Cl **FM** *SC* **FM** *P* **8** *L* **12** # 166

Wienckowski, Natalie IVN Solutions LLC / Ethernovia

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

need to update officers and Editors

SuggestedRemedy

Replace "Jon Lewis" with "Natalie Wienckowski" for TF Chair.
Replace "Natalie Wienckowski" with "Steve Gorshe" for TF Vice-Chair.
Add "Valarie Maguire" as Clause Editor.

Response *Response Status* **C**

ACCEPT.

Cl **FM** *SC* **FM** *P* **10** *L* **32** # 167

Wienckowski, Natalie IVN Solutions LLC / Ethernovia

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

add "dm"

SuggestedRemedy

Change: IEEE Std 802.3xx-20xx
To: IEEE Std 802.3dm-202x

Response *Response Status* **C**

ACCEPT.

Cl **FM** *SC* **FM** *P* **13** *L* **1** # 7

Maguire, Valerie Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

Insert Amendments 10 through 12

SuggestedRemedy

Insert:

IEEE Std 802.3da™-2026
Amendment 10—This amendment includes changes to IEEE Std 802.3-2022 and adds Clause 188 through Clause 189. This amendment adds Physical Layer specifications and management parameters for enhancement of multidrop 10 Mb/s operation based on the 10BASE-T1S PHY specified in Clause 147 of IEEE Std 802.3-2022, and specifies optional provision of power over single balanced pair mixing segments. Additionally, this amendment includes additions and changes to Clause 148 to automatically allocate node IDs (Dynamic PLCA).

IEEE Std 802.3dk™-20xx
Amendment 11—This amendment includes changes to IEEE Std 802.3-2022 and adds Clause 168. This amendment adds Physical Layer specifications and management parameters for 100 Gb/s Ethernet optical interfaces for bidirectional operation over a single strand of single-mode fiber.

IEEE Std 802.3dg™-20xx
Amendment 12—This amendment to IEEE Std 802.3-2022 specifies additions and appropriate modifications to add 100 Mb/s Physical Layer (PHY) specifications and management parameters for operation, and associated optional provision of power, over a single balanced pair of conductors.

Response *Response Status* **C**

ACCEPT.

Cl **1** *SC* **1.4** *P* **30** *L* **35** # 2

Maguire, Valerie — Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

Missing Abbreviatons for ACT and TDD

SuggestedRemedy

Insert:

ACT Asymmetric Coded Transceiver
TDD Time Division Duplex

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Insert:

ACT Asymmetric Concurrent Transmission
TDD Time Division Duplex

Cl **1** *SC* **1.4.88** *P* **30** *L* **20** # 322

Shen, David — Infineon

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

Physical Coding Sublayer (PCS) for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation(including asymmetric PHYs with one of these rates in one direction and 100 Mb/s in the reverse direction).

SuggestedRemedy

Physical Coding Sublayer (PCS) for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation(including asymmetric PHYs with 100 Mb/s in the reverse direction).

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change: Physical Coding Sublayer (PCS) for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation (including asymmetric PHYs with one of these rates in one direction and 100 Mb/s in the reverse direction).

To: Physical Coding Sublayer (PCS) for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation (including asymmetric PHYs with 100 Mb/s in the reverse direction).

Cl **30** *SC* **30.3.2.1.2** *P* **31** *L* **27** # 20

Sun, Jingcong — Motorcomm

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

typo

SuggestedRemedy

change '100M+2.5GBASE-T1/V1' to '100M+5GBASE-T1/V1'

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.2.1.2** *P* **31** *L* **29** # 21

Sun, Jingcong — Motorcomm

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

typo

SuggestedRemedy

change '100M+2.5GBASE-T1/V1' to '100M+5GBASE-T1/V1'

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.2.1.2** *P* **31** *L* **38** # 22

Sun, Jingcong — Motorcomm

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

typo

SuggestedRemedy

change '100M+2.5GBASE-T1/V1' to '100M+10GBASE-T1/V1'

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.2.1.2** *P* **31** *L* **40** # 23

Sun, Jingcong — Motorcomm

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

typo

SuggestedRemedy

change '100M+2.5GBASE-T1/V1' to '100M+10GBASE-T1/V1'

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.2.1.3** *P* **32** *L* **6** # 24

Sun, Jingcong Motorcomm

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

typo

SuggestedRemedy

change '100M+2.5GBASE-T1/V1' to '100M+5GBASE-T1/V1'

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.2.1.3** *P* **32** *L* **8** # 25

Sun, Jingcong Motorcomm

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

typo

SuggestedRemedy

change '100M+2.5GBASE-T1/V1' to '100M+5GBASE-T1/V1'

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.2.1.3** *P* **32** *L* **15** # 26

Sun, Jingcong Motorcomm

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

typo

SuggestedRemedy

change '100M+2.5GBASE-T1/V1' to '100M+10GBASE-T1/V1'

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.2.1.3** *P* **32** *L* **17** # 27

Sun, Jingcong Motorcomm

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

typo

SuggestedRemedy

change '100M+2.5GBASE-T1/V1' to '100M+10GBASE-T1/V1'

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.5.1.1.2** *P* **32** *L* **33** # 168

Wienckowski, Natalie IVN Solutions LLC / Ethernovia

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

Replace references to Clause 200 with references to Clause 201 and Clause 202.

SuggestedRemedy

Duplicate the groups in 30.5.1.1.2 to include reference to Clause 201 and Clause 202 and remove the reference to Clause 200, similar to what was done for 30.3.2.1.3.

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.5.1.1.2** *P* **32** *L* **33** # 160

Wienckowski, Natalie IVN Solutions LLC / Ethernovia

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

Eliminate links to Clause 200

SuggestedRemedy

Make copies of all tiems and create links to Clause 201 and to Clause 202.

Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Duplicate of #168

Cl **30** *SC* **30.6.1.1** *P* **33** *L* **15** # 161

Wienckowski, Natalie IVN Solutions LLC / Ethernovia

Comment Type **T** *Comment Status* **D** *EZ - autoneg*

Delete -V1 rows as Clause 98 Auto-Negotiation doesn't apply to -V1.

SuggestedRemedy

Delete rows in lines 15, 16, 25, 26, 35, and 36.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add -V1 Auto-Negotiation to Clause 98.

Using editor's notes, underline, and strikethrough, make changes in Clause 98 per 8023-98v1.pdf.

Update 98.5.1 in P8023dm_D0pb.pdf to change T1 to T1/V1 in the list. This is not shown in 8023-98v1.pdf.

Delete Editors notes on P251L13 and P252L5.

Cl **45** *SC* **45.2.1** *P* **34** *L* **23** # 152

Wienckowski, Natalie IVN Solutions LLC / Ethernovia

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

PMA/PMD type selection BASE-T1 needs to be changed to BASE-T1/V1

SuggestedRemedy

Bring 45.2.1.6 and 45.2.1.6.3 headings into the draft.
Do the following with the appropriate editorial instructions and underline/strikethrough.
Bring Table 45-7 into the draft and Change the row: 0 1 1 1 1 0 1 = BASE-T1 PMA/PMDb
To: 0 1 1 1 1 1 1 = BASE-T1/V1 PMA/PMDb
Change note b: If BASE-T1 is selected, bits 1.2100.3:0 are used to differentiate which BASE-T1 PMA/PMD is selected.
To: If BASE-T1/V1 is selected, bits 1.2100.4:0 are used to differentiate which BASE-T1/V1 PMA/PMD is selected.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **35** *L* **15** # 154

Wienckowski, Natalie IVN Solutions LLC / Ethernovia

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

Need to add -V1 ability and Asymmetric -T1 ability to Register 1.18

SuggestedRemedy

Do the following with the appropriate editorial instructions and underline/strikethrough.
Bring 45.2.1.16 BASE-T1 PMA/PMD extended ability register (1.18)
and Change it to: 45.2.1.16 BASE-T1/V1 PMA/PMD extended ability register (1.18)
Bring in Table 45-19 and change BASE-T1 to BASE-T1/V1 in the title
Change Reserved row in the table to 1.18.15:11 (with appropriate change marks)
New row: 1.18.10 | MultiG+100/100M+MultiGBASE-T1 ability | 1 = PMA/PMD is able to perform MultG+100/100M+MultiGBASE-V1 ability listed in register 1.77
| | 0 = PMA/PMD is able to perform MultG+100/100M+MultiGBASE-T1 ability listed in register 1.77
Add new subclause 45.2.1.16.aaa MultiG+100M/100M+MultiG ability (1.18.10)
When read as a one, bit 1.18.10 indicates that the PMA/PMD is able to operate as a MultiG+100M/100M+MultiGBASE-V1 PMD type. When read as a zero, bit 1.18.10 indicates that the PMA/PMD is able to operate as a MultiG+100M/100M+MultiGBASE-T1 PMD type.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Added P35/L15

Cl **45** *SC* **45.2.1** *P* **35** *L* **16** # 153

Wienckowski, Natalie IVN Solutions LLC / Ethernovia

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

Bit 1.11.11 needs to be changed to BASE-T1/V1

SuggestedRemedy

Bring 45.2.1.10 heading into the draft.
Do the following with the appropriate editorial instructions and underline/strikethrough.
Bring Table 45-14 into the draft and Change the row for bit 1.11.11:0, changing BASE-T1 to BASE-T1/V1 in 3 places.
Bring 45.2.1.10.5 into the draft, and change BASE-T1 to BASE-T1/V1 in 2 places.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.7.4** *P* **34** *L* **38** # 162

Wienckowski, Natalie IVN Solutions LLC / Ethernovia

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

Add links to Clause 201.

SuggestedRemedy

Add link to 201.5.2.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.7.4** *P* **34** *L* **41** # 163

Wienckowski, Natalie IVN Solutions LLC / Ethernovia

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

Add links to Clause 201.

SuggestedRemedy

Add link to 201.5.2.3, unless combined and the link is to 201.5.2.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.7.5** *P* **35** *L* **7** # 164

Wienckowski, Natalie IVN Solutions LLC / Ethernovia

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

Add links to Clause 201.

SuggestedRemedy

Add link to 201.5.2.4, unless combined and the link is to 201.5.2.3.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.7.5** *P* **35** *L* **10** # 165

Wienckowski, Natalie IVN Solutions LLC / Ethernovia

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

Add links to Clause 201.

SuggestedRemedy

Add link to 201.5.2.5, unless combined and the link is to 201.5.2.3.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.214** *P* **39** *L* **4** # 6

Maguire, Valerie Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

IEEE P802.3da has published.

SuggestedRemedy

On P39, L4:
Replace, " IEEE Std 802.3da-202x" with, " IEEE Std 802.3da-2026

On P39, L40:
Replace, " IEEE Std 802.3da-202x" with, " IEEE Std 802.3da-2026

Response *Response Status* **C**

ACCEPT.

Cl **46** *SC* **46.1** *P* **40** *L* **11** # 323

Shen, David Infineon

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

Physical Coding Sublayer (PCS) for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation(including asymmetric PHYs with one of these rates in one direction and 100 Mb/s in the reverse direction).

SuggestedRemedy

Physical Coding Sublayer (PCS) for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation(including asymmetric PHYs with 100 Mb/s in the reverse direction).

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change: Physical Coding Sublayer (PCS) for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation (including asymmetric PHYs with one of these rates in one direction and 100 Mb/s in the reverse direction).

To: Physical Coding Sublayer (PCS) for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation (including asymmetric PHYs with 100 Mb/s in the reverse direction).

Cl **46** *SC* **46.1** *P* **40** *L* **19** # 324

Shen, David Infineon

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

Physical Coding Sublayer (PCS) for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation(including asymmetric PHYs with one of these rates in one direction and 100 Mb/s in the reverse direction).

SuggestedRemedy

Physical Coding Sublayer (PCS) for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation(including asymmetric PHYs with 100 Mb/s in the reverse direction).

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change: Physical Coding Sublayer (PCS) for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation (including asymmetric PHYs with one of these rates in one direction and 100 Mb/s in the reverse direction).

To: Physical Coding Sublayer (PCS) for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation (including asymmetric PHYs with 100 Mb/s in the reverse direction).

Cl **46** *SC* **46.1.1** *P* **40** *L* **28** # 325

Shen, David Infineon

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

Physical Coding Sublayer (PCS) for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation(including asymmetric PHYs with one of these rates in one direction and 100 Mb/s in the reverse direction).

SuggestedRemedy

Physical Coding Sublayer (PCS) for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation(including asymmetric PHYs with 100 Mb/s in the reverse direction).

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change: Physical Coding Sublayer (PCS) for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation (including asymmetric PHYs with one of these rates in one direction and 100 Mb/s in the reverse direction).

To: Physical Coding Sublayer (PCS) for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation (including asymmetric PHYs with 100 Mb/s in the reverse direction).

Cl **46** *SC* **46.1.3** *P* **40** *L* **42** # 326

Shen, David Infineon

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

Physical Coding Sublayer (PCS) for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation(including asymmetric PHYs with one of these rates in one direction and 100 Mb/s in the reverse direction).

SuggestedRemedy

Physical Coding Sublayer (PCS) for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation(including asymmetric PHYs with 100 Mb/s in the reverse direction).

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change: Physical Coding Sublayer (PCS) for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation (including asymmetric PHYs with one of these rates in one direction and 100 Mb/s in the reverse direction).

To: Physical Coding Sublayer (PCS) for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation (including asymmetric PHYs with 100 Mb/s in the reverse direction).

Cl **46** *SC* **46.3.1.1** *P* **41** *L* **9** # 263

Fuller, Paul Infineon

Comment Type **T** *Comment Status* **R** *clock accuracy*

the frequency is +/- 100ppm - I believe the ACT spec is +/-50ppm?

SuggestedRemedy

Change to +/- 50ppm

Response *Response Status* **C**

REJECT.

This is in Clause 46. Changing this would impact all subclauses that use XGMII. An individual Clause that references XGMII can require a tighter tolerance, if desired.

Cl **46** *SC* **46.3.1.1** *P* **41** *L* **9** # 328

Shen, David Infineon

Comment Type **T** *Comment Status* **R** *clock accuracy*

The TX_CLK frequency shall be 1/64 × fMAC +/-100 ppm, where fMAC is the frequency (in Hz)

SuggestedRemedy

The TX_CLK frequency shall be 1/64 × fMAC +/-50 ppm, where fMAC is the frequency (in Hz)

Response *Response Status* **C**

REJECT.

This is in Clause 46. Changing this would impact all subclauses that use XGMII. An individual Clause that references XGMII can require a tighter tolerance, if desired.

Cl **46** *SC* **46.3.2.1** *P* **41** *L* **18** # 327

Shen, David Infineon

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

The frequency of RX_CLK may be derived from the received data or it may correspond to be that of a nominal clock (e.g., TX_CLK)

SuggestedRemedy

The frequency of RX_CLK may be derived from the received data or the nominal clock (e.g., TX_CLK)

Response *Response Status* **C**

ACCEPT.

Cl **46** *SC* **46.3.2.1** *P* **41** *L* **20** # 329

Shen, David Infineon

Comment Type **T** *Comment Status* **R** *clock accuracy*

frequency shall be 1/64 × fMAC +/-100 ppm, where fMAC is the frequency (in Hz) corresponding to the

SuggestedRemedy

frequency shall be 1/64 × fMAC +/-50 ppm, where fMAC is the frequency (in Hz) corresponding to the

Response *Response Status* **C**

REJECT.

This is in Clause 46. Changing this would impact all subclauses that use XGMII. An individual Clause that references XGMII can require a tighter tolerance, if desired.

Cl **46** *SC* **46.3.2.1** *P* **41** *L* **20** # 264

Fuller, Paul Infineon

Comment Type **T** *Comment Status* **R** *clock accuracy*

the frequency is +/- 100ppm - I believe the ACT spec is +/-50ppm?

SuggestedRemedy

Change to +/- 50ppm

Response *Response Status* **C**

REJECT.

This is in Clause 46. Changing this would impact all subclauses that use XGMII. An individual Clause that references XGMII can require a tighter tolerance, if desired.

Cl **46** *SC* **46.6.2.3** *P* **41** *L* **40** # 169

Wienckowski, Natalie IVN Solutions LLC / Ethernovia

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

Row with "…" is not needed as there is no row below the one being added.

SuggestedRemedy

Delete last row of Table in 46.6.2.3.

Response *Response Status* **C**

ACCEPT.

Cl **200** *SC* **200.1.1** *P* **46** *L* **18** # 170

Wienckowski, Natalie IVN Solutions LLC / Ethernovia

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

typo

SuggestedRemedy

In list under "where", put a comma after the first two items and a period after the last. Also on P73/L50 and P156/L18.

Response *Response Status* **C**

ACCEPT.

Cl **200** *SC* **200.11.2** *P* **63** *L* **33** # 269

Fuller, Paul — Infineon

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

AC coupling cap should be 10nF

SuggestedRemedy

AC coupling cap should be 10nF

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD. 201.9.2 refers to 149.7.2. We can bring in the text to 201, but we can't change 149.7.2.

Cl **200** *SC* **200.12** *P* **63** *L* **50** # 28

Sun, Jingcong — Motorcomm

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

typo

SuggestedRemedy

change '100Mb/s' to '100 Mb/s'

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.1** *P* **72** *L* **20** # 157

Wienckowski, Natalie — IVN Solutions LLC / Ethernovia

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

Replace Editor's note with text.

SuggestedRemedy

Delete Editor's Note
Add the following text: This clause defines the type 100M+2.5GBASE-T1/V1, 2.5G+100MBASE-T1/V1, 100M+5GBASE-T1/V1, 5G+100MBASE-T1/V1, 100M+10GBASE-T1/V1, and 10G+100MBASE-T1/V1 Physical Coding Sublayer (PCS) as well as the 100M+2.5GBASE-T1/V1, 2.5G+100MBASE-T1/V1, 100M+5GBASE-T1/V1, 5G+100MBASE-T1/V1, 100M+10GBASE-T1/V1, and 10G+100MBASE-T1/V1 Physical Medium Attachment (PMA) sublayers. Together, the corresponding PCS and PMA sublayers comprise a 100M+2.5GBASE-T1, 2.5G+100MBASE-T1, 100M+5GBASE-T1, 5G+100MBASE-T1,100M+10GBASE-T1, 10G+100MBASE-T1, 100M+2.5GBASE-V1, 2.5G+100MBASE-V1, 100M+5GBASE-V1, 5G+100MBASE-V1, 100M+10GBASE-V1, and 10G+100MBASE-V1 Physical Layer device (PHY). Provided in this clause are functional and electrical specifications for the type 100M+2.5GBASE-T1/V1 PCS and PMA, 2.5G+100MBASE-T1/V1 PCS and PMA, 100M+5GBASE-T1/V1 PCS and PMA, 5G+100MBASE-T1/V1 PCS and PMA, 100M+10GBASE-T1/V1 PCS and PMA, and 10G+100MBASE-T1/V1 PCS and PMA.

The 100M+2.5GBASE-T1, 2.5G+100MBASE-T1, 100M+5GBASE-T1, 5G+100MBASE-T1,100M+10GBASE-T1, and 10G+100MBASE-T1 PHYs are intended to be operated over a single balanced pair of conductors. The link segment specifications defined in 201.9 were derived from automotive requirements, but may also be used for non-automotive applications. The conductors supporting the operation of the 100M+2.5GBASE-T1, 2.5G+100MBASE-T1, 100M+5GBASE-T1, 5G+100MBASE-T1, 100M+10GBASE-T1, and 10G+100MBASE-T1 PHYs are defined in terms of performance requirements between the Medium Dependent Interfaces (MDIs) allowing implementers to provide their own conductors to operate the 100M+2.5GBASE-T1, 2.5G+100MBASE-T1, 100M+5GBASE-T1, 5G+100MBASE-T1, 100M+10GBASE-T1, and 10G+100MBASE-T1 PHYs as long as the normative requirements included in 201.9 are met.

