Cl **116** *SC* **116.2.9** *P* **170** *L* **35** # 27

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The name of Annex 178B changed, ILT is one of the PSU functions.

SuggestedRemedy

Change the title of 116.2.9 to: Path startup functions

Change: "Inter-sublayer link training (ILT) (see Annex 178B) facilitates the orderly startup of an inter-sublayer link (ISL) and coordinates the startup of a series of ISLs along a path. ILT, ISL, and path are defined in 178B.3.
To: "The Path startup (PSU) ready to send (RTS) function and the inter-sublayer link training (ILT) function (see Annex 178B) facilitate the orderly startup of an inter-sublayer link (ISL) and coordinates the startup of a series of ISLs along a path. RTS, ILT, ISL, and path are defined in 178B.3."

Change: "ILT is used by the following PMD and AUI types"
To: "PSU is used by the following PMD and AUI types"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **116** *SC* **116.3.3.3** *P* **175** *L* **50** # 28

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The name of Annex 178B changed, ILT is one of the PSU functions.

SuggestedRemedy

Change: "and to indicate the ILT status for Physical Layer implementations that use the ILT function defined in Annex 178B"
To: "and to indicate the PSU status for Physical Layer implementations that use the PSU functions defined in Annex 178B"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **116** *SC* **116.3.3.3.1** *P* **176** *L* **12** # 29

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The name of Annex 178B changed, ILT is one of the PSU functions.

SuggestedRemedy

Change: "If ILT is not used then the SIGNAL_OK parameter takes one of two values as follows:"
To: "If PSU is not used then the SIGNAL_OK parameter takes one of two values as follows:"

In line 20 change: "If ILT is used then the SIGNAL_OK parameter takes one of four values as follows:"
To: "If PSU is used then the SIGNAL_OK parameter takes one of four values as follows:"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **116** *SC* **116.3.3.4** *P* **176** *L* **41** # 30

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The name of Annex 178B changed, ILT is one of the PSU functions.

SuggestedRemedy

Change: "to indicate the ILT status for Physical Layer implementations that use the ILT function defined in Annex 178B."
To: "to indicate the PSU status for Physical Layer implementations that use the PSU functions defined in Annex 178B.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **116** *SC* **116.3.3.4.1** *P* **176** *L* **52** # 31

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The name of Annex 178B changed, ILT is one of the PSU functions.

SuggestedRemedy

Change: "for Physical Layer implementations that use the ILT function"
To: "for Physical Layer implementations that use the PSU functions"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **169** *SC* **169.2.10** *P* **206** *L* **39** # 33

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The name of Annex 178B changed, ILT is one of the PSU functions.

SuggestedRemedy

Change the title of 169.2.10 to: Path startup functions

Change: "Inter-sublayer link training (ILT) (see Annex 178B) facilitates the orderly startup of an inter-sublayer link (ISL) and coordinates the startup of a series of ISLs along a path. ILT, ISL, and path are defined in 178B.3."
To: "The Path startup (PSU) ready to send (RTS) function and the inter-sublayer link training (ILT) function (see Annex 178B) facilitate the orderly startup of an inter-sublayer link (ISL) and coordinates the startup of a series of ISLs along a path. RTS, ILT, ISL, and path are defined in 178B.3."

In the next page line 1 change: "ILT is used by the following PMD and AUI types:"
To: "PSU is used by the following PMD and AUI types"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **174** *SC* **174.2.12** *P* **272** *L* **44** # 34

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The name of Annex 178B changed, ILT is one of the PSU functions.

SuggestedRemedy

Change the title of 174.2.12 to: Path startup functions

Change: "Inter-sublayer link training (ILT) (see Annex 178B) facilitates the orderly startup of an inter-sublayer link (ISL) and coordinates the startup of a series of ISLs along a path. ILT, ISL, and path are defined in 178B.3."
To: "The Path startup (PSU) ready to send (RTS) function and the inter-sublayer link training (ILT) function (see Annex 178B) facilitate the orderly startup of an inter-sublayer link (ISL) and coordinates the startup of a series of ISLs along a path. RTS, ILT, ISL, and path are defined in 178B.3."

In line 49 change: "ILT is used by the following PMD and AUI types:"
To: "PSU is used by the following PMD and AUI types"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **174** *SC* **174.2.12** *P* **272** *L* **45** # 240

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

Comment Type **ER** *Comment Status* **D** *psu wording (CI)*

Given the change of the title for annex 178b, it would seem appropriate to modify the title of 174.2.12, as well as update the description.

SuggestedRemedy

Change title from "Inter-sublayer link training (ILT)" to "Path Startup"
Modify description text to "Path startup (PSU) is the coordinated, orderly initialization of all ISLs in a path (See Annex 178B). PSU is
facilitated by the combination of the ready to send (RTS) function and the inter-sublayer link training (ILT) function.

Do same thing for 116.2.9 and 169.2.10.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **174A** *SC* **174A.9.2** *P* **746** *L* **24** # 312

Mi, Guangcan Huawei Technologies Co., Ltd.

