mechanism patterns fail to match (5_BAD state) on a given 800GBASE-ER1 tributary FEC flow."
To:
"Boolean variable that is used to restart the FAM field lock process when 5 consecutive FEC frame alignment patterns fail to match on a given tributary FEC flow. The value of fec_restart_lock is set by the 800GBASE-ER1 FEC sublayer FAM field lock state diagram (see Figure 186-19)."
Implement with editorial license.

Cl **186** *SC* **186.4.2.1** *P* **650** *L* **45** # 110

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the definition of the variable fec_mfas_restart_lock
From:
"A Boolean variable that is set by the MFAS field lock process to reset the synchronization process. It is set to true when 5 consecutive MFAS values do not match the expected value (5_BAD state) on a given 800GBASE-ER1 FEC sublayer tributary FEC flow."
To:
"A Boolean variable that is used to restart the MFAS field lock process when 5 consecutive MFAS values do not match the expected value on a given FEC sublayer tributary FEC flow. The value of fec_mfas_restart_lock is set by the 800GBASE-ER1 FEC sublayer multi-frame alignment state diagram (see FIgure 186-20).

Implement with editorial license.

Cl **186** *SC* **186.4.2.1** *P* **651** *L* **26** # 111

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the definition of the variable pma_restart_lock
From:
"A Boolean variable that is set by the FAW field lock process to reset the synchronization process on 800GBASE-ER1 PMA polarization symbol streams. It is set to true when 15 consecutive frame alignment word sequences to match (15_BAD state) on a given 800GBASE-ER1 PMA polarization symbol stream."
To:
"A Boolean variable that is used to restart the FAW field lock process on both PMA polarization symbol streams when 15 consecutive frame alignment word sequences fail to match on either PMA polarization symbol stream. The value of pma_restart_lock is set by the 800GBASE-ER1 PMA FAW field lock state diagram (see Figure 186-17)."

Implement with editorial license.

Cl **186** *SC* **186.4.2.1** *P* **651** *L* **37** # 112

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the definition of the variable raml_align
From:
"Boolean variable that is set to true if the raml_counter needs to be aligned to a new value"
To:
"Boolean variable that indicates when the 800GBASE-R PCS alignment markers insertion location needs to be aligned to the received AML overhead. The value of raml_align is set by the 800GBASE-ER1 FEC sublayer alignment marker location state diagram (see Figure 186-21)."
Implement with editorial license.

Cl **186** *SC* **186.4.2.1** *P* **651** *L* **42** # 113

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to true or false. There is just a description of the use.

SuggestedRemedy

Change: Boolean variable that indicates if the received information in the AML field is valid..
To: Boolean variable that is set to true if the received information in the AML field is valid. Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The variable raml_valid is set based on the results of the RAML_CHECK function. The definition of that function indicates how the variable is set.

Cl **186** *SC* **186.4.2.1** *P* **651** *L* **47** # 114

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Update the definition of reset_fec to keep it consistent with comment #74 - reset is a special case.
Modify the definition of the reset_fec variable by adding: ", and is false otherwise." to end of the last sentence.
Implement with editorial license.

Cl **186** *SC* **186.4.2.1** *P* **651** *L* **50** # 115

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Update the definition of reset_pma to keep it consistent with comment #74 - reset is a special case.
Modify the definition of the reset_pma variable by adding: ", and is false otherwise." to end of the last sentence.
Implement with editorial license.

Cl **186** *SC* **186.4.2.1** *P* **652** *L* **11** # 116

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The rx_local_degraded variable is not used (or set) in any state diagram and therefore does not belong in the state machine variable definitions list.

Delete the variable definition of rx_local_degraded.

Implement with editorial license.

Cl **186** *SC* **186.4.2.1** *P* **652** *L* **17** # 117

Wienckowski, Natalie IVN Solutions LLC

Comment Type **T** *Comment Status* **D** *(bucket) (L)*

This Boolean variable is never set to false.

SuggestedRemedy

Add at the end of the description: Otherwise, this variable is set to false.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The rx_rm_degraded variable is not used (or set) in any state diagram and therefore does not belong in the state machine variable definitions list.

Delete the variable definition of rx_rm_degraded.

Implement with editorial license.

Cl **186** *SC* **186.7.2** *P* **662** *L* **6** # 292

Huber, Thomas Nokia

Comment Type **E** *Comment Status* **D** *(bucket) (L)*

The first 4 rows in the table are sharing registers with the clause 177 inner FEC, but they have different names than what is used in clause 177 and in clause 45

SuggestedRemedy

Change "FEC_erc1fec_..." to "FEC_..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **187** *SC* **187.6.1** *P* **677** *L* **34** # 293

Huber, Thomas Nokia

Comment Type **TR** *Comment Status* **D** *(bucket) (O)*

The ETCC row doesn't indicate min or max, which implies that the specified value of 2.5 is required. However, this is a maximum value.

SuggestedRemedy

Change the Description from "ETCC" to "ETCC (max)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **187** *SC* **187.12.4.1** *P* **689** *L* **32** # 295

Huber, Thomas Nokia

Comment Type **ER** *Comment Status* **D** *(bucket) (O)*

Item F1 in the PICS refers to the 800GBASE-ER1 PCS. With the change to a FEC sublayer, this should refer to 800GBASE-R PCS, 800GBASE-ER1 FEC, and 800GBASE-ER1 PMA

SuggestedRemedy

Change the feature column of item F1 to say "Compatible with 800GBASE-R PCS, 800GBASE-ER1 FEC, and 800GBASE-ER1 PMA.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.