The 100M+2.5GBASE-V1, 2.5G+100MBASE-V1, 100M+5GBASE-V1, 5G+100MBASE-V1, 100M+10GBASE-V1, and 10G+100MBASE-V1 PHYs are intended to be operated over a single coaxial cable. The link segment specifications defined in 201.10 were derived from automotive requirements, but may also be used for non-automotive applications. The conductor supporting the operation of the 100M+2.5GBASE-V1, 2.5G+100MBASE-V1, 100M+5GBASE-V1, 5G+100MBASE-V1, 100M+10GBASE-V1, and 10G+100MBASE-V1 PHYs are defined in terms of performance requirements between the Medium Dependent Interfaces (MDIs) allowing implementers to provide their own conductors to operate the 100M+2.5GBASE-V1, 2.5G+100MBASE-V1, 100M+5GBASE-V1, 5G+100MBASE-V1, 100M+10GBASE-V1, and 10G+100MBASE-V1 PHYs as long as the normative requirements included in 201.10 are met.

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.1.1** *P* **72** *L* **26** # 158

Wienckowski, Natalie — IVN Solutions LLC / Ethernovia

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

The Editor's note is no longer needed

SuggestedRemedy

Delete boxed Editor's note

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.1.1** *P* **73** *L* # 29

Tan, Yuxuan — Motorcomm

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

The direction of arrows in LS_PATH in Figure 201-1 should be reversed.

SuggestedRemedy

Change direction of arrows in LS_PATH in Figure 201-1 to LS_RX PCS <- LS_RX PMA <--------- LS_TX PMA <- LS_TX PCS.

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.1.1** *P* **73** *L* **17** # 145

Pandey, Sujan — Velinktech

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

Figure 201-1, the arrows of LS_PATH is not correct

SuggestedRemedy

All arrows of LS_PATH need to be reversed

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.1.2** *P* **74** *L* **37** # 159

Wienckowski, Natalie — IVN Solutions LLC / Ethernovia

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

Replace Editor's note with text.

SuggestedRemedy

Delete Editor's Note
Add the following text: The relationship between a MultiG+100M/100M+MultiGBASE-T1/V1 PHY, the ISO Open Systems Interconnection (OSI) Reference Model, and the IEEE 802.3 Ethernet Model is shown in Figure 201-x. The PHY sublayers (shown shaded) in Figure 201-x connect one Clause 4 Media Access Control (MAC) layer to the medium. The XGMII is defined in Clause 46.

Auto-Negotiation for 100M+2.5GBASE-T1, 2.5G+100MBASE-T1, 100M+5GBASE-T1, 5G+100MBASE-T1,100M+10GBASE-T1, and 10G+100MBASE-T1 PHYs is defined in Clause 98. Auto-Negotiation is not defined for 100M+2.5GBASE-V1, 2.5G+100MBASE-V1, 100M+5GBASE-V1, 5G+100MBASE-V1, 100M+10GBASE-V1, and 10G+100MBASE-V1 PHYs.

See Relationship_Figure.png for Figure 201-x.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Implement proposed text and See Relationship_Figure_v2.png for Figure 201-x.

Cl **201** *SC* **201.1.3** *P* **74** *L* **48** # 171

Wienckowski, Natalie — IVN Solutions LLC / Ethernovia

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

typo

SuggestedRemedy

Change: block diagram of PHY_D device.
To: block diagram of the PHY_D device.

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.1.3** *P* **77** *L* **43** # 247

Muma, Scott — Microchip

Comment Type **T** *Comment Status* **D** *clock recovery*

Clock recovery in Figure 202-3 is not an optional function as described in 201.5.2.11. It is necessary to receiver operation, and many other clauses have Clock Recovery without looptiming. It's not necessary to provide the recovered_clock to the PMA Transmit function in the leader. Another way to remove looptiming capability from the leader should be found for Figure 202-3

SuggestedRemedy

Remove (follower only) from Clock Recovery, and consider adding to recovered_clock or in Note 1 below the figure.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change Figure 201-3 as follows:

In CLOCK RECOVERY box, remove "(follower only)".

Change the line between the CLOCK RECOVERY and HS_RX PMA RECEIVE to have an arrow at both ends.

Change: NOTE 1—The recovered_clock arc is shown to indicate delivery of the received clock signal by the LS_TX PMA TRANSMIT for loop timing.

To: NOTE—The recovered_clock arc, FOLLOWER only, is shown to indicate delivery of the received clock signal by the LS_TX PMA TRANSMIT for loop timing.

Cl **201** *SC* **201.1.3.2** *P* **78** *L* **45** # 172

Wienckowski, Natalie — IVN Solutions LLC / Ethernovia

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

The DME definition was moved

SuggestedRemedy

Change: 201.4.2.3
To: 201.5.2.3.1, or appropriate reference is comment combining the LS and HS PMA transmit functions is accepted.

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.1.5** *P* **80** *L* **15** # 34

Jonsson, Ragnar — Infineon

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

The statement "The LS_TX PCS generates a continuous stream of DME symbols that are transmitted via the LS_TX PMA" is not correct

SuggestedRemedy

Change to "The LS_TX PCS generates a continuous stream of bits that are transmitted via the LS_TX PMA"

Response *Response Status* **C**

ACCEPT.

Added Clause 201.1.5

Cl **201** *SC* **201.2** *P* **80** *L* **49** # 173

Wienckowski, Natalie — IVN Solutions LLC / Ethernovia

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

SuggestedRemedy

Delete Editor's note

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.2.1.1** *P* **81** *L* **17** # 174

Wienckowski, Natalie — IVN Solutions LLC / Ethernovia

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

98.4.2 isn't in the spec

SuggestedRemedy

Change "98.4.2" to "External" character type.

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.2.1.2.2** *P* **82** *L* **4** # 175

Wienckowski, Natalie — IVN Solutions LLC / Ethernovia

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

The Link Monitor state diagram is in Clause 201

SuggestedRemedy

Change: External reference to Figure 149-33
To: Internal reference to Figure 201-23-Link Monitor state diagram.

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.2.1.2.2** *P* **82** *L* **64** # 309

Razavi, Alireza — Infineon

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

Wrong figure reference: Figure 149-33 should be replaced by Figure 201-23.

SuggestedRemedy

See comment.

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.2.2.3.1** *P* **86** *L* **17** # 35

Jonsson, Ragnar — Infineon

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

PAM2 is also used in the training frames

SuggestedRemedy

Add at the end of line 17: ", and HS_PATH training frames"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.2.2.3.1** *P* **86** *L* **26** # 146

Pandey, Sujan — Velinktech

Comment Type **T** *Comment Status* **A** *DME symbols*

Z

SuggestedRemedy

should be '0' instead

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

see #249

Cl **201** *SC* **201.2.2.3.1** *P* **86** *L* **26** # 249

Muma, Scott — Microchip

Comment Type **T** *Comment Status* **A** *DME symbols*

It's unclear when zero means "0" vs. "Z". For the LS_PATH should consistently use "Z" (meaning electrical idle or high-impedance on the MDI) instead of the term zeros as a DME zero is not the same as a PAM2 or PAM4 zero.

SuggestedRemedy

First determine if Z means "electrical idle" or "a vector of Z values". Then replace "zeros" here with the selected term, and replace consistently for the LS_PATH PCS layer.
Other places to amend: P85L10, P97L8, P117L42, P122L36.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

P85L10, P86L26
Change: zeros
To: Z symbols

P97L8
Change: pass a vector of zeros
To: pass a Z symbol

Cl **201** *SC* **201.3** *P* **89** *L* **1** # 313

Razavi, Alireza Infineon

Comment Type **E** *Comment Status* **D** *PCS HS*

The text is hard to follow.

SuggestedRemedy

Move the text from Clause 149 to Clause 201, and remove references to EEE.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See 201_PCS.pdf

Consider #313 & #208 together

Cl **201** *SC* **201.3.2.2** *P* **90** *L* **39** # 208

Zimmerman, George CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **A** *PCS HS*

The requirement purports to bring in all the specifications for 149.3.2.2 (including 149.3.2.2.1 through .22) but this doesn't really work. The PAM2 changes need to be explicitly spelled out, and the deletion of EEE needs to be spelled out - at least. Suggest bring in the text from clause 149 that is intended, and review that.

SuggestedRemedy

Suggest bring in the text from 149.3.2.2, 149.3.2.2.x where .x is 1 through 21 with editorial license to delete EEE portions and label PAM4 portions as 10G only.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See 201_PCS.pdf
Consider #313 & #208 together

Cl **201** *SC* **201.3.2.2** *P* **91** *L* **13** # 205

Zimmerman, George CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **E** *Comment Status* **A** *PCS HS*

There are a number of errors in Figure 201-7. It shows the 10G path, which doesn't exist in a 2.5G or 5G PHY. Secondly, the inputs and outputs of the HS_TX PCS Transmit function is unlabeled in Figure 201-7.

SuggestedRemedy

Split the Figure into 2 figures - one for 2.5G/5G and one for 10G. The 2.5G/5G figure doesn't have the extra scrambler output, gray mapping, selectable precoder, PAM4 mapper or MUX. The 10G figure doesn't have the note.
Show the interface on the left hand side that the Dn[0], Dn[1] comes over. I presume it is blocked data? It needs to come from a blocker. Show tx_symb as the output from the MUX (or the PAM2 mapper for 2.5G/5G). I will attempt to put together a contribution with how I understand the figure.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace Figure 201-7 with 201-7a and 201-7b in GZ_Comment_205_Fig201-7v4.pdf.

Cl **201** *SC* **201.3.2.2** *P* **91** *L* **45** # 36

Jonsson, Ragnar Infineon

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

Incorrect figure reference to Figure 201–6

SuggestedRemedy

Replace Figure 201–6 with Figure 201–7

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.3.2.2** *P* **92** *L* **22** # 206

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **E** *Comment Status* **A** *PCS HS*

The PAM4 path doesn't exist for 2.5G/5G. Figure 201-8 only covers 10G

SuggestedRemedy

Split figure 201-8 into 2 figures, one showing the 2.5G/5G and one showing the 10G. The 2.5G/5G eliminates the PAM4 path and the MUX at the right hand side of line 25

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Do the suggested remedy for Figure 201-8.

Also, do the same for Figure 201-9 for the receive path.

See 201_PCS.pdf for proposed new Figures.

Cl **201** *SC* **201.3.2.3** *P* **92** *L* **64** # 310

Razavi, Alireza — Infineon

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

Reference to EEE: Figure 149-18 should be moved to Clause 201, and the EEE-related item should be removed from it.

SuggestedRemedy

See comment.

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.3.2.3** *P* **93** *L* **47** # 177

Wienckowski, Natalie — IVN Solutions LLC / Ethernovia

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

SuggestedRemedy

Change: fifty To: 50

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.3.2.3** *P* **93** *L* **48** # 155

Wienckowski, Natalie — IVN Solutions LLC / Ethernovia

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

no EEE

SuggestedRemedy

Remove reference to Figure 149-19

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.3.2.3** *P* **93** *L* **49** # 178

Wienckowski, Natalie — IVN Solutions LLC / Ethernovia

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

Figure 149-19 is for EEE only.

SuggestedRemedy

Remove: and Figure 149-19

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.3.2.3** *P* **93** *L* **64** # 311

Razavi, Alireza — Infineon

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

Reference to EEE: Figure 149-19 should be moved to Clause 201; EEE will be removed from it.

SuggestedRemedy

See comment.

Response *Response Status* **C**

REJECT.

Added subclause 201.3.2.3

Figure 149-19 is for EEE only, so there is nothing left when this is removed.

Cl **201** *SC* **201.3.2.3** *P* **94** *L* **5** # 37

Jonsson, Ragnar Infineon

Comment Type **E** *Comment Status* **A** *PCS HS*

The paragraph should reference Figure 149-15

SuggestedRemedy

Add reference to Figure 149-15 to the paragraph starting in line 5

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change: When the PCS Synchronization process has obtained synchronization, the RS-FEC frame error ratio (RFER) monitor process monitors the signal quality and asserts hi_rfer to indicate excessive RS-FEC frame errors.

To: When the PCS Synchronization process has obtained synchronization, the RS-FEC frame error ratio (RFER) monitor state diagram shown in Figure 201–15 monitors the received signal for high RS-FEC frame error ratio and asserts hi_rfer to indicate excessive RS-FEC frame errors.

See 201_PCS.pdf.

Grant editors license to insert references to tables and figures where missing from the text.

Cl **201** *SC* **201.3.4** *P* **94** *L* **45** # 312

Razavi, Alireza Infineon

Comment Type **E** *Comment Status* **D** *PCS HS*

Poor readability.

SuggestedRemedy

Remove subclause 201.3.4 and move its content to 201.3.2.3.2. Also copy Equation (149-6) to Clause 201.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The structure is the same as other PHY Clauses, including 149. Both HS and LS refer to the equations in 149.

Cl **201** *SC* **201.3.4** *P* **94** *L* **45** # 317

Razavi, Alireza Infineon

Comment Type **E** *Comment Status* **A** *PCS HS*

Multiple terms for one thing: in Clause 201 these terms refer to the same function (side-stream scrambler, side stream scrambler, PCS scrambler). Same issue for the descrambler.

SuggestedRemedy

Use “PCS scrambler” consistently for all of them.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Do the suggested remedy and also use "PCS descrambler" consistently.

Val to also do the same in 202.

Cl **201** *SC* **201.3.5** *P* **94** *L* **51** # 134

van Dyck, Peter Infineon

Comment Type **T** *Comment Status* **A** *PCS HS*

Due to the HS_PATH change to PAM2 in data mode the timing relationship between the Training frame and the RS-FEC frames has changed for 2.5Gb/s and 5Gb/s.

SuggestedRemedy

Copy text and figures/equations from Clause 149.4.5 to Clause 201.3.5.

Replace
“The timing relationship among training frame, partial frame, RS-FEC frame, superframe, and partial PHY frame count (PFC24) are shown in Figure 149–12.”
with
“For 10Gb/s, the timing relationship among training frame, partial frame, RS-FEC frame, superframe, and partial PHY frame count (PFC24) are shown in Figure 201-???.
For 2.5Gb/s and 5Gb/s, the timing relationship among training frame, partial frame, RS-FEC frame, superframe, and partial PHY frame count (PFC24) are shown in Figure 201-???.”

Note that the first Figure is the same as Figure 149-12. The second Figure is in “Timing_2p5_5.pdf”

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See 201_PCS.pdf for proposed text update.

Cl **201** *SC* **201.3.5.1** *P* **95** *L* **2** # 203

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **R** *PCS HS*

While Tn is generated, formally, the variable passed to the PMA is tx_symb. Same thing for Sn in training mode. Tn appears to be assumed to be what the PMA operates on (and Sn in training mode) , but it is never actually set to the parameter passed. This is also a flaw in the formal specification of clause 149, and possibly 165.

SuggestedRemedy

Change 201.3.5.1 to read:
As specified for MultiGBASE-T1 PHYs in 149.3.5.1. The parameter tx_symb is set to Tn for passing to the PMA when PHY control is in SEND_N mode.
Insert new final sentence to 201.3.5.2 The resulting symbols are transferred to the PMA when PHY control is in SEND_T mode for PAM transmission.

Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **201** *SC* **201.3.5.2** *P* **95** *L* **5** # 315

Razavi, Alireza — Infineon

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

Wrong place for variable definition: the PMA training mode descrambler-polynomials text should be removed, but the definition of variable scr_status should be moved to 149.3.7.2.2 (or the equivalent section in Clause 201).

SuggestedRemedy

See comment.

Response *Response Status* **C**

REJECT.

The variable is defined in 201.2.2.5.1. It is then referenced in other sections to indicate which functions impact it.

Cl **201** *SC* **201.4** *P* **96** *L* **3** # 38

Jonsson, Ragnar — Infineon

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

With the current structure of the document, it would make sense to have Figures 201-10 closer to Figure 201-6

SuggestedRemedy

Move figure 201-10 forward in the document to be closer to Figure 201-6

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Move Figure 201-10 to 201.3.2 where it is referenced.

Cl **201** *SC* **201.4.2.2** *P* **96** *L* **51** # 39

Jonsson, Ragnar — Infineon

Comment Type **E** *Comment Status* **D** *PCS LS*

The text ", set to all 1s, to it" should be removed, because it is not relevant in the context of the current text. Also, if reserved values are required to have a specific value, this needs more discussion.

SuggestedRemedy

Remove the text ", set to all 1s, to it"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: After mapping the eight XGMII transfers to 64B/65B blocks, the subsequent functions of the PCS Transmit process take one group of four 65B blocks and append a 10-bit OAM field followed by six reserved bits, set to all 1s, to it.

To: After mapping the eight XGMII transfers to 64B/65B blocks, the subsequent functions of the PCS Transmit process take one group of four 65B blocks and append a 10-bit OAM field followed by a 6-bit vendor-specific field. When the 6-bit vendor-specific field is not used, it is recommended that it be set to 0x3F.

Cl **201** *SC* **201.4.2.2** *P* **96** *L* **51** # 8

Long, Richard — TE Connectivity

Comment Type **E** *Comment Status* **D** *PCS LS*

Extra verbage "to it" not required

SuggestedRemedy

Change "set to all 1s, to it." to "set to all 1s."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #39.

Cl **201** *SC* **201.4.2.2** *P* **97** *L* **2** # 40

Jonsson, Ragnar — Infineon

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

The text "The symbol period, T, is 1000 / 117.1875 ns." is confusing

SuggestedRemedy

Replace with either "The symbol period, T, is (1 /117.1875)us." or "The symbol period, T, is (1 /117.1875MHz). "

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change: The symbol period, T, is 1000 / 117.1875 ns.

To: The symbol period, T, is (1000 / 117.1875) ns.

Cl **201** *SC* **201.4.2.2** *P* **97** *L* **8** # 41

Jonsson, Ragnar — Infineon

Comment Type **E** *Comment Status* **A** *DME symbols*

The description " vector of zeros at each symbol period" is ambiguous or incorrect.

SuggestedRemedy

Change the text to " vector of Z (see Clause 201.2.2.3.1) at each symbol period"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See #249

Cl **201** *SC* **201.4.2.2** *P* **97** *L* **12** # 42

Jonsson, Ragnar — Infineon

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

Incorrect clause reference to 201.4.5.1

SuggestedRemedy

Replace with correct clause reference

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change: generate a sequence (Tn) defined in 201.4.5.1

To: generate a sequence (Sn) defined in 201.4.5

Cl **201** *SC* **201.4.2.2** *P* **97** *L* **16** # 43

Jonsson, Ragnar — Infineon

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

Incorrect clause reference to 201.5.2.7.

SuggestedRemedy

Change reference to 201.2.6.4

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.2.2** *P* **97** *L* **20** # 44

Jonsson, Ragnar — Infineon

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

The word "the" should be removed from "During transmission, the four blocks"

SuggestedRemedy

Change to "During transmission, four blocks"

Response *Response Status* **C**

ACCEPT.

Changed subclause to 201.4.2.2.

Cl **201** *SC* **201.4.2.2** *P* **97** *L* **32** # 46

Jonsson, Ragnar Infineon

Comment Type **E** *Comment Status* **A** *PCS LS*

The structure of the figure is different from the corresponding figure for HS_PATH in Figure 201-7

SuggestedRemedy

Change the handling of the "Training frame" in the figure to be consistent with how it is done in Figure 201-7

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Changed subclause to 201.4.2.2.

Replace Figure 201-11 with 201-11 in GZ_Comment_205_Fig201-7v4.pdf.