Comment Type **T** *Comment Status* **D** *test blocks (CK)*

In a set of 4x544/p consecutive test symbols, the description of which 544/p test symbols form a test block could be clearer. For example, the test symbols of indices 0,4,..,4x544/p-4 belong to a test block. The test symbols of indices 1,5,..,4x544/p-3 belong to a test block. The test symbols of indices 2,6,..,4x544/p-2 belong to a test block. The test symbols of indices 3,7,..,4x544/p-1 belong to a test block. On the other hand, it is not clear whether all above mentioned test blocks or only one type of them shall be considered by the bin counters.

SuggestedRemedy

Add the suggested description of test blocks in the comment, or any equivalent but concise description. Besides, make it clear which test blocks shall be considered by bin counters.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See slides relating to comment #312 in the following editorial contribution:
<URL>/brown_3dj_03_2511.

Cl **174A** *SC* **174A.9.5** *P* **747** *L* **38** # 189

Dudek, Mike — Marvell

Comment Type **TR** *Comment Status* **D** *(CK)*

If the error mask fails it is also possible to use the single lane method with convolution (174A.9.7) without going to the extra complication of multilane measurements.

SuggestedRemedy

Change "method in 174A.9.6" to "methods in 174A.9.6 or 174A.9.7

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The method in 174A.9.7 is equally conservative, and perhaps more conservative for the cases where p is greater than 1 (for a multi-lane interfaces). The intent of 176A.9.7 is to resolve to a number on a single-lane measurement for a multiple-lane interface as though you are doing a multi-lane measurement. It is therefore helpful to introduce the multi-lane case first as an introduction. The text is correct and clear as written and the proposed method reduces the clarity.

Cl **174A** *SC* **174A.9.6** *P* **748** *L* **1** # 188

Dudek, Mike — Marvell

Comment Type **ER** *Comment Status* **D** *(CK)*

The order of the sections 174A.9.5, 174A.9.6 and 174A.9.7 is strange. 174A.9.5 is a per lane measurement that uses the histogram mask. 174A.9.6 is the multilane full test with error convolution which is the most relaxed test that is expected to meet inter-operability requirements. 174A.9.7 is the per lane measurement with error convolution and is somewhat intermediate between the other two.

SuggestedRemedy

Change the order preferably to 174A.9.6, followed by 174A.9.7, followed by 174A.9.5, but alternatively to 174A.9.5, followed by 174A.9.7, followed by 174A.9.6

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The order is deliberate. The method in 174A.9.7 is "pretending" to perform the measurement in 174A.9.6 but using the same lane as a surrogate for the other lanes. It is therefore helpful to introduce the ideal test in 174A.9.6 first.

Cl **174A** *SC* **174A.9.6** *P* **748** *L* **12** # 307

Mi, Guangcan — Huawei Technologies Co., Ltd.

Comment Type **T** *Comment Status* **D** *block error ratio (CK)*

When using Equation (174A-5) to calculate Ha(k), the value of p should be specified to be 1 as Ha(k) is a theoretical histogram without per-lane simulation. Ha(k) should reflect the error distribution over all lanes of an AUI.

SuggestedRemedy

Change the sentence "Calculate the error histogram Ha(k) for the added BER using Equation (174A-5) with BER = BERadded." to "Calculate the error histogram Ha(k) for the added BER using Equation (174A-5) with
BER = BERadded and p = 1."
Do the same change for Line 33 on Page 748 and Line 10 on Page 751.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The current method uses a value of p based on the number of lanes in on the interface. In a real application only a 1/p portion of each RS-FEC codeword would appear on each lane. This test method as currently written reflects this reality. Although might be the case that simplifying this approach by setting p to 1 universally would yield the same result, no evidence to this effect has been provided. Evidence to support the proposed change is required.

Cl **176C** *SC* **176C.3** *P* **793** *L* **21** # 56

Bruckman, Leon — Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

In Figure 176C-2 change "ILT" to "PSU functions" twice.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **178** *SC* **178.1** *P* **379** *L* **48** # 153

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *psu wording (CI)*

178B defines both ILT and RTS co-functions

SuggestedRemedy

In tables 178-3, 178-4, 178-5, and 178-6, change "178B--ILT" to "178B--RTS/ILT"
Update clauses 179 through 182 similarly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #150.

[Editor's note: CC: 178, 179, 180, 181, 182.]

Cl **178** *SC* **178.1** *P* **379** *L* **48** # 35

Bruckman, Leon — Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

In tables 178-1, 178-2, 178-3 and 178-4 change "ILT" to: "Path startup functions"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **178** *SC* **178.8.1** *P* **385** *L* **33** # 36

Bruckman, Leon — Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

In Figure 178-2 change "ILT function" to "PSU functions" twice.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **178** *SC* **178.8.9** *P* **386** *L* **30** # 37

Bruckman, Leon — Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

Change the title of 178.8.9 to: Path startup functions

Change: "The PMD inter-sublayer link training function specification is identical to that of 179.8.9."
To: "The PMD path startup specification is identical to that of 179.8.9."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **178B** *SC* **178B** *P* **863** *L* **1** # 154

Brown, Matt — Alphawave Semi

Comment Type **T** *Comment Status* **D** *psu wording (CI)*

178B defines both ILT and RTS co-functions. Previous references to ILT should refer to both. As an example, in Figure 178-2 the functional block labelled ILT should be relabelled as "RTS/ILT".

SuggestedRemedy

Throughout the draft when referring to the combination of RTS and ILT functions change "ILT" to "RTS/ILT".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **178B** *SC* **178B** *P* **863** *L* **1** # 150

Brown, Matt — Alphawave Semi

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

As a result of significant reorganization of Annex 178B the related references to the functionality defined in Annex 178B (path startup PSU, inter-sublayer link training ILT, ready-to-send RTS) need to be updated.

SuggestedRemedy

A contribution (likely brown_3dj_04_2511) will be provided to address this comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Pending CRG review of the related slides in the editorial contribution:
<URL>/brown_3dj_03_2511.

Cl **178B** *SC* **178B.1** *P* **863** *L* **12** # 237

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

Comment Type **ER** *Comment Status* **D** *psu Scope (CI)*

The scoped is stated as
"This annex defines the path startup functions for Physical Layer implementations that include one or more
inter-sublayer links (ISLs) (see 178B.3) with data rate of 200 Gb/s or higher per lane."
However, based on brown_3dj_05a_2509, it was noted that the startup was for the path - which was defined as RS to RS, which would be all of the ISL's in the path.
A note was also added - "AUI components and PMDs that are not specified to support the ILT function or the RTS function as defined in
this annex may include equivalent capabilities, however this is beyond the scope of this standard." Thus the specification is not defining their use.

SuggestedRemedy

Change -
"This annex defines the path startup functions for Physical Layer implementations that include one or more inter-sublayer links (ISLs) (see 178B.3) with data rate of 200 Gb/s or higher per lane."
to
"This annex defines the path startup functions for Physical Layer implementations based on inter-sublayer links (ISLs) (see 178B.3) with data rate of 200 Gb/s or higher per lane."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Annex 178B specifies the path startup functions, RTS function and ILT function, only for inter-sublayer links (ISLs) (see 178B.3) with data rate 200 Gb/s per lane. There is "permission" for similar support for other physical interfaces but this is, as stated, outside the scope of this standard.

If all ISLs along a path are 200 Gb/s per lane, then inherently the automatic startup is possible for the entire path. If there are ISLs that are not 200 Gb/s per lane then it is possible for path startup to be automated by implementing similar functionality for those ISLs but again beyond the scope of this standard.

The scope of this annex should accurately reflect this.

Change the scope statement to the following:
"This annex specifies the path startup functions for inter-sublayer links (ISLs) (see 178B.3) with data rate 200 Gb/s per lane."

Cl **178B** *SC* **178B.3** *P* **863** *L* **46** # 413

Ran, Adee — Cisco Systems

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

The definition of "Adjacent interface" should note that the adjacent interface is "in the same package".

SuggestedRemedy

Add "in the same package", with editorial license.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This addition will add a new term "package" that is not used in the Annex and refers to implementation that is not ruled by the Annex.

Cl **178B** *SC* **178B.3** *P* **864** *L* **5** # 350

Slavick, Jeff — Broadcom

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

Isn't "Path" the same as "path" as definedin 1.4 now? I only see "Path" used once in the title of the Figure 178B-1.

SuggestedRemedy

Remove the definition of "Path", change Path to path in Figure 176B-1 and make the title of Figure 178B-1 be ISL and path

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This issue was discussed during CRG of D2.1. The final response to comment #224 against D2.1 was: "Implement the proposal on slides 10 to 17 in brown_3dj_05a_2509.pdf with editorial license."
The definition of Path and the reason to keep this definition here are specified in slide 10 of brown_3dj_05a_2509.pdf.

Cl **178B** *SC* **178B.4** *P* **865** *L* **3** # 414

Ran, Adee
Cisco Systems

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

The first paragraph and dashed list define "support for PSU" in a very confusing way. The word "support" is overloaded and is used here recursively (support is defined by support). The order of the dashed list is top-down, and the reader needs to read the last item to get a chance to understand what "supported" means, and even then, the last item is defines "An ISL supports" (PSU) using "the interface supports" (functions), which is not well defined, so it's an incomplete definition. Functions are not "supported", they are specified, and should be implemented; these are not optional features.

Also it is not explained what happens when PSU is not "supported".

The suggested remedy rewrites this part of 178B.4 without "support", and from the bottom up.

SuggestedRemedy

Replace the first paragraph and list with the follows:

Support for PSU is defined as follows:
- An ISL between two interfaces can be activated using PSU if these interfaces and the associated sublayers (e.g., PMA, Inner FEC), implement the RTS function (see 178B.6) and the ILT function (see 178B.7), or have equivalent functions.
- A PHY can be activated using PSU if every ISL within the PHY can be activated using PSU.
- An xMII Extender can be activated using PSU if every ISL within it can be activated using PSU.
- A Physical Layer can be activated using PSU if the PHY and xMII Extender (if implemented) can be activated using PSU.
- A path can be activated using PSU if the Physical Layer at each end can be activated using PSU.

An ISL, PHY, Physical Layer or path that cannot be activated using PSU may be activated using management or other means beyond the scope of this annex.

Implement with editorial license.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Pending review of related slide in the editorial contribution:
<URL>/brown_3dj_03_2511.