Cl **201** *SC* **201.4.2.2** *P* **97** *L* **35** # 209

van Dyck, Peter Infineon

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

Figure 201-11: The output of the MUX has the wrong name for data transmitted to PMA

SuggestedRemedy

Replace "symb_tx" with "tx_symb"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.2.2.1** *P* **97** *L* **48** # 47

Jonsson, Ragnar Infineon

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

The phrase "and vice versa" is ambiguous and probably wrong.

SuggestedRemedy

Remove the text "and vice versa"

Response *Response Status* **C**

ACCEPT.

Changed subclause to 201.4.2.2.1.

Cl **201** *SC* **201.4.2.2.1** *P* **97** *L* **48** # 48

Jonsson, Ragnar Infineon

Comment Type **E** *Comment Status* **A** *PCS LS*

The entire paragraph starting in line 48 is unclear and does not have a clear purpose in the document.

SuggestedRemedy

The PCS transmit function maps XGMII signals into 65-bit blocks that are inserted into an RS-FEC frame. The PCS receive function extracts the 65-bit blocks from the RS_FEC frame and maps them to the receiver XGMII interface. The PMA training frame synchronization allows establishment of RS-FEC frame and 65B boundaries by the PCS Synchronization process. Blocks and frames are unobservable and have no meaning outside the PCS.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Changed subclause to 201.4.2.2.1.

Change: The PCS maps XGMII signals into 65-bit blocks inserted into an RS-FEC frame, and vice versa, using a 65B RS-FEC coding scheme. The PMA training frame synchronization allows establishment of RS-FEC frame and 65B boundaries by the PCS Synchronization process. Blocks and frames are unobservable and have no meaning outside the PCS.

To: The PCS transmit function maps XGMII signals into 65-bit blocks that are inserted into an RS-FEC frame. The PCS receive function extracts the 65-bit blocks from the RS_FEC frame and maps them to the receiver XGMII interface. The PMA training frame synchronization allows establishment of RS-FEC frame and 65B boundaries by the PCS Synchronization process. Blocks and frames are unobservable and have no meaning outside the PCS.

Cl **201** *SC* **201.4.2.2.2** *P* **98** *L* **10** # 179

Wienckowski, Natalie IVN Solutions LLC / Ethernovia

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

SuggestedRemedy

Remove period by itself on line 10.

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.2.2.2** *P* **98** *L* **30** # 117

Lo, William — Axonne Inc.

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

Missing Line with arrow from RS_FEC to 24-bit Parity

SuggestedRemedy

Draw the missing line

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.2.2.2** *P* **98** *L* **31** # 50

Jonsson, Ragnar — Infineon

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

Missing connection from "RS-FEC encoder" block to "24-bit Parity" block

SuggestedRemedy

Add missing connection

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.2.2.2** *P* **99** *L* **27** # 51

Jonsson, Ragnar — Infineon

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

Arrow from "Descrambler" to "adder" is in the wrong direction.

SuggestedRemedy

Revers the direction of the arrow from "Descrambler" to "adder"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.2.2.2** *P* **99** *L* **28** # 147

Pandey, Sujan — Velinktech

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

Arrow of Descrambler is not correct

SuggestedRemedy

arrow needs to be reversed

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.2.2.3** *P* **99** *L* **36** # 52

Jonsson, Ragnar — Infineon

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

Scope of the sentence "For values shown as binary, the leftmost bit is the first transmitted bit" is not clear.

SuggestedRemedy

Add the text "For Figure 201-12," in front of "For values shown as binary, the leftmost bit is the first transmitted bit"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.2.2.3** *P* **99** *L* **38** # 53

Jonsson, Ragnar — Infineon

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

Not desirable to start a new paragraph (or a sentence) with digits. It also implies that 64B/65B is an encoding without explicitly stating so (64B/65B is also sometimes used to describe the block).

SuggestedRemedy

Change "64B/65B encodes" to "The 64B/65B encoding, encodes"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.2.2.3** *P* **99** *L* **39** # 54

Jonsson, Ragnar — Infineon

Comment Type **E** *Comment Status* **R** *PCS LS*

The paragraph starting on line 38 is stating things that have been stated in other paragraphs and is not really about "Notation conventions"

SuggestedRemedy

Eliminate paragraph and replace it with reference to clause 149.3.2.2.4, if applicable.

Response *Response Status* **C**

REJECT.

This is common to other 802.3 Clauses, including 149, which this is based on.

Cl **201** *SC* **201.4.2.2.3** *P* **99** *L* **44** # 55

Jonsson, Ragnar Infineon

Comment Type **E** *Comment Status* **R** *EZ - WD*

In accurate to use the text "eight characters"

SuggestedRemedy

Change "eight characters" to "eight octets".

Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **201** *SC* **201.4.2.2.3** *P* **99** *L* **51** # 135

van Dyck, Peter Infineon

Comment Type **E** *Comment Status* **A** *EZ - 202*

tx_coded and rx_coded are incorrectly defined in the text.

SuggestedRemedy

Replace "tx_coded<31:0>" with "tx_coded<64:0>"
Replace "rx_coded<31:0>" with "rx_coded<64:0>"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Do the suggested remedy as described on P99/L51.

Val to do the suggested remedy as described on P178L17 in Clause 202.

Cl **201** *SC* **201.4.2.2.5** *P* **100** *L* **8** # 57

Jonsson, Ragnar Infineon

Comment Type **E** *Comment Status* **R** *EZ - 57*

The paragraph starting on line 8 probably does not bring any value to the document.

SuggestedRemedy

Remove the paragraph starting on line 8.

Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **201** *SC* **201.4.2.2.5** *P* **100** *L* **8** # 56

Jonsson, Ragnar Infineon

Comment Type **E** *Comment Status* **R** *EZ - WD*

The text incorrectly states that "The XGMII encodes a control character into an octet" which is not correct. This text is unnecessary and is probably best removed.

SuggestedRemedy

Remove the sentence "The XGMII encodes a control character into an octet (an eightbit value)."

Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **201** *SC* **201.4.2.2.5** *P* **100** *L* **72** # 314

Razavi, Alireza Infineon

Comment Type **E** *Comment Status* **A** *PCS LS*

Reference to EEE: Table 149-2 should be moved to Clause 201 and references to LPI and EEE removed from it.

SuggestedRemedy

See comment.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add new sentence after "Table 149-2.".

The LPI Control character is not used by the 100M+MultiGBASE-T1/V1 PHY.

Cl **201** *SC* **201.4.2.2.12** *P* **100** *L* **44** # 58

Jonsson, Ragnar Infineon

Comment Type **E** *Comment Status* **R** *PCS LS*

The paragraph starting in line 44 does not appear to serve any particular purpose in the document. If it does, it should be clarified what the essential information are in the paragraph.

SuggestedRemedy

Remove the paragraph starting on line 44 or clarify what is specified in the paragraph.

Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **201** *SC* **201.4.2.2.13** *P* **101** *L* **6** # 60

Jonsson, Ragnar Infineon

Comment Type **E** *Comment Status* **D** *PCS LS*

The text "set to all 1s", is unnecessary and incorrect.

SuggestedRemedy

The whole paragraph should be removed, but at minimum the text "set to all 1s" should be removed.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: six reserved bits, set to all 1s,

To: six vendor-specific bits,

Cl **201** *SC* **201.4.2.2.13** *P* **101** *L* **6** # 59

Jonsson, Ragnar Infineon

Comment Type **E** *Comment Status* **D** *PCS LS*

The paragraphs starting at line 6 and line 10 serve no purpose in the document. They also incorrectly sate a specific value for the reserved bits.

SuggestedRemedy

Remove the paragraphs starting at line 6 and line 10.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #60.

Cl **201** *SC* **201.4.2.2.13** *P* **101** *L* **11** # 61

Jonsson, Ragnar Infineon

Comment Type **E** *Comment Status* **D** *PCS LS*

The text "set to all 1s", is unnecessary and incorrect.

SuggestedRemedy

The whole paragraph should be removed, but at minimum the text "set to all 1s" should be removed.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: six reserved bits, set to all 1s,

To: six vendor-specific bits,

Cl **201** *SC* **201.4.2.2.14** *P* **101** *L* **15** # 62

Jonsson, Ragnar Infineon

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

The statement "The group of 300 bits are encoded using a Reed-Solomon encoder" is not correct. There are 276 bits encoded, and 24-bit parity, resulting in a total of 300 bits.

SuggestedRemedy

Change "The group of 300 bits are encoded using a Reed-Solomon encoder" to "The data frame is encoded using a Reed-Solomon encoder"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.2.2.14** *P* **101** *L* **18** # 63

Jonsson, Ragnar Infineon

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

The text "For the purposes of this clause" looks like an unnecessary qualification of the statement.

SuggestedRemedy

Remove the text "For the purposes of this clause"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.2.2.14** *P* **101** *L* **19** # 137

Maguire, Valerie Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

The third term in some Reed-Solomon codes is stated incorrectly.

SuggestedRemedy

P101, L19 - Replace, "RS-FEC(50,46,2^6)" with "RS-FEC(50,46,6)"

P160, L2 - Replace, "RS-FEC(130,124,2^8)" with "RS-FEC(130,124,8)"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.2.2.14** *P* **101** *L* **53** # 64

Jonsson, Ragnar Infineon

Comment Type **E** *Comment Status* **R** *EZ - WD*

The paragraph starting in line 53 is redundant and has better description at line 7 on page 102

SuggestedRemedy

Remove the paragraph starting on line 53

Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **201** *SC* **201.4.2.2.15** *P* **102** *L* **51** # 65

Jonsson, Ragnar Infineon

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

The LR_PATH does not really have superframe, so better to use the word "frame".

SuggestedRemedy

Replace "superframe" with "frame"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.2.2.15** *P* **103** *L* **4** # 204

Zimmerman, George CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **A** *PCS LS*

While An is generated for the low speed direction, formally, the variable passed to the PMA is tx_symb. Tn appears to be assumed to be what the PMA operates on, but it is never sent. This is also a flaw in the formal specification of clause 149, and possibly 165.

SuggestedRemedy

Insert new final sentence to 201.4.2.2.15:
The parameter tx_symb is set to An for passing to the PMA when PHY control is in SEND_N mode.
Insert new final sentence to 201.4.5.1 The resulting symbols are transferred to the PMA when PHY control is in SEND_T mode for DME encoding and transmission.

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.2.2** *P* **97** *L* **21** # 45

Jonsson, Ragnar Infineon

Comment Type **E** *Comment Status* **D** *PCS LS*

Incorrect description: "followed by six 1s to" because there is no 1 second inserted at this point. This is also imprecise because the bits are "reserved", not necessarily with fixed values.

SuggestedRemedy

change text to "followed by six reserved bits to"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Changed subclause to 201.4.2.2.

Change: six 1s
To: a 6-bit vendor-specific field

Cl **201** *SC* **201.4.2.2.1** *P* **97** *L* **54** # 49

Jonsson, Ragnar Infineon

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

Incorrect reference to clause 149.3.2.2.2.

SuggestedRemedy

Change reference to Clause 201.4.2.2.2.

Response *Response Status* **C**

ACCEPT.

Changed subclause to 201.4.2.2.1.

Cl **201** *SC* **201.4.2.3.1** *P* **104** *L* **1** # 66

Jonsson, Ragnar Infineon

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

The word "It" lacks clarity

SuggestedRemedy

Replace the word "It" with "PCS receive"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.2.3.2** *P* **104** *L* **6** # 67

Jonsson, Ragnar Infineon

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

The in this paragraph is inaccurate and not as good as the wording in Clause 2011.3.2.3.2.

SuggestedRemedy

Replace the whole text in this section with "The descrambling process is as specified in 149.3.2.3.2, except Equation (149-5) shall be applied regardless of whether PHY_S is LEADER or FOLLOWER."

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.2.3.3** *P* **104** *L* **23** # 68

Jonsson, Ragnar Infineon

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

This is the only mention of R_BLOCK_TYPE in Clause 201. Need reference to where R_BLOCK_TYPE is defined.

SuggestedRemedy

Reference definition of R_BLOCK_TYPE in 149.3.7.2.4

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.4** *P* **104** *L* **39** # 69

Jonsson, Ragnar Infineon

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

Need to clarify that Equation (149-5) is used regardless of whether PHY_S is LEADER or FOLLOWER

SuggestedRemedy

At the end of the line add "regardless of whether PHY_S is LEADER or FOLLOWER"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.5** *P* **105** *L* **1** # 9

Long, Richard TE Connectivity

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

Infofield appears to be capitalized everywhere in the document except page 105, line 1 and line 9

SuggestedRemedy

Change "infofield" to "Infofield" and also on line 9

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.5** *P* **105** *L* **5** # 132

van Dyck, Peter Infineon

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

Clean up Figure 201-15.

SuggestedRemedy

Update Figure 201-15 as follows: Move C/D to the second row and remove first row

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.5** *P* **105** *L* **11** # 130

van Dyck, Peter Infineon

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

Value of reserved bits in infofield is missing.

SuggestedRemedy

Add the following text at Page 105, Line 11:
"Reserved bits in the infofield represent unused
values and shall be set to zero on transmit and ignored when received by the link partner."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add the following text at Page 105, Line 11:
"Reserved bits in the Infofield represent unused values and shall be set to zero on transmit and ignored when received by the link partner."

Cl **201** *SC* **201.4.5** *P* **105** *L* **11** # 131

van Dyck, Peter Infineon

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

Clear definition of infofield transmit bit ordering missing.

SuggestedRemedy

Add the following text at Page 105, Line 11:
"The fields in the infofield are transmitted from left to right starting with C/D. The Block field as well as fields D0 through D6 are transmitted LSB first."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add the following text at Page 105, Line 11:
"The fields in the Infofield are transmitted from left to right starting with C/D. The Block field as well as fields D0 through D6 are transmitted LSB first."

Cl **201** *SC* **201.4.5** *P* **105** *L* **12** # 180

Wienckowski, Natalie IVN Solutions LLC / Ethernovia

Comment Type **T** *Comment Status* **R** *EZ - training*

Not all PHY capability fields specified in Clause 149 apply to th LS_PATH PCS

SuggestedRemedy

Change: The message and PHY capability fields are as specified in 149.4.2.4.4 and 149.4.2.4.5.
To: The message and PHY capability fields are as specified in 149.4.2.4.4 and 149.4.2.4.5; however, only Oct10<7> (OAMen) applies.

Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **201** *SC* **201.4.5** *P* **105** *L* **16** # 192

Zimmerman, George CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **A** *EZ - OAM*

It is unclear whether the setting of OAM bits to 0s during training is an automatic function of the PHY or a requirement on the user. Either way, the existing text is incorrect. I presume it should be an automatic function.

SuggestedRemedy

Change "Note that the OAM (if present) shall be set to all 0s during training." to "During training, any OAM channel contents (if present) shall be ignored, and zeros transmitted in their place."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See #133.

Cl **201** *SC* **201.4.5** *P* **105** *L* **16** # 129

van Dyck, Peter Infineon

Comment Type **E** *Comment Status* **A** *EZ - OAM*

OAM bits shall always be set to 0s during training regardless of OAM being implemented. It currently states "if present".

SuggestedRemedy

Remove "(if present)"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See #133.

Cl **201** *SC* **201.4.5** *P* **105** *L* **16** # 70

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **A** *EZ - OAM*

There is no need to specify the value of the OAM bits in the training frame, since it should be ignored. Specifying these values can lead to interoperability issues if receiver relies on these values having specific values.

SuggestedRemedy

Remove the sentence "Note that the OAM (if present) shall be set to all 0s during training"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See #133.

Cl **201** *SC* **201.4.5** *P* **105** *L* **17** # 133

van Dyck, Peter Infineon

Comment Type **T** *Comment Status* **A** *EZ - OAM*

Clarifying text regarding assembly and transmission of training frame is missing.

SuggestedRemedy

Add the following text at Page 105, Line 17, after "Note that the OAM shall be set to all 0s during training.":
"64B/65B blocks of the training frame are processed identical to tx_coded blocks in Clause 201.1.3.2 and the resulting tx_group4x65B block is transmitted as described in Clause 201.4.2.2.14."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

P105L14
Change: The four training frame 64B/65B blocks are then concatenated with the sixteen OAM/Reserved bits and the 24 FEC parity bits, as shown in Figure 201–16. Note that the OAM (if present) shall be set to all 0s during training.

To: The four 65-bit blocks of the training frame, tx_group4x65B block, as defined in 201.1.3.2, are transmitted as described in 201.4.2.2.14. The four training frame 65-bit blocks are concatenated with the sixteen bits of the OAM/Reserved bit fields and the 24 RS-FEC parity bits, as shown in Figure 201–16. Zeros shall be transmitted in the OAM field of the training frame. Reserved bits shall be transmitted as defined by 201.xx. RS-FEC parity bits are generated from the training frame contents by the RS-FEC encoder specified in 201.4.2.2.14.

Editorial license to correct references.

Cl **201** *SC* **201.4.5** *P* **105** *L* **20** # 128

van Dyck, Peter Infineon

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

In Figure 201-16, extra space "info field"

SuggestedRemedy

Replace with "infofield"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace with "Infofield"

Cl **201** *SC* **201.4.5** *P* **105** *L* **24** # 71

Jonsson, Ragnar Infineon

Comment Type **E** *Comment Status* **D** *PCS LS*

The figures should not specify the values for the Reserved bits.

SuggestedRemedy

Remove "1's" from the text "6-bit 1's"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

P105/L14 Change: The four training frame 64B/65B blocks are then concatenated with the sixteen OAM/Reserved bits and the
24 FEC parity bits, as shown in Figure 201–16.

To: The four training frame 64B/65B blocks are then concatenated with the 10 OAM bits, six vendor-specific bits and the 24 FEC parity bits, as shown in Figure 201–16.

Change: "6-bit 1's" in Figure 201-16.
To: 6-bit vendor-specific

Change "res" in the box with "v-s" in Figure 201-16

Cl **201** *SC* **201.4.5** *P* **105** *L* **26** # 127

van Dyck, Peter Infineon

Comment Type **E** *Comment Status* **A** *EZ - infofield*

Remove Infofield table from Figure 201-16, it's already depicted in Figure 201-15

SuggestedRemedy

See comment

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remove the table with the infofield and add text to the arrow "See Figure 201-15".

Cl **201** *SC* **201.4.5** *P* **105** *L* **35** # 30

Tan, Yuxuan Motorcomm

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

Typo

SuggestedRemedy

Change "Scnn[0]" in Equation (201-6) to "Scrn[0]"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.5** *P* **105** *L* **37** # 72

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **D** *PCS LS*

There is no need to specify the value of the Reserved bits in the training frame, since it should be ignored. Specifying these values can lead to interoperability issues if receiver relies on these values having specific values.

SuggestedRemedy

Replace "6bit 1s" with "Reserved"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: 6bit 1s
To: 6bit v-s

Cl **201** *SC* **201.4.5.1** *P* **105** *L* **43** # 316

Razavi, Alireza Infineon

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

Wrong place for variable definition: the PMA training mode descrambler-polynomials text should be removed, but the definition of variable scr_status should be moved to 149.3.7.2.2 (or the equivalent section in Clause 201).

SuggestedRemedy

See comment.

Response *Response Status* **C**

REJECT.

The variable is defined in 201.2.2.5.1. It is then referenced in other sections to indicate which functions impact it.

Cl **201** *SC* **201.4.6** *P* **105** *L* **51** # 181

Wienckowski, Natalie IVN Solutions LLC / Ethernovia

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

The statement doesn't make sense.

SuggestedRemedy

Change: items enclosed in the dotted lines are not present.
To: items enclosed in the dotted lines are not present in the MultiG+100M/100M+MultiGBASE-T1/V1 PHY.

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.6** *P* **105** *L* **51** # 73

Jonsson, Ragnar Infineon

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

The wording "As specified" lacks clarity.