Cl **178B** *SC* **178B.4** *P* **865** *L* **5** # 318

Slavick, Jeff
Broadcom

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

Is the word "both" necessary.

SuggestedRemedy

Delete the word "both" from the 2nd list item for Support for PSU.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to #414.

Cl **178B** *SC* **178B.7** *P* **868** *L* **1** # 11

Brown, Matt
Alphawave Semi

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

The ILT is defined assuming that all ISLs in a path support RTS/ILT. There is no guidance on behavior when one or more ISLs in a path do not support do not support those functions. For instance, how does ILT work on an ISL (200 Gb/s per lane) if the other ISLs are 100 Gb/s per lane or lower.

SuggestedRemedy

Add guidance for the case where the path does not support path startup.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #414.

Cl **178B** *SC* **178B.7** *P* **868** *L* **26** # 149

Brown, Matt — Alphawave Semi

Comment Type **TR** *Comment Status* **D** *LOCAL_PATTERN mode (CI)*

In Draft 2.2, the ILT function includes an alternate mode of operation, referred to as LOCAL_PATTERN mode, when the management variable mr_training_enable is set to false. In this mode, instead of sending bidirectional training frames and permitting parallel start-up of all ISLs in a path, this mode sends a locally generated pattern when the upstream receiver is done acquiring. It is not clear that this mode of operation is necessary. There are known issues with this mode of operation that need to be addressed. This mode of operation is redundant and complex and thus should be removed from the draft.

SuggestedRemedy

Remove the LOCAL_PATTERN mode of operation (mr_training_enable set to false) from Annex 178B.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
During D2.0 CRG we resolved a similar comment #126 by adding the note in page 883 line 10, that was further refined during CRG for D2.2. There was no consensus to remove this varaible.

Cl **178B** *SC* **178B.7.7** *P* **878** *L* **42** # 180

Dudek, Mike — Marvell

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

Polarity detection and correction is described in 178B.7.7 and required in 179.8.3 and clause 178 and annexes 176C and 176D by reference to 179.8.3. Nothing is however mentioned for the optical clauses leaving it somewhat ambiguous whether it is required or not.

SuggestedRemedy

Change the NOTE from "NOTE-Polarity detection and correction is not available when training is disabled." to "NOTE-Polarity detection and correction is not available when training is disabled, or for interfaces using the O1 format.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Subclause 180.5.12 specifies that the ILT function in 178B (specified in 178B.7 and subsidiary subclauses) shall be provided using the O1 format. It does not exclude the polarity inversion in 178B.7.7.

However, the comment highlights that it may not be obvious. It further points out that the polarity inversion functionally is more fully specified for electrical PMDs, e.g., in 179.8.2 and 178.8.3 for the CR PMD types.

Consider incorporating similar specifications for the PMD transmit function and PMD receiver function in clauses 180 through 183.

A related slide is provided in the following editorial contribution:
<URL>/brown_3dj_03_2511.

For task force discussion.

Cl **178B** *SC* **178B.8.2.1** *P* **883** *L* **19** # 292

Maki, Jeffery — Juniper Networks

Comment Type **TR** *Comment Status* **D** *psu variables (CI)*

Clause 178B.8.2.1 defined a per-interface variable "reset", but it is NOT in Table 178B-6 or Table 178B-7. According to the definition, the "reset" variable is to control the global resetting of the RTS and ILT state machines. Any situation when a reset is necessary, it could be TRUE. The situations include but are not limited to PMA_reset for AUI components, PMA_reset for PMDs, during power on.

SuggestedRemedy

Add a "reset" (maybe in a different name more exactly showing its real function) to Table 178B-6 and define its own per-lane based MDIO register.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The reset variable definition lists the cases in which reset is necessary. The user can activate it through PMA_reset or PMD_reset that are listed in Table 178B-6 and defined in clause 45.

Cl **178B** *SC* **178B.8.2.1** *P* **883** *L* **29** # 336

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **D** *psu variables (CI)*

When remote_rts is false but training_tatus is READY what do we do?

SuggestedRemedy

Add " or remote_rts is false and training_status is READY" to the IN_PROGRESS indication for rts_status

Proposed Response *Response Status* **W**

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

Cl **178B** *SC* **178B.8.2.4** *P* **884** *L* **7** # 236

Mascitto, Marco — Nokia

Comment Type **E** *Comment Status* **D** *psu variables (CI)*

The following are examples of variable updates that do not appear in state diagrams: training_status, local_mc_mode, local_tp_mode, adjacent_intf_rx_ready. The absence of these variable updates in the state diagrams makes the diagrams less useful.

SuggestedRemedy

Add the variable updates to the state diagrams.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
These variables and the way they are updated are clearly defined. adjacent_intf_rx_ready is the condition to start the RTS state diagram in 178B-9 (sumilar to reset). The initial conditions for local_mc_mode and local_tp_mode are in the state diagram, and their handling is detailed in 178B.7.9 as described in the variables definitions.

Cl **178B** *SC* **178B.8.2.4** *P* **884** *L* **13** # 351

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **D** *psu state diagrams (CI)*

The exit condition from WAIT_ADJ is the same as the exit from the TX_CLOCK_READY. So we can clarify this diagram by removing the WAIT_ADJ state

SuggestedRemedy

See presentation.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Pending review of the following presentation and CRG discussion.
<URL of presentation>

Cl **178B** *SC* **178B.8.3.1** *P* **886** *L* **12** # 19

Brown, Matt — Alphawave Semi

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

The definition of the local_rx_ready variable is ambiguous especially for the LOCAL_PATTERN mode (mr_training_enable = false). As defined, it is is not clear how what to do for the LOCAL_PATTERN mode. In this mode, there is no transmitter tuning so by default the remote transmit is already optimized, at least as well as its going to be. Although it says exact criteria are implementation specific, some bounds would be helpful.

SuggestedRemedy

Change the first sentence in the definition to "Boolean variable that is set to true when the local receiver on a lane of the interface has determined that it is receiving a PAM4 signal from the peer interface transmitter and that the peer interface transmitter (if mr_training_enable is set to true) and local receiver equalizers have been optimized."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change: "Boolean variable that is set to true when the receiver on a lane of the interface has determined that the peer interface transmitter is transmitting a PAM4 signal, that the remote transmit and local receive equalizers have been optimized, and that no further adjustments are required for normal data transmission."
To: "Boolean variable that is set to true when the receiver on a lane of the interface has determined that the peer interface transmitter is transmitting a PAM4 signal, that the remote transmit has been optimized if mr_training_enable is true, the local receive equalizers has been optimized, and that no further adjustments are required for normal data transmission. "

Cl **178B** *SC* **178B.8.3.3** *P* **888** *L* **11** # 221

Ran, Adee — Cisco Systems

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

The new max_wait_timer is specified to have a duration controlled by the variable max_wait_timer_duration, with a resolution of 1 second. The tolerance is specified as 0.1%, that is, 1 millisecond times max_wait_timer_duration. With the fault values of 30 or 60 this becomes ±30 or ±60 ms.

The reasoning for having the timer tolerance relative to its terminal count and with such fine precision is unclear. It is not expected to be related to clock accuracy. Other ILT timers are specified with absolute tolerances, and these tolerances are much larger relative to the timer values.

The ILT baseline proposal was deliberately loose on timers in order to enable implementation in multi-tasking firmware. The accuracy of the timeout for the training phase is not critical and can be relaxed. Also, it can be specified in absolute time units, enabling a clear design target.

The proposed tolerance is [0, 1] seconds relative to the variable. This would provide implementation flexibility while not affecting interoperability.

SuggestedRemedy

Change from
"The terminal count of this timer is max_wait_timer_duration variable in seconds ± 0.1%"
to
"The terminal count of this timer is between N and N+1 seconds, where N is the value of the max_wait_timer_duration variable".

Implement with editorial license.

Proposed Response *Response Status* **W**

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

Cl **178B** *SC* **178B.8.3.5** *P* **889** *L* **10** # 344

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **D** *State diagrams (CI)*

D2.1 comment #463 brought up an issue with local pattern mode. Nothing was changed in the resolution to address that local pattern mode. A potential fix was supplied on slide 22 of https://ieee802.org/3/dj/public/25_09/slavick_3dj_02a_2509.pdf but this may be a larger change than are necessary.

SuggestedRemedy

In Figure 178B-10 make the following changes:
Remove local_rts as a condition to enter SEND_LOCAL from QUIET
Change the assignement of tx_disable to be ~local_rts in SEND_LOCAL
add a recirculation from SEND_LOCAL to SEND_LOCAL when local_rts * tx_disable
add a transition from SEND_LOCAL to QUIET when !local_rts * !tx_disable
Update the transition from SEND_LOCAL to PATH_READY to also require !tx_disable

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #222.

Cl **178B** *SC* **178B.8.3.5** *P* **889** *L* **12** # 222

Ran, Adee — Cisco Systems

Comment Type **TR** *Comment Status* **D** *State diagrams (CI)*

An apparent issue in the Training control state diagram (Figure 178B-10) is that, if mr_training_enable is false, then lane_training_status can only have the values (IN_PROGRESS, OK, FAIL). It is never set to TRAINED. This means that the interface-level training_status cannot be set to READY, only to OK; the READY value is never propagated across the service interface. This might interfere with the path startup procedure when some of the ISLs have training disabled.

SuggestedRemedy

A presentation with more detailed analysis and a proposal is planned.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Pending review of the following presentation and CRG discussion.
<URL of presentation>

Cl **178B** *SC* **178B.8.3.5** *P* **889** *L* **26** # 340

Slavick, Jeff — Broadcom

Comment Type **T** *Comment Status* **D** *State diagrams (CI)*

We have statements that you can't be in PAM2 when you finish up training. This should be part of the FSM as well.

SuggestedRemedy

In 178B.8.3.1 add this variable:
local_mc_request
Enumerated variable that holds the state of training pattern modulation and coding request sent in the control field (see 178B.7.4.3). It is assigned one of the following values: PAM2, PAM4 without precoding, PAM4 with precoding.