SuggestedRemedy

Add at the beginning of the line "Detailed functions and state diagrams are"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.4.8** *P* **106** *L* **38** # 321

Razavi, Alireza Infineon

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

EEE is not defined. The PHY health part of OAM should be updated.

SuggestedRemedy

Copy 149.3.9.2.5 into Clause 201 and remove the 00 and 01 options.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change 201.3.8 and 201.4.8 to text shown in 201_OAM.pdf.

Adjust references as needed based on other text changes.

Cl **201** *SC* **201.4.8** *P* **106** *L* **39** # 74

Jonsson, Ragnar Infineon

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

The wording "As specified" lacks clarity.

SuggestedRemedy

Add at the beginning of the line "The OAM is"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.5.2.1** *P* **108** *L* **5** # 75

Jonsson, Ragnar Infineon

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

The 100 ms is too long, this should only be 50ms.

SuggestedRemedy

Change "100 ms" to "50 ms".

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.5.2.1** *P* **108** *L* **5** # 265

Fuller, Paul Infineon

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

100ms should be 50ms

SuggestedRemedy

100ms should be 50ms

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.5.2.2** *P* **108** *L* **8** # 150

Wienckowski, Natalie IVN Solutions LLC / Ethernovia

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

Combine PMA Transmit function, HS_PATH and PMA Transmit function, LS_PATH into PMA Transmit function. Remove lpi_tx_mode statement which relates to EEE.

SuggestedRemedy

Replace 201.5.2.2 and 201.5.2.3 with new 201.5.2.2: See PMA_Transmit_function.pdf
201.5.2.3.1 becomes 201.5.2.2.1.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See PMA_Transmit_function_v2.pdf.

Cl **201** *SC* **201.5.2.2** *P* **108** *L* **17** # 118

Lo, William Axonne Inc.

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

The is no EEE anymore

SuggestedRemedy

Delete the sectence:
When lpi_tx_mode = ALERT, the PN sequence defined in 201.5.2.10 shall be used in place of tx_symb as the data source for PMA Transmit.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Included in #150.

Cl **201** *SC* **201.5.2.2** *P* **108** *L* **17** # 31

Tan, Yuxuan Motorcomm

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

EEE is removed from the document.

SuggestedRemedy

Delete "When lpi_tx_mode=ALERT, the PN sequence defined in 201.5.2.10 shall be used in place of tx_symb as the data source for PMA Transmit."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Included in #150.

Cl **201** *SC* **201.5.2.2** *P* **108** *L* **17** # 76

Jonsson, Ragnar Infineon

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

EEE is not supported so reference to ALERT and LPI should be removed.

SuggestedRemedy

Remove the sentence: "When lpi_tx_mode = ALERT, the PN sequence defined in 201.5.2.10 shall be used in place of tx_symb as the data source for PMA Transmit."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Included in #150.

Cl **201** *SC* **201.5.2.2** *P* **108** *L* **23** # 10

Long, Richard — TE Connectivity

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

Typo

SuggestedRemedy

Change "LEADER-FPOLLOWER" to "LEADER-FOLLOWER"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.5.2.2** *P* **108** *L* **23** # 77

Jonsson, Ragnar — Infineon

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

Typo in "FPOLLOWER"

SuggestedRemedy

Replace "FPOLLOWER" with "FOLLOWER"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.5.2.2** *P* **108** *L* **31** # 207

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

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

"this function" is ambiguous - is it the PMA Transmit Fault function in the previous paragraph?. What appears to be meant is the PMA_transmit_disable variable.

SuggestedRemedy

Replace "this function shall turn off the transmitter" , with "the transmitter shall be turned off"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See PMA_Transmit_function_v2.pdf.

Cl **201** *SC* **201.5.2.2** *P* **108** *L* **32** # 78

Jonsson, Ragnar — Infineon

Comment Type **T** *Comment Status* **D** *PMA transmit*

For PoDL and PoC implementations the -53dBm results in implicit limit on noise introduced by the power delivery circuit. The -53dBm value needs discussion by the task force.

SuggestedRemedy

This level needs discussion by the task force, in the context of PoC.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

In PMA_Transmit_function_v2.pdf

Delete: When the PMA_transmit_disable variable is set to TRUE, the transmitter shall be turned off so that the average launch power of the transmitter is less than –53 dBm.

P86L20: Change " 0" to "Z"

P130L37, add a new sentence at the end of the paragraph: When tx_symb is “Z” the transmit signal at the MDI is nominally zero, and the transmit signal measured at frequencies above 10MHz shall be less than -36dBm.

Cl **201** *SC* **201.5.2.3** *P* **109** *L* **5** # 79

Jonsson, Ragnar — Infineon

Comment Type **T** *Comment Status* **D** *PMA transmit*

For PoDL and PoC implementations the -53dBm results in implicit limit on noise introduced by the power delivery circuit. The -53dBm value needs discussion by the task force.

SuggestedRemedy

This level needs discussion by the task force, in the context of PoC.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

In PMA_Transmit_function_v2.pdf

Delete: When the PMA_transmit_disable variable is set to TRUE, the transmitter shall be turned off so that the average launch power of the transmitter is less than –53 dBm.

P138L20, add a new sentence at the end of the paragraph: When tx_symb is “Z” the transmit signal at the MDI is nominally zero, and the transmit signal measured at frequencies above 10MHz shall be less than -36dBm.

P109L11, add a new sentence at the end of the paragraph: When tx_mode is SEND_Z, see 201.7.2.5 for the encoding of "Z".

Cl **201** *SC* **201.5.2.3.1** *P* **109** *L* **10** # 80

Jonsson, Ragnar Infineon

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

Better to specify behavior based on condition, rather than absence of condition.

SuggestedRemedy

Replace "not SEND_Z" with "SEND_T or SEND_N"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.5.2.3.1** *P* **109** *L* **13** # 182

Wienckowski, Natalie IVN Solutions LLC / Ethernovia

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

A shall is needed.

SuggestedRemedy

Change: An, is encoded using Differential Manchester Encoding (DME).
To: An, shall be encoded using Differential Manchester Encoding (DME).

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See #193

Cl **201** *SC* **201.5.2.3.1** *P* **109** *L* **13** # 193

Zimmerman, George CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

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

There is no 'shall' to do DME encoding, although there are requirements on the definition of what DME encoding is.

SuggestedRemedy

Change "The scrambled data bit An is encoded using Differential Manchester Encoding (DME)." to
"The scrambled data bit, An, shall be encoded using Differential Manchester Encoding (DME) as defined by the following rules:"
Change "shall"s on lines 17, 18, and 19 (clock transitions, data transitions, and otherwise) to "is" (3 occurences)

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.5.2.3.1** *P* **109** *L* **16** # 81

Jonsson, Ragnar Infineon

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

Unclear language about "start of each bit", implying to "start of bit period"

SuggestedRemedy

Add the word "period" or the word "symbol" at the end of line 16

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change to: start of each bit symbol

Cl **201** *SC* **201.5.2.3.1** *P* **109** *L* **19** # 82

Jonsson, Ragnar Infineon

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

Unclear language about "until the next bit", implying to "until the next bit period"

SuggestedRemedy

Add the word "period" or the word "symbol" at the end of line 19

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change to: start of each bit symbol

Cl **201** *SC* **201.5.2.3.1** *P* **109** *L* **20** # 319

Razavi, Alireza Infineon

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

The information in this line is redundant.

SuggestedRemedy

Remove this line, Figure 201-18, and Table 201-4.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See #194

Cl **201** *SC* **201.5.2.3.1** *P* **109** *L* **24** # 250

Muma, Scott — Microchip

Comment Type **T** *Comment Status* **A** *DME symbols*

The DME encoding of "Z" should also be defined.

SuggestedRemedy

Consider incorporating second part of Figure 147-13 which shows High-Z state.
Consider adding text similar to Clause 147 above the figure explaining DME encoding of "Z": If the tx_sym parameter value is the special symbol 'Z', the PMA shall: for -T1 MDI drive MDI+ and MDI- to the same voltage with 100-ohm nominal impedance, so that their difference is 0V; for -V1 MDI drive MDI to the midpoint voltage with 50-ohm nominal impedance.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See #78 & #79.

Cl **201** *SC* **201.5.2.3.1** *P* **109** *L* **33** # 194

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

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

There is no shall calling out the timings in Table 201-4.

SuggestedRemedy

Change "See Figure 201-18 and Table 201-4." to "Timing of the DME symbols shall be as shown in Table 201-4 (See Figure 201-18)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See #123

Cl **201** *SC* **201.5.2.3.1** *P* **109** *L* **38** # 83

Jonsson, Ragnar — Infineon

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

There is inconsistency between the +/-100ppm in Table 201-4 and the +/-50ppm in clause 201.6.2.6

SuggestedRemedy

Keep the +/-100ppm in Table 201-4 and change the +/-50ppm value in line 3 of page 133 to +/-100ppm.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

P133L3
Change: +/- 50 ppm
To: +/- 100 ppm

Cl **201** *SC* **201.5.2.3.1** *P* **109** *L* **45** # 123

Lo, William — Axonne Inc.

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

This variation is already addressed in 201.5.2.10

SuggestedRemedy

Remove the editor's note and add:
The DME encoding timing may be relaxed per 201.5.2.10 when the device is a FOLLOWER while in PHY Link Synchronization phase of operation.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Remove Editor's note.

Remove minimum value and maximum value columns from Table 201-4.

Add a note to Table 201-4 that states:
See 201.6.2.6 and 201.7.2.7 for details on bit timing tolerance.

Cl **201** *SC* **201.5.2.3.1** *P* **109** *L* **45** # 183

Wienckowski, Natalie — IVN Solutions LLC / Ethernovia

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

SuggestedRemedy

Delete Editor's note

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.5.2.4** *P* **110** *L* **1** # 151

Wienckowski, Natalie — IVN Solutions LLC / Ethernovia

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

Combine PMA Receive function, HS_PATH and PMA Receive function, LS_PATH into PMA Transmit function.

SuggestedRemedy

Replace 201.5.2.4 and 201.5.2.5 with new 201.5.2.3: See PMA_Receive_function.pdf

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See PMA_Receive_function_v2.pdf

Cl **201** *SC* **201.5.2.4** *P* **110** *L* **21** # 85

Jonsson, Ragnar — Infineon

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

The polarity swap should be applied to both -T1 and -V1, otherwise we complicate the implementation and loose functionality.

SuggestedRemedy

Remove the words "for -T1".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See PMA_Receive_function_v2.pdf

Cl **201** *SC* **201.5.2.5** *P* **110** *L* **29** # 86

Jonsson, Ragnar — Infineon

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

In accurate or unusual use of the word "comprises", because it is not followed by full "listing" of what comprises the "PMA Receive function"

SuggestedRemedy

Change "comprises" to "includes".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See PMA_Receive_function_v2.pdf

Cl **201** *SC* **201.5.2.5** *P* **110** *L* **33** # 248

Muma, Scott — Microchip

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

Typo in exponent, missing minus sign.

SuggestedRemedy

Change 2e10 to 2e-10 (see P110L8 for similar but correct format).

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.5.2.5** *P* **110** *L* **33** # 32

Tan, Yuxuan — Motorcomm

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

Typo

SuggestedRemedy

Change "2*1010" to "2*10-10".

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.5.2.5** *P* **110** *L* **42** # 87

Jonsson, Ragnar
Infineon

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

Since DME is immune to polarity swap, no detection of polarity swap is needed (or even possible).

SuggestedRemedy

Remove the sentence "The receiver uses the sequence of symbols during the training sequence to detect and correct for pair polarity swaps"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.5.2.5** *P* **110** *L* **43** # 33

Tan, Yuxuan
Motorcomm

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

Keep consistent with the statement for HS_PATH.

SuggestedRemedy

Change "correct for pair polarity swaps." to "correct for pair polarity swaps for -T1."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See #87

Cl **201** *SC* **201.5.2.5** *P* **110** *L* **46** # 11

Long, Richard
TE Connectivity

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

Line 46 looks like an extra line break inserted in the paragraph

SuggestedRemedy

Remove blank line 46

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.5.2.6** *P* **111** *L* **1** # 88

Jonsson, Ragnar
Infineon

Comment Type **E** *Comment Status* **R** *PHY Cntrl*

Almost all the text on page 111 can be removed. It describes almost exactly the same behavior as is defined in Clause 149.4.2.4, so it would be better to simply reference this clause for the definition of the infofield.

SuggestedRemedy

Remove the text on page 111 and reference Clause 149.4.2.4 with the following clarification: "The link partner is not required to decode every IF transmitted but is required to decode IFs at a rate that enables the correct actions prior to the transition from training frame to data frame format."

Response *Response Status* **C**

REJECT.

We have been bringing in text from 149 anytime there is an exception to the text.

Cl **201** *SC* **201.5.2.6** *P* **111** *L* **8** # 89

Jonsson, Ragnar
Infineon

Comment Type **E** *Comment Status* **A** *PHY Cntrl*

The condition "Infofield shall be transmitted at least 256 times" applies equally to both directions.

SuggestedRemedy

At the end of line 9, add "for both the HS_PATH and the LS_PATH"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change: Infofield shall be transmitted at least 256 times with each change to octets 7 to 10.

To: For 10G and 5G, Infofield shall be transmitted at least 256 times with each change to octets 7 to 10. For 2.5G, Infofield shall be transmitted at least 128 times with each change to octets 7 to 10.

Also change to 128 times for 100M in 201_LS_PHY_Cntrl.pdf.

Cl **201** *SC* **201.5.2.6** *P* **111** *L* **9** # 121

Lo, William — Axonne Inc.

Comment Type **T** *Comment Status* **D** *PHY Cntrl*

Need more precise definition of infofield complete

SuggestedRemedy

Add the following sentence in line 9.
infofield_complete is set to TRUE when the infofield is transmitted sufficient number of times. infofield_complete is immediately set to FALSE when a change to octets 7 to 10 occurs. infofield_complete can also be set to FALSE during state transitions in the PHY control state diagram.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See #89.

Cl **201** *SC* **201.5.2.6.4** *P* **112** *L* **1** # 90

Jonsson, Ragnar — Infineon

Comment Type **E** *Comment Status* **R** *PHY Cntrl*

The whole text in clause 201.5.2.6.4 can be replace with a reference to clause 149.4.2.4.4 (see also comment on page 111)

SuggestedRemedy

Remove the text in clause 201.5.2.6.4 and replace with reference to 149.4.2.4.4

Response *Response Status* **C**

REJECT.

Removing this would reduce readability as the surrounding sections have been copied in as they required changes for 3dm.

Cl **201** *SC* **201.5.2.6.5** *P* **112** *L* **51** # 91

Jonsson, Ragnar — Infineon

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

This the term "MultiGBASE-T1" should be replace with the appropriate 802.3dm nomenclature.

SuggestedRemedy

Remove the word "MultiGBASE-T1".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See 201_OAM.pdf for new subclause text.

Cl **201** *SC* **201.5.2.6.5** *P* **112** *L* **52** # 92

Jonsson, Ragnar — Infineon

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

The text incorrectly refers to " two optional capabilities", while the current text describes three capabilities: OAMen, PrecodeSel, and InterleaverDepth. However, only the OAMen capability is applicable in the HS direction, the other two do not apply.

SuggestedRemedy

change the text "support of these two optional capabilities" to "support of optional capabilities"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.5.2.6.5** *P* **113** *L* **3** # 320

Razavi, Alireza — Infineon

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

For the high data-rate info-field, interleavedDepth and PrecodedSet should be removed, since they are not defined for the LDR path.

SuggestedRemedy

See comment.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See #93

Cl **201** *SC* **201.5.2.6.5** *P* **113** *L* **7** # 93

Jonsson, Ragnar — Infineon

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

Transmitting the "PrecodeSel" and "InterleaverDepth" from PHY_S to PHY_D is meaningless, because these are requesting behaviors that are not supported in the LS_PATH. Therefore they should be removed from the HS_PATH capability list.

SuggestedRemedy

Remove "PrecodeSel" and "InterleaverDepth" from Table 201-7 and the text below the table.

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.5.2.6.5** *P* **113** *L* **15** # 94

Jonsson, Ragnar Infineon

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

This the term "MultiGBASE-T1" should be replace with the appropriate 802.3dm nomenclature.

SuggestedRemedy

Remove the word "MultiGBASE-T1".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See 201_OAM.pdf for new subclause text.

Cl **201** *SC* **201.5.2.6.6** *P* **113** *L* **28** # 95

Jonsson, Ragnar Infineon

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

The reference to PAM2 to PAM4 transition does not properly describe the transition from SEND_T to SEND_N for 2.5Gbps and 5Gbps.

SuggestedRemedy

Replace "transmitter switches from PAM2 to PAM4" with "transmitter switches from SEND_T to SEND_N"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.5.2.6.7** *P* **113** *L* **36** # 96

Jonsson, Ragnar Infineon

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

There is no condition defined that would cause "When PMA_state<7:6> is greater than 01" to be true. Therefore, this whole clause is redundant.

SuggestedRemedy

Remove Clause 201.5.2.6.7.

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.5.2.7** *P* **114** *L* **36** # 318

Razavi, Alireza Infineon

Comment Type **T** *Comment Status* **A** *PHY Cntrl*

This subclause should be rewritten.

SuggestedRemedy

Make it similar to 201.5.2.6, with these changes: (1) remove PFC24 and DataSwPFC24 (replace with Reserved infofields); (2) remove 201.5.2.6.3; (3) remove 201.5.2.6.6.2; (4) remove CRC16 (replace with Reserved fields); (5) remove 201.5.2.6.8.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Implement text in 201_LS_PHY_Cntrl.pdf.
Note: This may be modified by additional comments.

Also,
Change: The structure of the special control block is as shown in Figure 201–15.

To: The structure of the infofield is shown in "Figure 201-23 of 201_L_PHY_Cntrl.pdf".

Move Figure 201-15 to "Figure 201-23 of 201_LS_PHY_Cntrl.pdf".

P105L13
Change : The message and PHY capability fields are as specified in 149.4.2.4.4 and 149.4.2.4.5.

Change: The message and PHY capability fields are as specified in 201.5.2.7.3 and 201.5.2.7.4. (References as shown in 201_LS_PHY_Cntrl.pdf.)

Cl **201** *SC* **201.5.2.7** *P* **114** *L* **38** # 98

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **A** *PHY Cntrl*

The description in this clause and Clause 201.5.2.6.5 do not take into account the asymmetric nature of the link and that the capability bits are not symmetric. All the bits in Clause 201.5.2.6.5 apply to Clause 201.5.2.7, but they do not all apply to 201.5.2.6.5.

SuggestedRemedy

Move the description of Capability bits under Clause 201.5.2.7, and clearly state which bits apply to the HS_PATH as well.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See #318

See 201_LS_PHY_Cntrl.pdf for new subclause text.

Cl **201** *SC* **201.5.2.7** *P* **114** *L* **38** # 97

Jonsson, Ragnar Infineon

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

Clause 201.5.2.6.4 is about Message Field, not capability bits.

SuggestedRemedy

Remove reference to 201.5.2.6.4

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.5.2.7** *P* **114** *L* **40** # 99

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **R** *PHY Cntrl*

The text "All reserved fields shall be set to 0" is does not have a clear scope, but presumably applies to the "Message and PHY Capability". Specifying specific values for the Reserved bits serves no purpose and can lead to interoperability issues if receiver relies on these values having specific values.

SuggestedRemedy

Remove the text "All reserved fields shall be set to 0."

Response *Response Status* **C**

REJECT.

If you look at other Clauses in 802.3, they always state what the reserved bits are set to, but don't have requirements as to what they are read as.