In Figure 178B-10 add the condition " * local_mc_request != PAM2" to the transition from TRAIN_LOCAL to TRAIN_REMOTE.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Ther requirement to change to PAM4 is stated (and updated by the proposed resolutuion to comment #324. The proposed change to the state diagram seems to contradict the text in 178B.7.3.3

Cl **178B** *SC* **178B.8.3.5** *P* **889** *L* **43** # 291

Maki, Jeffery — Juniper Networks

Comment Type **TR** *Comment Status* **D** *State diagrams (CI)*

The exit conditions from the "PATH_UP" state are not defined in the Training State Control diagram. In the absence of a defined exit path, there is a possibility that the link may remain down in certain scenarios. Example Scenario:
(1)A path, which includes 3 ISLs:
ISL1: the host-module electrical interface between host 1 and module 1, which implements Type E1 ILT.
ISL2: the optical link between optical module 1 and optical module 2, which implements Type O1 ILT.
ISL3: the host-module electrical interface between module 2 and host 2, which implements Type E1 ILT.
(2)The path is in DATA mode, which means all Training State Control state machines of all lanes of all interfaces on this path are in "PATH_UP" state.
(3)If ISL2 needs to re-do the O1 ILT, for example, plug out and then plug in the fiber connector.
(4)How should the interfaces of ISL1 and ISL3 behave?
Should all Training State Control state machines of all lanes of ISL1 and ISL3 stay at "PATH_UP" states? Since the interfaces of ISL2 are re-doing the ILT, during which process, the DATA is interrupted and there is no more recovered clock for interfaces of ISL1 and ISL3.
Should all Training State Control state machines of all lanes of ISL1 and ISL3 go back to "ISL_READY" states to wait for the ILT completion of ISL2 and then again switch to DATA mode? The local clock source is used in "ISL_READY" state. The recovered clock source is used in "PATH_UP" state. The two states are in different clock domains. Going back to "ISL_READY" state means back and forth switching of clock source. Is this permitted?
Should all Training State Control state machines of all lanes of ISL1 and ISL3 go back to the "QUIET" state (the beginning of Training Control State Diagram) to do ILTs again? Should the re-doing of ILTs at ISL1 and ISL3 be triggered automatically (by ?) or be triggered by host using "mr_restart" control?

SuggestedRemedy

Define the exit conditions from the "PATH_UP" state in the Training State Control diagram for consistent behavior so vendor/user-specific implementations do not lead to a lack of interoperability.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The conditions to restart training are implementation specific and not defined by this standard. The user has the mr_restart_training variable that can be activated when it decides retraining is required.

Cl **178B** *SC* **178B.8.3.5** *P* **889** *L* **45** # 315

Mi, Guangcan — Huawei Technologies Co., Ltd.

Comment Type **T** *Comment Status* **D** *State diagrams (CI)*

When max_recovery_events is set to zero, unlimited number of recovery_event is allowed (Line 36 on Page 886). As a consequence, only recovery_timer is used to limit time cost for the lock recovery of training frames. Then, consider one interface and its peer interface in ISL_READY state, if the values of local_tf_lock of them always opposite, and the value of local_tf_lock of each interface keeps on switching between true and false without exceeding recovery_timer duration, a dead loop exists and the training control state diagram never has transition from ISL_READY to PATH_READY.

SuggestedRemedy

A presentation will be provided to discuss a solution to this issue.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Pending review of the following presentation and CRG discussion.
<URL of presentation>

Cl **179** *SC* **179.1** *P* **412** *L* **23** # 38

Bruckman, Leon — Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

In tables 179-1, 179-2, 179-3 and 179-4 change "ILT" to: "Path startup functions"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **179** *SC* **179.8.2** *P* **419** *L* **21** # 39

Bruckman, Leon — Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

In Figure 179-2 change "ILT function" to "PSU functions" twice.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **179** *SC* **179.8.4** *P* **420** *L* **21** # 40

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

Change: "the successful completion of the startup protocol by the inter-sublayer training (ILT) function (see 179.8.9)."
To: "the successful completion of the startup protocol (see 179.8.9)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **179** *SC* **179.9.5.2** *P* **433** *L* **5** # 202

Ran, Adee Cisco Systems

Comment Type **E** *Comment Status* **D** *Rx tests (CK)*

"The error ratio requirements are identical to those of 179.9.5.3"
The error ratio requirements are the same for all tests (they are based on the expectation stated in 179.2). It makes more sense to have a separate subclause that all three tests will refer to.

Similarly in the corresponding subclauses in clause 178.
Implementation in clause 180 should be considered, although its structure is different.

SuggestedRemedy

Create a new subclauses between the current 179.9.5.1 and 179.9.5.2, titled "Error ratio requirements for receiver tests".
Move the content the describes the error ratio parameters and requirements from 179.9.5.3 (Receiver interference tolerance) into the new subclause.
Add cross-references from all three receiver tests to the new subclause.

Make the corresponding changes in Clause 178. Consider making similar changes in clause 180.
Implement with editorial license.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The structure changes in the suggested remedy are also applicable in Annexes 176C and 176D, and may also be applicable in clauses 180-183 (for example, references to Table 180-20 in bot RS and SRS subclauses).
Implement the suggested remedy in clause 179, and make correspoinding changes in clause 178 and in Annexes 176C and 176D.
Wit editorial discretion, implement similar changes in 180-183.
Implement with editorial license.
[Editor's note: CC: 178, 179, 180, 181, 182, 183, 176C, 176D]

Cl **179** *SC* **179.9.5.3** *P* **434** *L* **8** # 203

Ran, Adee Cisco Systems

Comment Type **T** *Comment Status* **D** *Rx tests (CK)*

In Table 179-13, the receiver error mask for p values other than 1 goes to very low probabilities that would make the test extremely long and impractical to implement. These probabilities are too far from reasonable test times to use extrapolation with reasonable confidence that it represents real results.

Having users of the standard attempt to perform these tests would cause confusion and impression that the standard requirements are unrealistic.

It is more reasonable that stress tests would be performed as if each lane in the PMD is an individual PMD with p=1, or alternatively with the method of 174A.9.7 (convolving the results of shorter measurements of each lanes), in which case the error mask table is not used.

Therefore, the columns with p values 2, 4, and 8 are not useful and should be removed.

Similarly in the corresponding tables in clauses 178 and 180-183.

SuggestedRemedy

In the first paragraph of 179.9.5.3, change from
"The error mask Hmax(k) to be used in the method of 174A.9.5 is provided in Table 178-10"
to
"The error mask Hmax(k) to be used in the method of 174A.9.5 with p=1 is provided in Table 178-10. For larger values of p, the method of 174A.9.5 requires much lower error mask values and thus longer measurement times, and it is recommended to use the method of 174A.9.7 instead".

Delete the columns for p values larger than 1 in Table 179-13.

Apply the corresponding changes in clauses 178 and 180-183.

[CC 178, 179, 180, 181, 182, 183]

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Pending CRG discussion.
[Editor's note: CC: 178, 179, 180, 181, 182, 183]

Cl **179** *SC* **179.14** *P* **448** *L* **17** # 42

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

Change: "Additional variables associated with the ILT function"
To: "Additional variables associated with the PSU functions"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **179** *SC* **179.15.3** *P* **451** *L* **52** # 43

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

Change: "PMDILT"
To: "PMDPSU"

Change: "Inter-sublayer link training in PMD"
To: "Path startup functions in PMD"

Change: "ILT function is implemented in the PMD"
To: "PSU functions are implemented in the PMD"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **179** *SC* **179.15.3** *P* **452** *L* **3** # 44

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

Change: "AUIILT"
To: "AUIPSU"

Change: "Inter-sublayer link training in AUI-C2C"
To: "Path startup functions in AUI-C2C"

Change: "ILT function is implemented in the AUI-C2C"
To: "PSU functions are implemented in the AUI-C2C"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **180** *SC* **180.1** *P* **455** *L* **45** # 242

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

Comment Type **ER** *Comment Status* **D** *psu wording (CI)*

Annex 178B is no longer titled "ILT"

SuggestedRemedy

Suggest 2 possible changes to 178B entry in Table 180-1
1. Change "ILT" to "Path startup" or
2. Change "ILT" to "RTS / ILT"

Choose 1

Apply to Table 178-1, 178-2, 178-3, 178-4, 179-1, 179-2, 179-3, 179-4, 180-1, 180-2, 180-3, 180-4, 181-1, 182-1, 182-, 182-3, 182-4, 183-1, 185-1, 187-1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **180** *SC* **180.1** *P* **455** *L* **45** # 45

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

In tables 180-1, 180-2, 180-3 and 180-4 change "ILT" to: "Path startup functions"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **180** *SC* **180.5.1** *P* **461** *L* **47** # 46

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

Change: "The ILT function indicated in Figure 180-2 is defined in Annex 178B."
To: "The PSU functions indicated in Figure 180-2 are defined in Annex 178B."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **180** *SC* **180.5.1** *P* **462** *L* **7** # 47

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

In Figure 180-2 change "ILT" to "PSU functions" twice.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **180** *SC* **180.9.9** *P* **485** *L* **8** # 82

Brown, Matt Alphawave Semi

Comment Type **TR** *Comment Status* **D** *Tx FRx (CO)*

The quality of the jitter tolerance (clock tracking bandwidth) for the TXSEH functional receiver is unbounded. The only constraint is that it complies with (i.e., exceeds) the receiver characteristics in Table 180-8. Care is being taken to properly calibrate the vertical noise but no consideration is given for jitter (horizontal noise). A real receiver is required only to support a clock tracking bandwidth of 4 MHz based on jitter tolerance mask specified in 121.8.10.4. If the TXSEH functional has a tracking bandwidth much higher than 4 MHz then it would permit transmitters with excessive low-frequency jitter to pass.