Cl **201** *SC* **201.5.2.8.1** *P* **114** *L* **53** # 100

Jonsson, Ragnar Infineon

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

The Auto-Negotiation must also provide methods to identify PHY_S vs PHY_D

SuggestedRemedy

Change the text "the source of control (via link_control) and LEADER-FOLLOWER" to "the source of control (via link_control), PHY_D_PHY_S, and LEADER-FOLLOWER"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: the source of control (via link_control) and LEADER-FOLLOWER

to: the source of control (via link_control), PHY_D, PHY_S, and LEADER-FOLLOWER

Cl **201** *SC* **201.5.2.8.1** *P* **115** *L* **8** # 101

Jonsson, Ragnar Infineon

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

This text and Figure 201-22 should be updated to send the PHY back to Link Sync if error is detected during training.

SuggestedRemedy

Change "SILENT state" to "TRAINING_FAILURE state"

Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Duplicate comment

Cl **201** *SC* **201.5.2.8.1** *P* **115** *L* **17** # 102

Jonsson, Ragnar Infineon

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

The training time should be cut in half.

SuggestedRemedy

In tables 201-110 and 201-11, change "40" to "20" and "95.975" to "45.975"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

P115L9
Change: The startup timing shall comply with Table 201–10 for LEADER and Table 201–11 for FOLLOWER. See Table 201–1 for the definition of S.

To: The startup timing shall comply with Table 201–10 for PHY_S as LEADER and Table 201–11 for PHY_D as LEADER.

Change the title of Table 201-10 to: Startup timing maximums for PHY_S as LEADER and PHY_D as FOLLOWER

Change the title of Table 201-11 to: Startup timing maximums for PHY_D as LEADER and PHY_S as FOLLOWER

Replace tables with tables in startup_tables.jpg.

Cl **201** *SC* **201.5.2.8.1** *P* **115** *L* **23** # 266

Fuller, Paul Infineon

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

97ms should be 50ms

SuggestedRemedy

97ms should be 50ms

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See #102.

Cl **201** *SC* **201.5.2.8.1** *P* **115** *L* **36** # 267

Fuller, Paul Infineon

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

97ms should be 50ms

SuggestedRemedy

97ms should be 50ms

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See #102.

Cl **201** *SC* **201.5.2.8.2** *P* **116** *L* **6** # 103

Jonsson, Ragnar Infineon

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

The definition of "infofield_complete" applies equally in both directions.

SuggestedRemedy

Remove the text "for HS_PATH"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add after HS_PATH: and see 201.5.2.7 for LS_PATH.

Cl **201** *SC* **201.5.2.8.2** *P* **116** *L* **9** # 104

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **D** *PHY Cntrl*

The transition from TRUE to FALSE needs to be clarified for infofield_complete

SuggestedRemedy

The taskforce needs to discuss what the correct criteria is for transitioning infofield_complete from TRUE to FALSE, to eliminate any ambiguity in Figure 201-22

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

See #122.

Cl **201** *SC* **201.5.2.8.2** *P* **116** *L* **22** # 105

Jonsson, Ragnar Infineon

Comment Type **E** *Comment Status* **R** *PHY Cntrl*

The statement "loc_countdown_done This variable is set to FALSE when the PHY Control state diagram is in the DISABLE_TRANSMITTER state" should be reflected in Figure 201-22

SuggestedRemedy

Update DISABLE_TRANSMITTER state in Figure 201-22 to include "loc_countdown_done<=FALSE"

Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **201** *SC* **201.5.2.8.2** *P* **116** *L* **52** # 106

Jonsson, Ragnar Infineon

Comment Type **E** *Comment Status* **D** *PHY Cntrl*

The term "Allows" is too weak, and there should also be a reference to clause 201.5.2.1, where the variable is described.

SuggestedRemedy

Change "Allows reset of the PHY Control and Link Monitor state diagrams" to "Forces reset of the PHY Control and Link Monitor state diagrams (see Clause 201.5.2.1)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: Allows reset of the PHY Control and Link Monitor state diagrams

To: Forces reset of the PHY Control and Link Monitor state diagrams (see 201.5.2.1).

Cl **201** *SC* **201.5.2.8.2** *P* **117** *L* **18** # 119

Lo, William Axonne Inc.

Comment Type **T** *Comment Status* **A** *PHY Cntrl*

The editorial note is correct.

SuggestedRemedy

Use the rem_countdown_done definition in the editorial note to replace the current one in lines 19-21. Delete the editorial note.

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.5.2.8.2** *P* **117** *L* **42** # 148

Pandey, Sujan Velinktech

Comment Type **T** *Comment Status* **D** *PHY Cntrl*

This value is asserted when transmission of zero symbols is to take place

SuggestedRemedy

This value is continuously asserted in case transmission of zeros is required

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **201** *SC* **201.5.2.8.3** *P* **117** *L* **50** # 107

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **D** *PHY Cntrl*

The minwait_timer only partially affects the minimum amount of time the PHJY stays in PCS_TEST, and does not affect the time that the PHY Control stays in PCS_DATA.

SuggestedRemedy

Change "A timer used to determine the minimum amount of time the PHY Control stays in the SILENT, TRAINING, PCS_TEST, and PCS_DATA states" to "A timer used to determine the minimum amount of time the PHY Control stays in the SILENT and TRAINING states, and the minimum time it stays in PCS_TEST state before normal transition to the PCS_DATA state"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **201** *SC* **201.5.2.8.4** *P* **118** *L* **5** # 108

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **A** *PHY Cntrl*

Figure 201-22 should be updated based on discussions in the January meeting and follow-up discussions.

SuggestedRemedy

Add new "TRAINING_FAILURE" state and have "error transitions" transition to this new state instead of "SILENT" state. Also make updates figure 201-26 to have transition from LINK_GOOD_CHECK to TRANSMIT_DISABLE when PHY Control enters TRAINING_FAILURE.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Update Figure 201-22 per "Markup of Figure 201-22 03042026V3.pdf" and update Figure 201-66 per "Markup of Figure 201-26_02272026_V2.pdf."

Cl **201** *SC* **201.5.2.8.4** *P* **118** *L* **6** # 211

Abedinzadeh, Bizhan Infineon

Comment Type **T** *Comment Status* **D** *PHY Cntrl*

Figure 201-17 should remove restart paths from PCS_TEST/TX_SWITCH/COUNT_DOWN to SILENT.

SuggestedRemedy

Restart should cause restart from LINK SYNC. The incldued PDF shows ther requested changes in state machine to allow desired transition

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

This is in 201.5.2.8.4, P118/L6, Figure 201-22 in D0.b.

Update Figure 201-22 per "Markup of Figure 201-22 03042026V3.pdf" and update Figure 201-66 per "Markup of Figure 201-26_02272026_V2.pdf."

Also, in 201.5.2.8.1, P115L8
Change: returns to the SILENT state
To: transitions to the TRAINING_FAILURE state

Cl **201** *SC* **201.5.2.8.4** *P* **118** *L* **24** # 122

Lo, William Axonne Inc.

Comment Type **T** *Comment Status* **A** *PHY Cntrl*

Clarify intent of infofield_complete.

SuggestedRemedy

Add:
infofield_complete <= FALSE as the first statement in the TRAINING and COUNTDOWN states

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

P116L9: Add at the end of the "FALSE definition": since the PMA_state changed.

Don't include the change in Figure 201-22.

Cl **201** *SC* **201.5.2.8.4** *P* **118** *L* **33** # 120

Lo, William Axonne Inc.

Comment Type **T** *Comment Status* **D** *PHY Cntrl*

info_field_complete should also apply to the HS_PATH in the transition from COUNTDOWN to TX_SWITCH

SuggestedRemedy

Change the transition condition to:
((phy_role = PHY_S * loc_countdown_done) + (phy_role = PHY_D))* infofield_complete

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Update Figure 201-22 per Markup of Figure 201-22 03042026V3.pdf.

Update spec based LS_PHY_Cntrl_v2.pdf. Due to the fact that PHY_D does not enter COUNTDOWN state, changes were needed.

Cl **201** *SC* **201.5.2.8.4** *P* **118** *L* **33** # 109

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **A** *PHY Cntrl*

Figure 201-22 should be updated based on discussions in the January meeting and follow-up discussions.

SuggestedRemedy

Change the transition condition from COUNTDOWN to TX_SWITCH to eliminate the infofield_compleate from the PHY_D path but add it to the PHY_S path.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Update Figure 201-22 per Markup of Figure 201-22 03042026V3.pdf.

Cl **201** *SC* **201.5.2.9** *P* **119** *L* **11** # 110

Jonsson, Ragnar Infineon

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

The wording "During this period" is ambiguous.

SuggestedRemedy

Change "During this period" to "While in LINK_DOWN state"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.5.2.9** *P* **119** *L* **15** # 111

Jonsson, Ragnar Infineon

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

The wording "As soon as reliable transmission is achieved" lacks clarity

SuggestedRemedy

Change "As soon as reliable transmission is achieved" to "When pcs_data_mode is TRUE"

Response *Response Status* **C**

ACCEPT.

Changed line to 15.

Cl **201** *SC* **201.5.2.9** *P* **119** *L* **16** # 112

Jonsson, Ragnar Infineon

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

The text "upon which further PHY operations can take place" is either meaningless or ambiguous.

SuggestedRemedy

Remove the text "upon which further PHY operations can take place"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.5.2.10** *P* **120** *L* **4** # 195

Zimmerman, George CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

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

This section describes the link synchronization, but lacks the simple requirement that the state diagram (Figure 201-26) shall be followed.

SuggestedRemedy

Change "shall establish the start of PHY PMA training as defined in 201.5.2.7." to "shall conform to the state diagram in Figure 201-26. This section describes and defines the function of Figure 201-26, the link synchronization process."

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.5.2.10** *P* **120** *L* **30** # 113

Jonsson, Ragnar Infineon

Comment Type **E** *Comment Status* **D** *EZ - link sync*

The term "SEND_S pusle" is used without any explanation what "SEND_S pulse" means.

SuggestedRemedy

Add the text "The SEND_S signal is a series of pulses." before line 30

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **201** *SC* **201.5.2.10** *P* **120** *L* **33** # 136

Zherebtsov, Aleksei Infineon

Comment Type **E** *Comment Status* **D** *DME*

The sentence at this line is "At the FOLLOWER each DME symbol time is nominally 25.6/3 ns +1/–20%." But -20% is related to the clock frequency, not the clock period. The clock frequency offset -20% corresponds to the clock period offset +25%.

SuggestedRemedy

The sentence "At the FOLLOWER each DME symbol time is nominally 25.6/3 ns +1/–20%." shall be changed to "At the FOLLOWER each DME symbol time is nominally 25.6/3 ns +25/–1%."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

201.6.2.6, P133L6
Change: The symbol transmission rate of the FOLLOWER PHY, when running off of a free-running clock, shall be within the range 5625 × S MHz +1/–20 % and the short-term rate of frequency variation shall be less than 1 % / second.

To: The symbol transmission rate of the FOLLOWER PHY during link sync, when running off of a free-running clock, shall be within the range 5625/48 MHz +1/–20 % and the short-term rate of frequency variation shall be less than 1 % / second.
Note - make 5625/48 and inline equation.

201.5.10, P120L32

Change: At the LEADER, each DME symbol time is nominally 25.6/3 ns (8.533 ns) ± 50 ppm. At the FOLLOWER each DME symbol time is nominally 25.6/3 ns +1/–20%. The large tolerance is to accommodate crystal-less implementations at the FOLLOWER.

To: At the LEADER and FOLLOWER, each DME symbol time is nominally 25.6/3 ns. See 201.6.2.6 and 201.7.2.7 for details on bit timing tolerance.

P1L40 in GZ_Comment_linksync_030926.pdf
Change: When the FOLLOWER detects a sufficient number of the LEADER's SEND_S pulses to determine that the LEADER is active, the FOLLOWER outputs one SEND_S pulse 435 +90/–10 ns after the detection of the LEADER's most-recent SEND_S pulse.

To: When the FOLLOWER detects a sufficient number of the LEADER's SEND_S pulses to determine that the LEADER is active, the FOLLOWER outputs one SEND_S pulse.

Cl **201** *SC* **201.5.2.10** *P* **120** *L* **33** # 114

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **D** *clock accuracy*

The text "± 50 ppm" is not consistent with the ± 100 ppm in Table 201-4

SuggestedRemedy

Change "± 50 ppm" to "± 100 ppm"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See #136

Cl **201** *SC* **201.5.2.10** *P* **120** *L* **40** # 197

Zimmerman, George CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **E** *Comment Status* **D** *EZ - link sync*

The 5th paragraph here has shalls which duplicate what is in the state diagram. They should be replaced by descriptive text.

SuggestedRemedy

Replace "shall output" at lines 42 and 44 with "outputs"
Replace "shall repeat" at line 45 with "repeats"
Replace "shall stop outputting and enter" at lines 46-47 with "stops outputting and enters"
Replace "shall also enter" at line 48 with "enters"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See zimmerman_3dm_01a_240226 and GZ_Comment_linksync.pdf.

Update text and Figure 201-26 in 201.5.2.10 and subclauses to match GZ_Comment_linksync_030926.pdf, deleting the parenthetical time in nsec on leader_pause_timer and pulse_timer.

Cl **201** *SC* **201.5.2.10** *P* **120** *L* **41** # 196

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **D** *link sync*

The text here includes a delay for the FOLLOWER sending out a SEND_S pulse that conflicts with the state diagram. Assuming this is the intended behavior, the state diagram needs to be corrected.

SuggestedRemedy

NOTE - the below is closer but almost surely wrong - A presentation will be provided.

Add new timer to 201.5.2.10.2 (P122 L22):
send_s_delay_timer
This timer is used to delay the Follower's transmission to sending SEND_S after it has detected SEND_S from the Leader. The timer shall expire 435 +90/-10 ns after it is started.

Add new state between SIGDET_WAIT and TX_SEND_S (replacing current exit from SIGDET_WAIT to TX_SEND_S), on exit condition from SIGDET_WAIT of "send_s_sigdet"
State name: "SEND_S DELAY"
State action: start send_s_delay_timer
Exit: to TX_SEND_S on condition send_s_delay_timer_done

Like I said, a presentation will be submitted - the above is closer, but probably wrong.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See zimmerman_3dm_01a_240226 and GZ_Comment_linksync.pdf.

Update text and Figure 201-26 in 201.5.2.10 and subclauses to match GZ_Comment_linksync_030926.pdf, deleting the parenthetical time in nsec on leader_pause_timer and pulse_timer.

Cl **201** *SC* **201.5.2.10.1** *P* **122** *L* **1** # 198

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

Comment Type **T** *Comment Status* **D** *link sync*

The conditions for what TRUE and FALSE mean are contained as 'shalls' in the variable description for send_s_sigdet. Since the state diagram is one 'shall' this makes it a redundant requirement, and isn't good style.

SuggestedRemedy

Delete Text (2 sentences) from "At least 3 consecutive… to "setting this variable from TRUE to FALSE".
Change definitions of TRUE and FALSE to:
TRUE: At least 3 consecutive valid SEND_S pulses have been detected.
FALSE: No SEND_S pulses have been detected for at least 3.1 us.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See zimmerman_3dm_01a_240226 and GZ_Comment_linksync.pdf.

Update text and Figure 201-26 in 201.5.2.10 and subclauses to match GZ_Comment_linksync_030926.pdf, deleting the parenthetical time in nsec on leader_pause_timer and pulse_timer.

Cl **201** *SC* **201.5.2.10.1** *P* **122** *L* **2** # 115

Jonsson, Ragnar — Infineon

Comment Type **T** *Comment Status* **D** *link sync*

The description "At least 3.1µs period with no SEND_S pulses detected shall be detected before setting this variable from TRUE to FALSE" can lead to the state machine staying erroneously in the SEND_S state, in the presence of EMI pulses.

SuggestedRemedy

Change "At least 3.1µs period with no SEND_S pulses detected shall be detected before setting this variable from TRUE to FALSE" to "If less than three pulses are detected within a 5.1us period, the send_s_sigdet transitions from TRUE to FALSE"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See zimmerman_3dm_01a_240226 and GZ_Comment_linksync.pdf.

Update text and Figure 201-26 in 201.5.2.10 and subclauses to match GZ_Comment_linksync_030926.pdf, deleting the parenthetical time in nsec on leader_pause_timer and pulse_timer.

Cl **201** *SC* **201.5.2.10.2** *P* **122** *L* **20** # 210

Abedinzadeh, Bizhan Infineon

Comment Type **T** *Comment Status* **D** *link sync*

Link_fail_inhbit_timer be reduced to 50ms

SuggestedRemedy

Change to 50ms

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See #116

Cl **201** *SC* **201.5.2.10.2** *P* **122** *L* **21** # 116

Jonsson, Ragnar Infineon

Comment Type **T** *Comment Status* **D** *link sync*

The link_fail_inhibit_timer should expire after 50ms.

SuggestedRemedy

Add to line 21 "The link_fail_inhibit_timer is initialized to 50ms".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The correct line number is 21.

Change: see 98.5.2.

To: Timer for qualifying a link_status=FAIL indication or a link_status=OK indication when a specific technology link is first being established. A link will be considered “failed” only if the link_fail_inhibit_timer has expired and the link has still not gone into the link_status=OK state. This timer shall expire 49 ms to 50 ms after entering the AN GOOD CHECK state.

Cl **201** *SC* **201.5.2.10.3** *P* **122** *L* **36** # 149

Pandey, Sujan Velinktech

Comment Type **T** *Comment Status* **D** *link sync*

Transmit a zero value

SuggestedRemedy

This value is continuously asserted in case transmission of zeros is required

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **201** *SC* **201.5.2.11** *P* **124** *L* **4** # 12

Long, Richard TE Connectivity

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

Typo

SuggestedRemedy

Change "LS_PATEH" to "LS_PATH"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.6.1** *P* **124** *L* **34** # 184

Wienckowski, Natalie IVN Solutions LLC / Ethernovia

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

SuggestedRemedy

Delete Editor's note

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.6.1.1** *P* **126** *L* **17** # 252

Sakunia, Saket Infineon

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

replace “...use a reference clock provided by the measurement device” with “...use a reference clock provided by an external clock source”

SuggestedRemedy

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.6.1.1** *P* **126** *L* **34** # 253

Sakunia, Saket Infineon

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

replace “...use a reference clock provided by the measurement device” with “...use a reference clock provided by an external clock source”

SuggestedRemedy

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.6.1.1** *P* **127** *L* **35** # 254

Sakunia, Saket Infineon

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

replace “...use a reference clock provided by the measurement device” with “...use a reference clock provided by an external clock source”

SuggestedRemedy

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.6.1.1** *P* **128** *L* **11** # 255

Sakunia, Saket Infineon

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

replace “...use a reference clock provided by the measurement device” with “...use a reference clock provided by an external clock source”

SuggestedRemedy

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.6.2** *P* **128** *L* **25** # 3

Maguire, Valerie Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

Follow IEEE Style

IEEE Editorial Style Manual for Authors
https://journals.ieeeauthorcenter.ieee.org/wp-content/uploads/sites/7/IEEE-Editorial-Style-Manual-for-Authors.pdf
Page 28 - listed in abbreviation list

2021 IEEE SA Standards Style Manual
https://mentor.ieee.org/myproject/Public/mytools/draft/styleman.pdf
Page 29 - used with lowercase in an example

SuggestedRemedy

Replace "DC" with "dc" in three locations:

P128, L25
P136, L32
P227, L35

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.6.2.2** *P* **128** *L* **43** # 251

Sakunia, Saket Infineon

Comment Type **T** *Comment Status* **D** *ACT test*

Comment 240 draft 0.a. Update: Transmitter Linearity test.Test Mode 4 measurement is impacted by presence of PoC/PoDL components. The measurement method needs to be updaetd to account for presence of PoC/PoDL components

SuggestedRemedy

Comment 240 draft 0.a. Update resolution: The method used calculate the Transmitter Linearity needs to introduce a High Pass Filter corresponding to the High Pass corner of the PoC/PoDL circuit .

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This is 201.6.2.2, P128/L43 in D0.b.

TFTD if a solution is provided by the commenter.

The commenter has not provided a solution.

Cl **201** *SC* **201.6.2.2** *P* **128** *L* **43** # 201

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

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

149.7.2 only has descriptive text. Saying they "shall be as specified" is inappropriate.

SuggestedRemedy

Change "shall be as specified in 149.7.2." to "are described in 149.7.2."

Response *Response Status* **C**

ACCEPT.

Corrected to 201.6.2.2, P128/L43

Cl **201** *SC* **201.6.2.4** *P* **130** *L* **34** # 199

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

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

The way a PSD is measured isn't a requirement on the device, it is a requirement on the user of the standard, which is not appropriate. Measuring a device is different from whether the device is compliant…

The same comment applies to 201.7.2.5 (LS transmitter PSD) as well, on P138

SuggestedRemedy

Change "shall be measured" to "is measured" at P130 L34 and at P138 L18

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.6.2.6** *P* **133** *L* **3** # 84

Jonsson, Ragnar — Infineon

Comment Type **T** *Comment Status* **A** *clock accuracy*

There is inconsistency between the +/-100ppm in Table 201-4 and the +/-50ppm in clause 201.6.2.6

SuggestedRemedy

Keep the +/-100ppm in Table 201-4 and change the +/-50ppm value in line 3 of page 133 to +/-100ppm.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Editor to ensure all +/-50 ppm in Clause 201 are changed to +/-100 ppm.

Cl **201** *SC* **201.6.2.6** *P* **133** *L* **7** # 176

Wienckowski, Natalie — IVN Solutions LLC / Ethernovia

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

According to the IEEE Standards - draft standard template, there should not be a space between a number and the % symbol, e.g. 10%, not 10 %.

SuggestedRemedy

Remove the space betweeen "20" and "%". Remove all spaces between the number and the % symbol.

Response *Response Status* **C**

ACCEPT.

Val to check 202.

Cl **201** *SC* **201.6.2.6** *P* **133** *L* **7** # 138

Johnson, Samuel — Infineon

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

"short-term" is vague and should be specically defined to a reasonable value

SuggestedRemedy

Change the text to:
"The symbol transmisson rate of the FOLLOWER PHY, when running off of a free-running clock, shall be within the range 5625 x S MHz +1/-20% and, over measuring period of 1ms, frequency variation shall be less than 1% / second

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.7.1** *P* **136** *L* **2** # 185

Wienckowski, Natalie — IVN Solutions LLC / Ethernovia

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

Change text to clarify what is sent.

SuggestedRemedy

Change: When test mode 2 is enabled, the PCS shall generate a continuous pattern of 1's.
To: When test mode 2 is enabled, the PHY shall repeatedly transmit DME encoded ones.

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.7.2.5** *P* **138** *L* **42** # 186

Wienckowski, Natalie — IVN Solutions LLC / Ethernovia

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

The Figure was updated for the UpperPSD to go to 3500 MHz, but this was not changed in Equation 201-9.

SuggestedRemedy

In Equation 201-9, change 400 to 3500.

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.7.2.6** *P* **140** *L* **32** # 187

Wienckowski, Natalie — IVN Solutions LLC / Ethernovia

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

typo

SuggestedRemedy

Change 100M to 100 Mb/s. Also on L36.

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.7.2.8** *P* **140** *L* **52** # 200

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

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

The way rise time is measured isn't a requirement on the device, but an inappropriate requirement on the user. Here though, the measurement point and test mode are part of the definition of the requirement.

SuggestedRemedy

Change "shall be measured" to "is defined as measured"

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.10.1.5** *P* **145** *L* **2** # 13

Long, Richard — TE Connectivity

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

Use piecewise equation here instead of text

SuggestedRemedy

Remove the limits from the text and place them in a piecewise equation

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Create an equation and a plot of the equation to put in the text.

Cl **201** *SC* **201.10.2.1** *P* **145** *L* **16** # 15

Long, Richard — TE Connectivity

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

Add PSANEXT formula and explanation text similar to 202.8.2.1

SuggestedRemedy

Copy page 240, lines 6 - 18 and place here, change frequency range to 3 MHz to 4000 MHz in added text.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

P145/L17 Insert the following between the heading and existing text:

The differential pair-to-pair near-end crosstalk (NEXT) loss between the disturbed link segment and the disturbing link segment is specified to meet the bit error ratio objective by limiting the alien crosstalk at the near end of a link segment. Multiple disturber alien NEXT loss is specified as the power sum of the individual alien NEXT disturbers. The power ANEXT loss is derived using Equation (97–25).

Cl **201** *SC* **201.10.2.1** *P* **145** *L* **22** # 14

Long, Richard — TE Connectivity

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

Error in equation

SuggestedRemedy

Change PSANEXT equation to what is shown on slide 3 of https://www.ieee802.org/3/dm/public/0126/Boyer-Sharma_3dm_01a_0126.pdf (i.e. remove "75" and "80" from the formula)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change: 6075,6080
To: 60,60

Cl **201** *SC* **201.10.2.2** *P* **146** *L* **1** # 17

Long, Richard — TE Connectivity

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

Add PSAACRF formula and explanation text similar to 202.8.2.2

SuggestedRemedy

Copy page 241, lines 3 - 21 and place here, change frequency range to 3 MHz to 4000 MHz in added text.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

P146/L4 Insert the following between the heading and existing text:

In order to limit the alien crosstalk at the far-end of a link segment, the differential pair-to-pair alien far-end crosstalk (FEXT) loss between the disturbed link segment and the disturbing link segment is specified to meet the bit error ratio objective. Multiple disturber attenuation to crosstalk ratio far-end ACRF is specified as the power sum of the individual alien ACRF disturbers to limit the total alien FEXT coupled into a link segment. The power AACRF is derived using Equation (97–27).

Cl **201** *SC* **201.10.2.2** *P* **146** *L* **9** # 16

Long, Richard — TE Connectivity

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

Error in equation

SuggestedRemedy

Change PSAACRF equation to what is shown on slide 3 of https://www.ieee802.org/3/dm/public/0126/Boyer-Sharma_3dm_01a_0126.pdf (i.e. remove "75" and "80" from the formula)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change: 6075,6080
To: 60,60

Cl **201** *SC* **201.14** *P* **151** *L* **1** # 202

Zimmerman, George — CME Consulting/ADI,APL Gp, Cisco, Infineon, OnSe

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

The PHY link includes the medium. The specification is only on the PHY sublayer processing. This impacts both the spec on line 1 (HS_PATH) and line 5 (LS_PATH).

SuggestedRemedy

change "PHY link" to "PHY (local XGMII to remote XGMII link delay minus the link segment propagation delay)" in lines 1 and 5.
Delete the NOTE on line 9 (in its entirety).

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.14** *P* **151** *L* **10** # 125

Lo, William — Axonne Inc.

Comment Type **T** *Comment Status* **D** *201A*

Add a pointer to see Annex 201

SuggestedRemedy

Add following Sentence:
See Annex 201 for informative guidance on the allocation of delay between the transmit and receive portions of the PHY.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **201** *SC* **201.14** *P* **151** *L* **26** # 268

Fuller, Paul — Infineon

Comment Type **T** *Comment Status* **A** *100M delay*

Delay should be 10us and 2 Pause Quanta

SuggestedRemedy

Delay should be 10us and 2 Pause Quanta

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See #124 for preferred values.

Cl **201** *SC* **201.14** *P* **151** *L* **27** # 124

Lo, William — Axonne Inc.

Comment Type **T** *Comment Status* **A** *100M delay*

Replace TBD values

SuggestedRemedy

512, 1, 5120

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.14** *P* **151** *L* **27** # 156

Wienckowski, Natalie — IVN Solutions LLC / Ethernovia

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

typo

SuggestedRemedy

Change: 100M_MultiGBAE-T1/V1
To: 100M+MultiGBAE-T1/V1

Response *Response Status* **C**

ACCEPT.

Cl **201** *SC* **201.14** *P* **151** *L* **32** # 126

Lo, William — Axonne Inc.

Comment Type **T** *Comment Status* **D** *201A*

Remove editor's note with Annex 201

SuggestedRemedy

See Lo_3dm_Annex201.pdf

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

Cl **202** *SC* **202** *P* **155** *L* **3** # 256

Gorshe, Steve — Microchip Technology

Comment Type **T** *Comment Status* **D** *new speed*

Add support for 100M+1GBASE-T1/V1 and 1G+100mBASE-T1/V1

SuggestedRemedy

Apply the updates from Gorshe-1G_8023-202-d0pb.docx, with editorial license.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

Apply the updates from Gorshe-1G_8023-202-d0pb.docx and gorshe_3dm_03_0326-draft.pptx, with editorial license.

Cl **202** *SC* **202** *P* **155** *L* **3** # 257

Gorshe, Steve — Microchip Technology

Comment Type **T** *Comment Status* **D** *new speed*

Add support for 100M+7.5GBASE-T1/V1 and 7.5G+100mBASE-T1/V1

SuggestedRemedy

Apply the updates from Gorshe-7d5G_8023-202-d0pb.docx, with editorial license.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

Apply the updates from Gorshe-7d5G_8023-202-d0pb.docx and gorshe_3dm_03_0326-draft.pptx, with editorial license.

Cl **202** *SC* **202.1** *P* **155** *L* **18** # 258

Gorshe, Steve — Microchip Technology

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

Add an overview description

SuggestedRemedy

Delete the Editor's note and add the following summary paragraph ahead of 202.1.1 (with Editor's license): "The clause 202 MultiG+100MBASE/100MBASE+MultiG-T1/V1 PCS is optimized to support a single, flexible PHY with multiple rate options. It features baud rate commonality across all high-speed and low-speed PHY types. This commonality includes using the same TDD cycle for all PHY combinations (see 202.3), as well as the same base FEC with different shortening parameters for the high-speed and low-speed directions."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Delete Editor's Note in 202.1 and replace with text: "The MultiG+100MBASE/100MBASE+MultiG-T1/V1 PHY is optimized to support multiple rate options. It features baud commonality across all high speed and low speed PHY implementations. This commonality includes using the same TDD cycle for all PHY implementations (see 202.3), as well as the same base FEC with different shortening parameters for the high speed and low speed directions." with editorial license to modify the text.

Editors to replace "high-speed" with "high speed" in two locations in clause 201 and "low-speed" with "low speed" in two locations in clause 201.

Cl **202** *SC* **202.1.1** *P* **156** *L* **18** # 4

Maguire, Valerie — Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

Just saying "X+Y" is a little unclear. Suggest to add an example.

SuggestedRemedy

Replace, "represents the transmit and receive bit rates in the PHY name, where X is the transmit bit rate and Y is the receive bit rate"

with, "Replace, "represents the transmit and receive bit rates in the PHY name, where X is the transmit bit rate and Y is the receive bit rate (e.g., for 100M+2.5GBASE-T1, X = 100 Mb/s and Y = 2.5 Gb/s)"

Grant Editor's License to make this same change in other clauses

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Delete "X+Y" definition on P156L18, P73L50, and P46L17

Cl **202** *SC* **202.1.1** *P* **156** *L* **20** # 5

Maguire, Valerie — Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

Don't need to have balanced twice in the line for -T1.

The information in parenthesis is "in other words", so "i.e.," should be used.

The double parenthesis bothers the Commenter. :-)

SuggestedRemedy

Replace, "-T1 represents a single shielded balanced pair of conductors (differential (balanced))"

With, "-T1 represents a single shielded balanced pair of conductors (i.e., differential)"

Replace, "-V1 represents a single coaxial cable (single-ended (unbalanced))"

With, "-V1 represents a single-ended coaxial cable (i.e., unbalanced)"

Grant Editor's License to make this same change in other clauses.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See #1.

Cl **202** *SC* **202.1.1** *P* **156** *L* **45** # 1

Maguire, Valerie — Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

Introduce -T1, -V1, and -T1/V1 as shorthand for when talking about MultiG+100M/100M+MultiGBASE-T1, MultiG+100M/100M+MultiGBASE-V1, and MultiG+100M/100M+MultiGBASE-T1/V1, respectively.

SuggestedRemedy

Replace, "MultiG+100M/100M+MultiGBASE-T1" with "MultiG+100M/100M+MultiGBASE-T1 or -T1"

Replace, "MultiG+100M/100M+MultiGBASE-V1" with "MultiG+100M/100M+MultiGBASE-V1 or -V1"

Replace, "MultiG+100M/100M+MultiGBASE-T1/V1" with "MultiG+100M/100M+MultiGBASE-T1/V1 or -T1/V1"

Grant Editor's License to make this same change in other clauses.

When speaking about the link segment or the MDI (but not the PHY), Grant Editors license to search for "MultiG+100M/100M and MultiGBASE-T1/V1" and "MultiG+100M/100M+MultiGBASE-T1/V1" and replace with "-T1/V1" as appropriate.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Delete definitions for -T1 and -V1 on P156, L20-21 and delete “where” on P156, L16 (comment #4 deletes the definition for "X+Y").

Insert the following as a new paragraph after Table 202-1 (P156, L47):

“The following shorthand nomenclature, without the full PHY name, is used to describe the MDI, link segment, test mode, and other specifications that are medium dependent:

-T1 represents a single shielded balanced pair of conductors (i.e., differential)

-V1 represents a single-ended coaxial cable (i.e., unbalanced)”

Grant Editorial license to insert text in the correlating locations in Clause 200 and Clause 201.

Grant Editorial license to search for “MultiG+100M/100M+MultiGBASE-T1/V1” in non-PHY references and work with the Champions to remove the text and make necessary Editorial adjustments (for example, in 202.1.2, replace, “Each PHY in a in a MultiG+100M/100M+MultiGBASE-T1 link is capable of operating…” with “Each PHY is capable of operating…”).

Grant Editorial license to search for “-T1/-V1” and work with the Champions to remove the text and make necessary Editorial adjustments (i.e., there should be no occurrences of “-T1/-V1” in the draft as it is not defined shorthand nomenclature).

Cl **202** *SC* **202.1.3** *P* **158** *L* **3** # 213

Muma, Scott — Microchip

Comment Type **T** *Comment Status* **D** *TDD Autoneg*

Since Clause 98 AN support is not defined, remove "Technology Dependent Interface" from this and other diagrams and text, and remove the PMA_Link.indication (link_status) and PMA_Link.request(link_control). Link_control and link_status are internal to the PHY or management connected.

SuggestedRemedy

Delete "Technology Dependent Interface (optional)", the dashed line below it, and the PMA_Link.* signal connections to the dashed line from Figure 202-1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **202** *SC* **202.1.3** *P* **158** *L* **50** # 218

Muma, Scott — Microchip

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

Typically similar clauses have a note indicating the recovered_clock can be used for looptiming.

SuggestedRemedy

Below Figure 202-1 add:
NOTE 1-The recovered_clock arc is shown to indicate delivery of the received clock signal back the PMA TRANSMIT for loop timing.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

(Editor's note: Hyphen changed to em-dash. Number 1 not needed if only one note. Note can be added below Figure 202-22. too.)

Add at the bottom of Figure 202-1 and Figure 202-22:
"NOTE-The recovered_clock arc is shown to indicate delivery of the received clock signal back the PMA TRANSMIT for loop timing."

Cl **202** *SC* **202.2.1** *P* **162** *L* **39** # 237

Muma, Scott — Microchip

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

The following primitives were defined, but are not used and no longer needed, so can be removed from this section and from the diagrams.
PMA_TX_TDD_ACTIVE.indication(tx_tdd_active)
PMA_RX_TDD_ACTIVE.indication(rx_tdd_active)
PMA_TX_ON.request(tx_on)
PMA_RX_ON.request(rx_on)

SuggestedRemedy

1. Remove:
PMA_TX_TDD_ACTIVE.indication(tx_tdd_active)
PMA_RX_TDD_ACTIVE.indication(rx_tdd_active)
PMA_TX_ON.request(tx_on)
PMA_RX_ON.request(rx_on)
from the list of primitives.
2. Remove the deleted primitives from all diagrams
3. Delete the subclauses defining these primitives 202.2.1.10, 202.2.1.11, 202.2.1.12, and 202.2.1.13.
4. Delete related variables tx_tdd_active, rx_tdd_active, rx_on, tx_on in sections 202.3.7.2.2 and 202.4.4.1.
5. Remove tx_tdd_active from Figure 202-26
6. Remove the editor's notes that are in the sections being deleted which noted these primitives were TBD/redundant.

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.2.1** *P* **163** *L* **2** # 214

Muma, Scott — Microchip

Comment Type **T** *Comment Status* **D** *TDD Autoneg*

Since Clause 98 AN support is not defined, remove "Technology Dependent Interface" from this and other diagrams and text, and remove the PMA_Link.indication (link_status) and PMA_Link.request(link_control). Link_control and link_status are internal to the PHY or management connected.

SuggestedRemedy

Delete "Technology Dependent Interface (optional)", the dashed line below it, and the PMA_Link.* signal connections to the dashed line from Figure 202-2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **202** *SC* **202.2.1.3** *P* **165** *L* **32** # 272

Wang, Frank — Realtek Semiconductor Corp.

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

as in Editor's Note: only describes normal operation, not training

SuggestedRemedy

change: "in training mode and in normal operation for all refresh header, 2.5Gb/s mode, and 5Gb/s mode data payloads."

to: "in normal operation for 100M+MultiGBASE-T1/V1, 2.5G+100MBASE-T1/V1, and 5G+100MBASE-T1/V1."

Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **202** *SC* **202.2.1.3.1** *P* **165** *L* **28** # 270

Wang, Frank — Realtek Semiconductor Corp.

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

comma after "tx_symb"

SuggestedRemedy

change "tx_symb the value" to "tx_symb, the value"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace, "During transmission, the PMA_UNITDATA.request simultaneously conveys to the PMA via the parameter tx_symb the value of the symbols to be sent over the MDI."

with, "The PMA_UNITDATA.request primitive conveys the value of the symbol to be transmitted over the MDI via the tx_symb parameter."

Cl **202** *SC* **202.2.1.3.1** *P* **165** *L* **31** # 271

Wang, Frank — Realtek Semiconductor Corp.

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

wording

SuggestedRemedy

change "10 Gb/s mode's data payload" to "10G+100MBASE-T1/V1"

Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **202** *SC* **202.2.1.4.2** *P* **166** *L* **10** # 273

Wang, Frank — Realtek Semiconductor Corp.

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

The editor's note can be removed as the description had been reviewed and updated during last comment resolution (#142).

SuggestedRemedy

Remove editor's note.

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.2.1.7** *P* **167** *L* **29** # 274

Wang, Frank — Realtek Semiconductor Corp.

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

align with 149.2.2.7

SuggestedRemedy

remove "When the 100M+MultiGBASE-T1/V1 PHY starts Asymmetric training or enters the PCS_TEST state, loc_rcvr_status can be set to NOT_OK."

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.2.1.14.2** *P* **172** *L* **6** # 275

Wang, Frank — Realtek Semiconductor Corp.

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

add text

SuggestedRemedy

Add text: "PMA Receive generates PMA_DET_LP_BURST.indication messages to indicate a change in detect_lp_burst."
Remove editor's note.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

(Editor's note: No change to suggested Remedy except to delete double space after "Receive".)

Add text: "PMA Receive generates PMA_DET_LP_BURST.indication messages to indicate a change in detect_lp_burst."
Remove editor's note.

Cl **202** *SC* **202.2.1.14.3** *P* **172** *L* **13** # 276

Wang, Frank — Realtek Semiconductor Corp.