SuggestedRemedy

Specify that the jitter tolerance of the TXSEH optical receiver (ORx) shall minimally comply with the jitter tolerance mask defined in 121.8.10.4 particularly for jitter frequencies 4 MHz and lower.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Pending review of the following presentation and CRG discussion.
<URL> issenhuth_3dj_01_2511.pdf

[Editor's note: Changed subclause from 180.9.9.1 to 180.9.9]

Cl **180** *SC* **180.9.9.1** *P* **486** *L* **8** # 226

Dawe, Piers Nvidia

Comment Type **TR** *Comment Status* **D** *Tx FRx (CO)*

Test receivers are usually well specified but the definition of the "functional receiver" is so loose that this test has very limited value. For example, without any control of the jitter tolerance spectrum, a bad transmitter matched with a high-jitter-bandwidth receiver will pass when it shouldn't. For another example, a "functional receiver" could tolerate mis-emphasised signals at the borderline of what TECQ and overshoot specs catch. For a third, the receiver does not need to achieve 3.5e-13 in bin 9 under any condition, so a good transmitter matched with an unknown receiver can fail when both, and the link they make, are compliant and good. The test cannot distinguish between transmitter and receiver; either can have memory effects. It only tells is if a pair "play nicely" with each other.
We moved away from a line-rate receiver (TDP) to an oscilloscope (TxVEC -> TDEC -> T(D)ECQ and T(D)ECQ_CER) in 2014 (802.3bm) because the scope has very little memory effect and it is well calibrated. That reasoning is still valid.
This "functional receiver" test is not suitable for compliance but could be developed to provide information about transmitter-receiver pairs to build an interop matrix (which is not the 802.3 way).

SuggestedRemedy

Move the method into an informative annex as a diagnostic of interest to network operators.
Remove the rows in the optical transmitter spec tables.
Plug some of the gaping holes in the "functional receiver" definition.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Pending review of the following presentation and CRG discussion.
<URL> issenhuth_01_dj_2511.pdf

Cl **180** *SC* **180.11** *P* **491** *L* **41** # 61

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

Change: "Additional variables associated with the ILT function are listed"
To: "Additional variables associated with the PSU functions are listed"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **181** *SC* **181.1** *P* **499** *L* **41** # 62

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

In table 181-1 change "ILT" to: "Path startup functions"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **181** *SC* **181.5.1** *P* **501** *L* **53** # 63

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

Change: "The ILT function indicated in Figure 181-2 is defined in Annex 178B."
To: "The PSU functions indicated in Figure 181-2 are defined in Annex 178B."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **181** *SC* **181.5.1** *P* **502** *L* **2** # 64

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

In Figure 181-2 change "ILT" to "PSU functions" twice.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **181** *SC* **181.11** *P* **520** *L* **4** # 66

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

Change: "Additional variables associated with the ILT function are listed"
To: "Additional variables associated with the PSU functions are listed"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **182** *SC* **182.1** *P* **526** *L* **41** # 67

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

In tables 182-1 , 182-2, 182-3 and 182-4 change "ILT" to: "Path startup functions"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **182** *SC* **182.5.1** *P* **532** *L* **10** # 68

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

Change: "The ILT function indicated in Figure 182-2 is defined in Annex 178B."
To: "The PSU functions indicated in Figure 182-2 are defined in Annex 178B."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **182** *SC* **182.5.1** *P* **533** *L* **21** # 69

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

In Figure 182-2 change "ILT" to "PSU functions" twice.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **182** *SC* **182.11** *P* **520** *L* **4** # 71

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

Change: "Additional variables associated with the ILT function are listed"
To: "Additional variables associated with the PSU functions are listed"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **183** *SC* **183.1** *P* **561** *L* **43** # 49

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

In table 183-1 change "ILT" to: "Path startup functions"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **183** *SC* **183.5.1** *P* **564** *L* **6** # 50

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

Change: "The ILT function indicated in Figure 183-2 is defined in Annex 178B."
To: "The PSU functions indicated in Figure 183-2 are defined in Annex 178B."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **183** *SC* **183.5.1** *P* **564** *L* **11** # 51

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

In Figure 183-2 change "ILT" to "PSU functions" twice.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **183** *SC* **183.11** *P* **585** *L* **18** # 53

Bruckman, Leon Nvidia

Comment Type **TR** *Comment Status* **D** *psu wording (CI)*

The Annex 178b name changed

SuggestedRemedy

Change: "Additional variables associated with the ILT function are listed"
To: "Additional variables associated with the PSU functions are listed"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #150.

Cl **184** *SC* **184.2.** *P* **595** *L* **1** # 219

Ran, Adee Cisco Systems

Comment Type **T** *Comment Status* **D** *psu coherent (CI)*

There seems to be consensus that PHYs and modules using coherent optics should participate in path startup. For that purpose, a method for communicating RTS across coherent optics ISL should be defined.
Since the 800GBASE-LR1 PMD (Clause 185) is just a converter between electrical signals and an optical signal, while all the logic functions reside in the inner FEC sublayer (Clause 184), the location of the ILT function for this PHY should be in Clause 184.

Similarly, the 800GBASE-ER1 PMDs (Clause 187) have all the logic functions in the FEC sublayer (Clause 186), so the location of the ILT function for this PHY should be in Clause 184.

We need to make the following changes:
- Expansion of the service interface of the inner FEC (C184) and FEC (C186) sublayers to support ILT/PSU signaling
- addition of ILT function in the functional specifications and its location in the transmit and receive data paths
- a training frame format for coherent optics
- specification of the effect of tx_disable

SuggestedRemedy

A presentation with a detailed proposal for ILT over coherent is planned.
[CC 184, 185, 186, 187, 178B]

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Pending review of the following presentation and CRG discussion.
<URL of presentation>
[Editor's note: CC: 184, 185, 186, 187, 178B, 169]