Comment Type **T** *Comment Status* **D** *TDD PCS*

wording

SuggestedRemedy

change: "Used by TDD monitor and PHYC control state diagram."
to: "The effect of receipt of this primitive is specified in Figure 202-26."
Remove editor's note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **202** *SC* **202.3.2** *P* **173** *L* **19** # 222

Muma, Scott — Microchip

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

The rx_oam_field and tx_oam_field don't need to be defined in this diagram as they differ for each PHY. Removing <TBD> in Figure 202-3 is consistent with Figure 202-1.

SuggestedRemedy

In Figure 202-3 delete "<TBD>" in 2 places following rx_oam_field and tx_oam_field.

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.3.2.2** *P* **174** *L* **9** # 240

Muma, Scott — Microchip

Comment Type **T** *Comment Status* **D** *TDD PCS*

The PCS Payload Scrambler is more correctly called the PCS Scrambler.

SuggestedRemedy

In Figure 202-4 change "PCS Payload Scrambler" to "PCS Scrambler"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Only the first word in a figure item and figure title is capitalized unless it's a proper noun.)

In Figure 202-4 change "PCS Payload Scrambler" to "PCS scrambler"

Change Figure title to, "Figure 202-4-PCS Transmit function block diagram"

Cl **202** *SC* **202.3.2.2** *P* **174** *L* **9** # 239

Muma, Scott — Microchip

Comment Type **T** *Comment Status* **D** *TDD PCS*

Equation (202-4) defines Cn as the scrambled header data stream, but it is missing from Figure 202-4. An is produced during the data region, Cn is similarly produced during the refresh header region, so can add the Cn label at the same place as An. To be more explicit there could be a separate refresh header scrambler that produces Cn, and additional muxing, but this likely complicates the drawing without adding much clarity.

SuggestedRemedy

Change An in Figure 202-4 to "An/Cn".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: "/" could be confused with a division operator.)

Change "An" in Figure 202-4 to "An or Cn".

Cl **202** *SC* **202.3.2.2** *P* **174** *L* **9** # 238

Muma, Scott — Microchip

Comment Type **T** *Comment Status* **D** *TDD PCS*

The MUX block in the lower left area of Figure 202-4 is not required since there is no training performed in PAM4 mode and there is no source of Trn[1]; Dn[1] can go directly to the XOR to produce Bn as per (202-6).

SuggestedRemedy

As per comment remove the MUX and associated input wires in Figure 202-4 bottom left area, replace the output of the mux with Dn[1].

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **202** *SC* **202.3.2.2.16** *P* **183** *L* **25** # 18

Long, Richard — TE Connectivity

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

Typo

SuggestedRemedy

Change "Reed-Soloman" to "Reed-Solomon"

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.3.2.2.16** *P* **183** *L* **32** # 224

Muma, Scott — Microchip

Comment Type **T** *Comment Status* **D** *TDD PCS*

LEADER and FOLLOWER are not relevant to the FEC encoding, but speed is, so delete the LEADER/FOLLOWER terms and replace with the appropriate speed.

SuggestedRemedy

Replace: k = 124 is adopted for the 100M+MultiG BASE-T1/V1 LEADER and k = 122 is adopted for the 100M+MultiG BASE-T1/V1 FOLLOWER.
with: k = 124 is adopted for the LS direction and k = 122 is adopted for the HS direction.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: HS and LS acronyms are not used in the draft.)

Replace: k = 124 is adopted for the 100M+MultiG BASE-T1/V1 LEADER and k = 122 is adopted for the 100M+MultiG BASE-T1/V1 FOLLOWER.

with: k = 124 is adopted for the LS_PATH and k = 122 is adopted for the HS_PATH.

P183, L30
Replace, "In the HS direction" with "For the HS_PATH"

P183, L35
Replace, "HS direction" with "HS_PATH"

P183, L28
Replace, "In the LS direction" with "For the LS_PATH"

P183, L35
Replace, "LS direction" with "LS_PATH"

Cl **202** *SC* **202.3.2.2.16** *P* **184** *L* **15** # 223

Muma, Scott — Microchip

Comment Type **E** *Comment Status* **D** *TDD PCS*

It should be noted that the formation of tx_Rsmessage is given for L=1 and is different for L=2, 4 due to the interleaving that precedes the FEC encoder(s).

SuggestedRemedy

1. Delete editor's note preceding text
2. Replace sentence with:
tx_RSmessage<975:0> prior to RS-FEC(128,122) encoder is formed as follows when L=1 (refer to 202.3.2.2.14 and 202.3.2.2.15 when L=2, 4):

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Improve grammar and align with Style.)

1. Delete editor's note preceding text
2. Replace sentence with:
tx_RSmessage<975:0> prior to RS-FEC(128,122) encoder is formed as follows for L=1 (see 202.3.2.2.14):
3. Insert new standalone sentence on P184, L20 after the equations, "For L=2 and L=4, see both 202.3.2.2.14 and 202.3.2.2.15."

Cl **202** *SC* **202.3.2.2.16** *P* **185** *L* **39** # 277

Wang, Frank — Realtek Semiconductor Corp.

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

Rows 7 and 8 of Table 202-4 can be removed.

SuggestedRemedy

remove the last two rows of Table 202-4

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.3.2.2.17** *P* **185** *L* **47** # 244

Muma, Scott — Microchip

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

The scrambler used in Equation (202-4) should be clarified that it's the PRBS-11.

SuggestedRemedy

Add: DSn[0] in Equation (202-4) is produced using the scrambler defined in 202.3.4.1.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Insert:

"where

DSn[0] is produced using the scrambler defined in 202.3.4.1"

Cl **202** *SC* **202.3.2.2.17** *P* **185** *L* **50** # 243

Muma, Scott — Microchip

Comment Type **T** *Comment Status* **D** *TDD PCS*

Equation (202-4) should define when each equation is to be used. The upper equation is used when tx_mode != SEND_N, lower equation is used when tx_mode = SEND_N. See similar conditions in Equation (202-5).

SuggestedRemedy

After the upper equation add the condition "tx_mode != SEND_N". After the lower equation add the condition "tx_mode = SEND_N".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **202** *SC* **202.3.2.2.17** *P* **186** *L* **15** # 241

Muma, Scott — Microchip

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

202-6 should be a cross-reference to Equation (202-6).

SuggestedRemedy

Format cross-reference appropriately.

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.3.2.2.17** *P* **186** *L* **22** # 242

Muma, Scott — Microchip

Comment Type **T** *Comment Status* **D** *TDD PCS*

Equation (202-6) is only used when tx_mode=SEND_N.

SuggestedRemedy

Add to equation the condition that tx_mode=SEND_N.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **202** *SC* **202.3.2.2.17** *P* **186** *L* **24** # 245

Muma, Scott — Microchip

Comment Type **T** *Comment Status* **D** *TDD PCS*

The scramblers used in Equations (202-5) and (202-6) should be clarified.

SuggestedRemedy

Add: DSn in Equations (202-5) and Equation (202-6) is produced using the scrambler defined in 202.3.4.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: DSn refers to DSn[0] and DSn[1].)

Insert the following sentence at the end of the paragraph on P186, L2:

"Bit DSn[0] is produced using the scrambler defined in 202.3.4.2. It is applied as an additive scrambler sequence to incoming data bit Dn[0] (LSB) to generate the scrambled data bit, An."

On P186, L14, replace:

Replace," DSn[0] and DSn[1] are applied as additive scrambler sequences to incoming data bits Dn[0] (LSB) and Dn[1] (MSB) to generate two scrambled data bits {An, Bn} as shown in 202-6."

with, "Bits DSn[0] and DSn[1] in Equation (202-6) are produced using the scrambler defined in 202.3.4.2. They are applied as additive scrambler sequences to incoming data bits Dn[0] (LSB) and Dn[1] (MSB) to generate two scrambled data bits, An and Bn."

Cl **202** *SC* **202.3.2.2.19** *P* **186** *L* **45** # 139

Zerna, Conrad — NXP

Comment Type **T** *Comment Status* **D** *TDD PCS*

This is a carry-over from ch. Not needed in TDD.

SuggestedRemedy

Remove subsection 202.3.2.2.19

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Recommend discussion to confirm there's consensus regarding no need for any interoperable precoding before accepting.)

Cl **202** *SC* **202.3.2.2.19** *P* **186** *L* **51** # 278

Wang, Frank — Realtek Semiconductor Corp.

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

wording

SuggestedRemedy

change "The PCS transmit" to "The 10G+100MBASE-T1/V1 PCS transmit"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change "The PCS transmit" to "The 10G+100MBASE-T1/V1 PCS Transmit"

Editors to globally replace "PCS transmit function" with "PCS Transmit function"

Editors to globally replace "PCS receive function" with "PCS Receive function"

Editors to globally replace "PCS transmit process" with "PCS Transmit process"

Editors to globally replace "PCS receive process" with "PCS Receive process"

Delete Editor's Note on P186, L48

Cl **202** *SC* **202.3.2.3** *P* **188** *L* **29** # 279

Wang, Frank — Realtek Semiconductor Corp.

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

For "40 consecutive RS-FEC frame errors", there is no difference between LEADER and FOLLOWER.

SuggestedRemedy

remove "(TBD)" and Editor's Note

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.3.2.3** *P* **190** *L* **40** # 246

Muma, Scott — Microchip

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

The last symbol (index 511) in the RS-FEC (512 symbols) block of Figure 202-11 should be PAM4 instead of PAM2.

SuggestedRemedy

Change PAM2511 to PAM4511

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.3.3** *P* **191** *L* **51** # 280

Wang, Frank — Realtek Semiconductor Corp.

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

Test mode 7 is now described in 202.5.1.

SuggestedRemedy

remove "(TBD)" and Editor's Note

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.3.7.2.2** *P* **200** *L* **27** # 281

Wang, Frank — Realtek Semiconductor Corp.

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

These two sentences can be removed because it is unexpected copied from 202.3.2.3 (line 28 on page 188).

SuggestedRemedy

remove "If 40 (TBD) consecutive RS-FEC frame errors are detected, the block_lock flag is de-asserted. The block_lock flag is re-asserted upon detection of a valid RS-FEC frame"

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.3.7.2.2** *P* **200** *L* **32** # 282

Wang, Frank — Realtek Semiconductor Corp.

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

align with 149.3.7.2.2

SuggestedRemedy

remove "(TBD)"

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.3.7.2.2** *P* **200** *L* **36** # 283

Wang, Frank — Realtek Semiconductor Corp.

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

lp_low_snr is originally for LPI refresh in 802.3ch. It can be removed.

SuggestedRemedy

remove the variable "lp_low_snr"

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.3.7.2.2** *P* **200** *L* **40** # 284

Wang, Frank — Realtek Semiconductor Corp.

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

period is missed

SuggestedRemedy

change "See 202.4.4.1" to "See 202.4.4.1."

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.3.7.2.2** *P* **201** *L* **27** # 285

Wang, Frank — Realtek Semiconductor Corp.

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

wording

SuggestedRemedy

change "in user-defined timeout period (usually 3~5 TDD cycles - TBD)." to "in 3 TDD cycles."

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.3.7.2.3** *P* **202** *L* **7** # 286

Wang, Frank — Realtek Semiconductor Corp.

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

The timer, Rfer_timer, is redundant.

SuggestedRemedy

remove "Rfer_timer (TBD)"

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.3.7.2.4** *P* **203** *L* **22** # 287

Wang, Frank — Realtek Semiconductor Corp.

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

"R_TYPE_NEXT" is used in Figure 202-21.

SuggestedRemedy

remove "(TBD)"

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.3.7.2.4** *P* **203** *L* **48** # 288

Wang, Frank — Realtek Semiconductor Corp.

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

802.3ch has this function (T_TYPE_NEXT), but it is not used in any figure.

SuggestedRemedy

remove the function "T_TYPE_NEXT"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

(Editor's note: Definition and (TBD) needs to be deleted, too.)

remove the function "T_TYPE_NEXT (TBD)" and its defintion on P203, L48-50

Cl **202** *SC* **202.3.7.3** *P* **204** *L* **21** # 219

Muma, Scott — Microchip

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

The Transmit state diagram is only in Figure 202-20. Figure 202-21 is the Receive state diagram.

SuggestedRemedy

Change: The PCS 64B/65B Transmit state diagram shown in Figure 202-20 and Figure 202-21 controls the
To: The PCS 64B/65B Transmit state diagram shown in Figure 202-20 controls the

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.3.7.3** *P* **204** *L* **27** # 220

Muma, Scott — Microchip

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

Add text explaining the Receive state diagram is in Figure 202-21 and missing from 802.3-2022 p 5999 modified for Clause 202.

SuggestedRemedy

Insert: The PCS 64B/65B Receive state diagram is shown in Figure 202-21 and controls the decoding of 65B received blocks. It makes exactly one transition for each receive block processed.

The PCS shall perform the functions of RFER monitor, Transmit, and Receive as specified in these state diagrams.

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.3.7.3** *P* **207** *L* **30** # 221

Muma, Scott — Microchip

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

The transition to RX_E from the encircled E is leftover from Clause 149 diagrams related to EEE and should be deleted now.

SuggestedRemedy

Delete the encircled "E" and arrow right above the RX_E state from Figure 202-21.

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.3.8.1** *P* **208** *L* **22** # 289

Wang, Frank — Realtek Semiconductor Corp.

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

Both Rx TDD indication and TxTDD indication are not used and thus can be removed.

SuggestedRemedy

remove "Rx TDD indication" and "TxTDD indication"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

(Editor's note: Definition and (TBD) needs to be deleted, too.)

remove "Rx TDD indication (TBD)" and "TxTDD indication (TBD)" and their respective definitions on P208, L22-26

Cl **202** *SC* **202.3.9** *P* **208** *L* **41** # 259

Gorshe, Steve — Microchip Technology

Comment Type **T** *Comment Status* **A** *TDD OAM*

Add text for this sub-clause

SuggestedRemedy

Remove the Editors note and add the following text: "As specified for MultiGBASE-T1 PHYs in 149.3.9. OAM involves both HS_PATH and LS_PATH. The 10-bit symbols are inserted one per TDD burst into the OAM fields in the HS_PATH and LS_PATH. OAM bits beyond the first 10 per burst are reserved."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

(Editor's Note: Improve grammar. A diagram making the OAM bit mapping/ordering within TDD bursts explicit would be helpful if we have have a volunteer to create it.)

Remove the Editors note and add the following text:

"MultiG+100MBASE-T1/V1 operations, administration, and maintenance (OAM) is as specified for MultiGBASE-T1 PHYs in 149.3.9. OAM involves both HS_PATH and LS_PATH. The 10-bit symbols are inserted one per TDD burst into the OAM fields in the HS_PATH and LS_PATH. OAM bits after the first 10 per burst are reserved."

Cl **202** *SC* **202.4.1** *P* **209** *L* **43** # 216

Muma, Scott — Microchip

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

There is a remaining floating line input to Link Monitor and PHY Control that was formerly driven by sync_link_control in Figure 149-26 which should be deleted from this diagram.

SuggestedRemedy

Delete the floating arrows/line below Link Monitor and PHY Control in Figure 202-22. After this change and removal of PMA_LINK.request there are no inputs into the bottom of the Link Monitor and PHY Control blocks.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

(Editor's note: Clarify that text gets deleted, too. After this change and removal of PMA_LINK.request there are no inputs into the bottom of the Link Monitor and PHY Control blocks.)

Delete the floating arrows/line below Link Monitor and PHY Control and delete the text, "PMA_LINK.request (link_control)" in Figure 202-22.

Cl **202** *SC* **202.4.1** *P* **209** *L* **44** # 215

Muma, Scott — Microchip

Comment Type **T** *Comment Status* **D** *TDD Autoneg*

Since Clause 98 AN support is not defined, remove "Technology Dependent Interface" from this and other diagrams and text, and remove the PMA_Link.indication (link_status) and PMA_Link.request(link_control). Link_control and link_status are internal to the PHY or management connected.

SuggestedRemedy

Delete "Technology Dependent Interface (optional)", the dashed line beside it, and the PMA_Link.* signal connections to the dashed line from Figure 202-22

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **202** *SC* **202.4.2.1** *P* **210** *L* **23** # 290

Wang, Frank — Realtek Semiconductor Corp.

Comment Type **T** *Comment Status* **D** *PMA reset*

to align with 802.3ch and 802.3cy

SuggestedRemedy

remove "(50 ms TBD)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Consider with comments #304 and #306.

Cl **202** *SC* **202.4.2.2** *P* **210** *L* **30** # 225

Muma, Scott — Microchip

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

This sentence is accurate at this point so can remove "(TBD)"

SuggestedRemedy

Delete (TBD)

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.4.2.2** *P* **210** *L* **35** # 226

Muma, Scott — Microchip

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

Update cross reference from 202.x.2 to 202.5.2

SuggestedRemedy

Change 202.x.2 to 202.5.2

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.4.2.2** *P* **210** *L* **39** # 227

Muma, Scott — Microchip

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

Update cross reference from 202.x.2.3 to to 202.5.2.3

SuggestedRemedy

Change 202.x.2.3 to 202.5.2.3

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.4.2.2** *P* **210** *L* **41** # 228

Muma, Scott — Microchip

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

Update cross reference from 202.x.2.3 to to 202.5.2.3

SuggestedRemedy

Change 202.x.2.3 to 202.5.2.3

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.4.2.2.1** *P* **210** *L* **46** # 291

Wang, Frank — Realtek Semiconductor Corp.

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

to align with 802.3bp, 802.3ch and 802.3cy

SuggestedRemedy

remove "(TBD)"

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.4.2.3** *P* **211** *L* **1** # 235

Muma, Scott — Microchip

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

It has been confirmed that this is the correct RFER to achieve the target post-FEC BER and FLR, so TBD can be removed.

SuggestedRemedy

Remove (TBD)

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.4.2.3** *P* **211** *L* **1** # 260

Gorshe, Steve — Microchip Technology

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

Use the current value

SuggestedRemedy

Remove the TBD

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Accomodated by Comment #235

Cl **202** *SC* **202.4.2.3** *P* **211** *L* **2** # 236

Muma, Scott — Microchip

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

This is true for both link segments, so refer to both.

SuggestedRemedy

P211L2: meeting the requirements of 202.7 for -T1 and 202.8 for -V1.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

(Editor's note: Clarify changed text.)

Replace, "over a channel meeting the requirements of 202.7"

with, "over a -T1 channel meeting the requirements of 202.7 or a -V1 channel meeting the requirements of 202.8"

Cl **202** *SC* **202.4.2.4** *P* **211** *L* **35** # 292

Wang, Frank — Realtek Semiconductor Corp.

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

wording

SuggestedRemedy

remove "(TBD)"

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.4.2.4.3** *P* **212** *L* **25** # 293

Wang, Frank — Realtek Semiconductor Corp.

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

wording

SuggestedRemedy

remove "(TBD)"

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.4.2.4.3** *P* **212** *L* **30** # 19

Long, Richard — TE Connectivity

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

Typo

SuggestedRemedy

Burst should not be capitalized, also page 216 line 46

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

(Editor's note: "Burst" also appears in two figures.)

Replace "Burst" with "burst" in the following locations:

Figure 202-17
Figure 202-18
P212, L30
P216, L46

Cl **202** *SC* **202.4.2.4.4** *P* **212** *L* **41** # 294

Wang, Frank — Realtek Semiconductor Corp.

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

wording (many places need to be changed, e.g., lines 41-43 on page 212, Table 202-9 on page 213, etc.)

SuggestedRemedy

change "Training_phase" to "training_phase"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

(Editor's note: Specify the locations where the change should be made. Missing underscore in Table 202-9 and a state diagram.)

change "Training_phase" to "training_phase" in the following locations:

P212, L41
P212, L42
P212, L43

change "Training phase" to "training_phase" in the header of Table 202-9 and resize columns as necessary.

change "training phase" to "training_phase" on P223, L14

Cl **202** *SC* **202.4.2.4.4** *P* **213** *L* **1** # 295

Wang, Frank — Realtek Semiconductor Corp.

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

For Table 202-9:
1. Since training_phase<4:3> has 2-bits, its expression should be updated.
2. Since there are total 3 reserved bits, i.e., reserved<2:0>, the last column is redundant.

SuggestedRemedy

1. change "Training_phase" to "training_phase"
2. for the 3rd column: change "0" to "00" and change "1" to "01"
3. remove the 7th column

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

(Editor's note: Remedy part 1 accomodated by comment #294.)

In Table 202-9:

1. In the 3rd column: change "0" to "00" in three locations and change "1" to "01" in three locatations

2. remove the 7th column

Cl **202** *SC* **202.4.2.4.5** *P* **213** *L* **21** # 261

Gorshe, Steve — Microchip Technology

Comment Type **T** *Comment Status* **D** *multi-rate*

Agreement has been reached that this is a multi-rate PHY that may support any combination of rates, including a single rate.

SuggestedRemedy

Remove the Editor's note and add the following text at the beginning of 202.4.2.4.5 (with Editor's license): "This is a multi-rate PHY that may support any combination of bit rates including a single bit rate. The Leader is configured via management control for the data rate it will use to communicate with the Follower and the data rate that it expects the Follower to use. The information field PHY capability and negotiated speed (data rate) bits of the information field are used to check for misconfiguration."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace Editor's Note on P213, L19-25 with,
"This is a multi-rate PHY that supports any combination of bit rates, including a single bit rate. The LEADER is configured via management control for the data rate used to communicate with the FOLLOWER and the data rate used by the FOLLOWER. The Infofield PHY capability and Infofield negotiated speed (data rate) bits are used to check for misconfiguration."

Replace three occurences of "InfoField" with "Infofield" and replace one occurence of "InfoFields" with "Infofields" in clause 202.

Cl **202** *SC* **202.4.2.4.5** *P* **214** *L* **1** # 296

Wang, Frank — Realtek Semiconductor Corp.

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

wording: remove "BASE-T1/V1" and add period

SuggestedRemedy

change: "The optional BASE-T1/V1 OAM capability shall be enabled only if both PHYs set the capability bit OAMen=1"
to: "The optional OAM capability shall be enabled only if both PHYs set the capability bit OAMen=1."

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.4.2.4.5** *P* **214** *L* **4** # 297

Wang, Frank — Realtek Semiconductor Corp.

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

Precoder is only avilible for 10G mode.

SuggestedRemedy

change: "PrecodeSel indicates the requested precoder."
to: "PrecodeSel indicates the requested precoder, available for 10G only."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

(Editor's note: Be more specific than 10G, improve grammar,remove conflicting text, and correct minor issues in Table 202-10.)

Replace, "PrecodeSel indicates the requested precoder."

with, "PrecodeSel indicates the requested precoder and is available for 10 Gb/s Speed Capability only (see 202.3.2.2.19).

Replace "2.5G", "5G", and "10G" in Table 202-10 with "2.5 Gb/s", "5 Gb/s", and "10 Gb/s", respectively.

Replace "Negotiated High speed" with "Negotiated speed" on P213, L53

Delete paragraph on P213, L46-48

Cl **202** *SC* **202.4.2.4.6** *P* **214** *L* **18** # 298

Wang, Frank — Realtek Semiconductor Corp.

Comment Type **E** *Comment Status* **D** *TDD delay*

The bit ordering needs to be modifed according to Editor's Note and for supporting larger IBG.

SuggestedRemedy

change:
"Oct<1:0>= Reserved. Oct<2>= delay_count_valid. Oct<7:3>= delay _count<4:0>."
to:
"Oct<0>= delay_count_valid. Oct<1:6>= delay _count<5:0>. Oct<7>= Reserved."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's Note: Suggested modification allows delay_count to be increased in the future if needed assuming delay_count<0> is LSB. Remove Editor's Note.)

Delete Editor's Note on P214, L12-15

change:
"Oct<1:0>= Reserved. Oct<2>= delay_count_valid. Oct<7:3>= delay _count<4:0>."

to:
"Oct<0>= Reserved. Oct<1:6>= delay _count<5:0>. Oct<7>= delay_count_valid"

Cl **202** *SC* **202.4.2.4.6** *P* **214** *L* **37** # 189

Chini, Ahmad — Broadcom

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

Not a correct statement. delay counter is used in other states as well

Note-The TDD delay_counter fields and PHY capability bits field are only defined during symmetric training
TRAINING0 state, but not defined in other states.
TDD delay counter is only defined during the symmetric training phase, when PMA_state<7:6>=00. The
initial value shall be set to 0.

SuggestedRemedy

remove the Note and the paragraph after that.

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.4.2.4.6** *P* **214** *L* **49** # 299

Wang, Frank — Realtek Semiconductor Corp.

Comment Type **E** *Comment Status* **D** *TDD delay*

The TDD delay counter now has 6 bits.

SuggestedRemedy

change "0 to 31 (TBD)" to "0 to 63"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **202** *SC* **202.4.2.4.7** *P* **215** *L* **12** # 300

Wang, Frank — Realtek Semiconductor Corp.

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

PhaseSwBC24 has a range (line 22: 16 ~ 256) related to the BC24.

SuggestedRemedy

remove Editor's Note

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.4.2.4.7** *P* **215** *L* **26** # 301

Wang, Frank — Realtek Semiconductor Corp.

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

wording

SuggestedRemedy

remove "(TBD)"

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.4.2.4.11** *P* **216** *L* **51** # 302

Wang, Frank — Realtek Semiconductor Corp.

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

LEADER determins the speed

SuggestedRemedy

change "will be determined (TBD)." to "will be determined by LEADER."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

(Editor's note: Missing "the" in Suggested Remedy and on P216, L45.)

change "will be determined (TBD)." to "will be determined by the LEADER."

on P216, L45,

change "payload symbol from LEADER appears" to "payload symbol from the LEADER appears"

Cl **202** *SC* **202.4.2.4.11** *P* **217** *L* **5** # 303

Wang, Frank — Realtek Semiconductor Corp.

Comment Type **T** *Comment Status* **D** *TDD delay*

Since the IBG is updated, 106.66ns should be changed to 176ns. For more flexible, consider to add a range for it, e.g., ± 8 ns.

SuggestedRemedy

change "106.66 ns - delay_count x 5.33 ns" to "within the range 176 ns - delay_count x 5.33 ns ± 8 ns"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **202** *SC* **202.4.2.4.11** *P* **217** *L* **5** # 188

Chini, Ahmad — Broadcom

Comment Type **T** *Comment Status* **D** *TDD delay*

The value 106.66 ns, has to be updated since IBG incresed to 176 in the latest draft.

SuggestedRemedy

Replace

106.66 ns

with

176ns

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Space needed between value and unit.)

Replace

106.66 ns

with

176 ns

Cl **202** *SC* **202.4.2.4.11** *P* **217** *L* **10** # 304

Wang, Frank — Realtek Semiconductor Corp.

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

to align with 98.5.2

SuggestedRemedy

change "50 ms (TBD)" to "97.5 ms"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Consider with comments #290 and #306.

Cl **202** *SC* **202.4.3.1** *P* **217** *L* **39** # 262

Gorshe, Steve — Microchip Technology

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

Update the MDI section to reference clause 149

SuggestedRemedy

Remove the Editor's note. Replace the current text with: 202.4.3.1 MDI, T1 The MDI signals are as specified in 149.4.3, with the following exceptions: 1) The 2.5Gb/s signaling uses PAM2 instead of PAM4. 2) The 5Gb/s signaling uses PAM2 instead of PAM4. 202.4.3.2 MDI, V1 The MDI signals are as specified in 149.4.3, with the following exceptions: 1) The signals are single ended instead of differential. 2) The 2.5Gb/s signaling uses PAM2 instead of PAM4. 3) The 5Gb/s signaling uses PAM2 instead of PAM4.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Delete Editor's Note on P218, L1-12.

Insert the following sentence between "tx_symb." and "PMA" on P218L14.

"During RS-FEC frame transmission, 10G uses PAM4 while all other symbols transmitted within a burst use PAM2."

Change the ":" on P218L15 to ".":

Editor's license to replace "Equation (20x-xx):" with "Equation (20x-xx).", as appropriate.

Cl **202** *SC* **202.4.4.1** *P* **218** *L* **51** # 217

Muma, Scott — Microchip

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

PMA_LINK.indication primitive is not defined and should be removed from this description of link_status.

SuggestedRemedy

Change: The link_status parameter set by PMA Link Monitor state diagram and communicated through the
PMA_LINK.indication primitive.
To: The link_status parameter set by PMA Link Monitor state diagram.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change: The link_status parameter set by PMA Link Monitor state diagram and communicated through the PMA_LINK.indication primitive.

To: The link_status parameter set by the Link Monitor state diagram.

Cl **202** *SC* **202.4.4.1** *P* **219** *L* **16** # 305

Wang, Frank — Realtek Semiconductor Corp.

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

The variable, loc_SNR_margin, is redundant.

SuggestedRemedy

remove "loc_SNR_margin"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

(Editor's note: Remove variable and definition.)

remove "loc_SNR_margin" and its definition on P219, L16-22

Cl **202** *SC* **202.4.4.2** *P* **221** *L* **7** # 306

Wang, Frank — Realtek Semiconductor Corp.

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

to align with 98.5.2

SuggestedRemedy

change "50 ms (TBD)" to "97.5 ms"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Consider with comments #290 and #305.

Cl **202** *SC* **202.4.4.2** *P* **221** *L* **16** # 307

Wang, Frank — Realtek Semiconductor Corp.

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

to align with 802.3ch and 802.3cy

SuggestedRemedy

change "500 us (TBD)" to "975 us"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Clarify that u is the symbol for micro.)

change "500 us (TBD)" to "975 us"

where u is the symbol for micro

Cl **202** *SC* **202.4.5** *P* **222** *L* **38** # 308

Wang, Frank — Realtek Semiconductor Corp.

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

wording for Figure 202-26 and 202-27

SuggestedRemedy

1. change "pma_state" to "PMA_state"
2. change "training_phase <= 0" to "training_phase <= 00"
3. change "training_phase <= 1" to "training_phase <= 01"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

(Editor's note: pma_state is also found in Figure 202-27.)

In Figure 202-26, TRAINING0 state:
1. change "pma state" to "PMA_state"
2. change "training_phase <= 0" to "training_phase <= 00"
3. change "training_phase <= 1" to "training_phase <= 01"

In Figure 202-27, change "pma_state" to PMA_state" in three locations.

Cl **202** *SC* **202.5** *P* **225** *L* **225** # 212

Abedinzadeh, Bizhan — Infineon

Comment Type **E** *Comment Status* **D** *test*

It is stated that when test mode 4 is enabled in PAM2 mode the PHY shall transmit seqeunce of . In 10G mode training/data is PAM2/PAM4. I think the intention is not 10G Pam2 training

SuggestedRemedy

Suggest making the following change. Line 26 change PAM2 to 5G/2.5G speed , and line 28 change PAM4 to 10G speed

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

(Editor's note: The Suggested Remedy may not align with 202.5.2.2, but it's understood that there is some ambiguity concerning which transmitters should use PAM2/PAM4/both. Perhaps it would be helpful to add a statement that says which transmitters/PHYs will meet the limits in 202.5.2.2? If all PHYs meet the PAM2 limit at their specified rate, and additionally 10G PHYs meet the PAM4 limit at their specified rate. Need assistance crafting this text. Should this be speed or data rate?)

P225, L26:
Replace, "in PAM2 mode" with "for 2.5 Gb/s and 5 G/bs data rates"

P225, L28:
Replace, "in PAM4 mode" with "for 10 G/bs data rates"

Cl **202** *SC* **202.5.1.1** *P* **226** *L* **40** # 231

Muma, Scott — Microchip

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

Test fixture 1 can be used to make all the measurements that test fixtures 3 and 4 enable, without requiring a wideband balun. Combining test fixtures/setups to all use test fixture 1 for -T1 is more efficient.

SuggestedRemedy

1. Delete Figures 202-31 and 202-32.
2. Update caption of Figure 202-29 to "Transmitter test fixture 1 for -T1 transmitter droop, transmitter linearity, power spectral density, transmit power level, and MDI jitter measurements"
3. Editorial license to update "test fixture 3" and "test fixture 4" to "test fixture 1", and update Figure cross-references for deleted figures to point to Figure 202-29.

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.5.2.4** *P* **229** *L* **47** # 229

Muma, Scott — Microchip

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

Test mode 5 definition has been improved so the editor's note and redundant definition of test mode 5 here can be removed.

SuggestedRemedy

1. Delete editor's note on lines 42-46.
2. Delete the paragraph on lines 47-49 and replace with: "The following measurements are performed in test mode 5.

Using the same test fixture as will be used for PSD measurement, the measured transmit power shall be in the range specified in Table 202-15."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

1. Delete editor's note on lines 42-46.
2. Delete the paragraph on lines 47-49 and replace with: "Transmitter power spectral density (PSD) and power level measurements are performed in test mode 5. The measured transmit power shall be in the range specified in Table 202-15 when using the same test fixture as used for PSD measurement."

Cl **202** *SC* **202.5.2.4** *P* **232** *L* **25** # 230

Muma, Scott — Microchip

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

The -V1 measurement should use test fixture 5 in Figure 2-233.

SuggestedRemedy

Change: test fixture 4 (see Figure 202-32)
To: test fixture 5 (see Figure 202-33)

Response *Response Status* **C**

ACCEPT.

Cl **202** *SC* **202.5.2.5** *P* **232** *L* **33** # 190

Chini, Ahmad — Broadcom

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

The specification uses Should for T1 and Shall for V1.

SuggestedRemedy

Use Shall for both T1 and V1.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

(Editor's note: Suggest grammar can be improved. Commenter meant to use "should" for both -T1 and -V1.)

Replace, "When measured with 100 W termination for -T1 PHYs, the transmit differential signal at the MDI should be less than the peak-to-peak values specified in Table 202-17. When measured with 50 W termination for -V1
PHYs, the transmit signal at the MDI shall be less than the peak-to-peak values specified in Table 202-17."

with, "For -T1 PHYs, the transmit differential signal at the MDI should be less than the peak-to-peak values specified in Table 202-17 when measured with a 100 W termination. For -V1 PHYs, the transmit signal at the MDI should be less than the peak-to-peak values specified in Table 202-17 when measured with a 50 W termination."

where W is the ohms symbol

Cl **202** *SC* **202.5.3.2** *P* **233** *L* **31** # 191

Chini, Ahmad — Broadcom

Comment Type **T** *Comment Status* **D** *noise rejection*

No text is provided for this sub clause

SuggestedRemedy

Use the text and diagrams in Chini-3dm_01a_0226 and update the table and figure numbers to 202.??

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

(Editor's note: The PHY must meet the noise tolerance levels defined by the target application, which is beyond scope of this specification. Perhaps, it's better to say this than to include an "informative" specification? Or, modify the proposal accordingly?)

Option 1:

Delete Editor's note on P233, L33-35 and insert, "The PHY must meet the noise tolerance levels defined by the target application. Further specification is beyond the scope of this standard."

Option 2:

Insert text and diagrams on page 2 and 3 of Chini-3dm_01a_0226 with the following exceptions:

Replace, "This informative specification is provided to verify for the receiver's tolerance to broadband stationary noise from a variety of sources."

with, "The PHY must meet the noise tolerance levels defined by the target application. This minimum specification is provided to verify the receiver's tolerance to broadband stationary noise from a variety of sources."

Add, "Further specification is beyond the scope of this standard." after, "at the MAC/PLS service interface."

Update the table and figure numbering

Delete Editor's note on P233, L33-35. Editorial license to conform to Style.

Cl **202** *SC* **202.6** *P* **233** *L* **49** # 232

Muma, Scott — Microchip

Comment Type **T** *Comment Status* **D** *TDD Autoneg*

Support for auto-negotiation over coaxial cables is not defined in Clause 98. Clause 202 provides other means to determine speed and direction through management and/or startup negotiation. So delete references to Clause 98 auto-negotiation.

SuggestedRemedy

Delete editor's note at start of 202.6 and delete ", and the communication and self-configuration functions provided by
the optional (TBD) Auto-Negotiation (see Clause 98)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **202** *SC* **202.7.2** *P* **236** *L* **4** # 141

Zerna, Conrad — NXP

Comment Type **T** *Comment Status* **A** *link segment*

Text is missing

SuggestedRemedy

Copy from section 202.8.2

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Copy from section 202.8.2 with Editor's license granted to adjust text to make it applicable to the -T1 link segment.

Cl **202** *SC* **202.7.2.1** *P* **236** *L* **10** # 142

Zerna, Conrad — NXP

Comment Type **T** *Comment Status* **A** *link segment*

Missing limit

SuggestedRemedy

Copy from section 202.8.2.1

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Copy from section 202.8.2.1 with Editor's license granted to adjust text to make it applicable to the -T1 link segment.

Cl **202** *SC* **202.7.2.2** *P* **236** *L* **16** # 143

Zerna, Conrad NXP

Comment Type **T** *Comment Status* **A** *link segment*

Missing limit

SuggestedRemedy

Copy from section 202.8.2.2

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Copy from section 202.8.2.2 with Editor's license granted to adjust text to make it applicable to the -T1 link segment.

Cl **202** *SC* **202.8.1.1** *P* **237** *L* **6** # 140

Zerna, Conrad NXP

Comment Type **T** *Comment Status* **A** *link segment*

The -0.05*sqrt(f) term is wrong.

Multiply the 15 into the formula, it is not typical for 802.3

SuggestedRemedy

Take formula from https://ieee802.org/3/dm/public/0125/Zerna_802.3dm_01_250122_IL_RL.pdf, page 6 (green line in the graph is limit line)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Take formula from https://ieee802.org/3/dm/public/0125/Zerna_802.3dm_01_250122_IL_RL.pdf, page 6 (green line in the graph is limit line)

Grant Editor's license to insert plot and conform to Style.

Cl **202** *SC* **202.8.1.5** *P* **239** *L* **8** # 144

Zerna, Conrad NXP

Comment Type **T** *Comment Status* **A** *link segment*

Limit line is for pure cable only and too strict for link assembly

SuggestedRemedy

Adopt limit for link segment including connectors, not only cable.
Relax limits by 6dB over the entire frequency range

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Relax limits by 6dB over the entire frequency range

Grant Editor's license to update plot and conform to Style.

Cl **202** *SC* **202.12** *P* **247** *L* **13** # 233

Muma, Scott Microchip

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

The Mode column has the speed in different nomenclature than the rest of the document.

SuggestedRemedy

Editorial license to update Mode to 100M+MultiGBASE, 2.5G+100MBASE, 5G+100MBASE, and 10G+100MBASE nomenclature consistent with other usage in clause 202.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

(Editor's note: Suggest to clarify exact change.)

Replace, "100MBASE-T1/V1" with "100M+MultiGBASE-T1/V1"

Replace, "2.5GBASE-T1/V1" with "2.5G+100MBASE-T1/V1"

Replace, "5GBASE-T1/V1" with "5G+100MBASE-T1/V1"

Replace, "10GBASE-T1/V1" with "10G+100MBASE-T1/V1"

Cl **202** *SC* **202.12** *P* **247** *L* **13** # 234

Muma, Scott
Microchip

Comment Type **T** *Comment Status* **D** *TDD delay*

Given the TDD cycle is 9600ns the LS_PATH delay may require margin. Recommend increasing by 1 pause quanta for margin.

SuggestedRemedy

Change bit times to 1536, Pause Quanta to 3, and Delay to 15360 in Table 202-19 for the row with the LS_PATH values.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.