When looking at the title in a large font it is really too long. We should work with staff to come up with an acceptable title that is in compliance with IEEE SA rules (within the scope of the PAR) but shorter. A modified version could also be adapted for P802.3dh.

The document title occurs on: title page, the boxed paragraph of the front matter introduction on page 10, and internal title on page 21. All should be consistent, either exactly matching the PAR Title, or within the scope as required by SASB Ops Man, 4.2.3.2.

**Suggested Remedy**

One possible alternate amendment title is: "Physical Layer Specifications and Management Parameters for Multi-Gigabit Optical Automotive Ethernet Using Glass Optical fiber". Another alternative is: "Physical Layer Specifications and Management Parameters for Multi-Gigabit Glass Fiber Optical Automotive Ethernet" (closer to P802.3cy title structure)

**Proposed Response**

**Response Status**: W

PROPOSED ACCEPT IN PRINCIPLE.


---

**Comment**: Grow, Robert

**KDPOF, RMG Consulting**

**Comment Type**: G

**Comment Status**: D

**Title**

Minor grammar problem that could be fixed when updating paragraph for the next draft.

**Suggested Remedy**

Change "add a new Physical Layer specifications" to "add new Physical Layer specifications".

**Proposed Response**

**Response Status**: W

PROPOSED ACCEPT IN PRINCIPLE.

See #I-109 response as copied below:

Change "The purpose of the amendment is to add a new Physical Layer specifications and Management Parameters for" to: "This amendment adds Physical Layer specifications and management parameters for"

---

**Comment**: Torres, Luis

**Knowledge Development for Plastic Optical Fiber**

**Comment Type**: E

**Comment Status**: D

**PAR synch**

The draft document description should include the type of fiber specified in PAR.

**Suggested Remedy**

Add "using graded-index glass optical fiber" after "Automotive Ethernet"

---

**Comment**: Wiercokowski, Natalie

**General Motors Company**

**Comment Type**: E

**Comment Status**: D

**PAR synch**

This says "The purpose of the amendment is to add a new Physical Layer specifications and Management Parameters for" and on the next page the abstract says "This amendment adds Physical Layer specifications and management parameters for". 802.3db says "This amendment adds Physical Layer specifications and management parameters for". 802.3ck says "This amendment includes Physical Layer specifications and management parameters for"

**Proposed Response**

**Response Status**: W

PROPOSED ACCEPT IN PRINCIPLE.

Change "The purpose of the amendment is to add a new Physical Layer specifications and Management Parameters for" to: "This amendment adds Physical Layer specifications and management parameters for"
IEEE P802.3cz D3.01 Multi-Gigabit Optical Automotive Ethernet Initial Sponsor ballot comments

**Comment Type** E  **Comment Status** D  **Suggested Remedy**

Change to "optical automotive Ethernet"

**Proposed Response**  **Response Status** W  **PROPOSED ACCEPT.**

---

**Comment Type** E  **Comment Status** D  **Suggested Remedy**

Physical Layer (as at line 5 and page 12)

**Proposed Response**  **Response Status** W  **PROPOSED ACCEPT.**

---

**Comment Type** E  **Comment Status** D  **Suggested Remedy**

Substitute "optical fiber" with "graded-index glass optical fiber"

**Proposed Response**  **Response Status** W  **PROPOSED ACCEPT IN PRINCIPLE.**

Change "optical fiber for use in automotive applications" to "glass optical fiber in the automotive environment" See #I-120
### IEEE P802.3cz D3.01 Multi-Gigabit Optical Automotive Ethernet Initial Sponsor ballot comments

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**Comment Type:** E  **Comment Status:** D  **SuggestedRemedy**

Note should be updated now that we are in SA ballot. "These descriptions will be updated by the P802.3cz TF editor for SA ballot to include latest text from the listed amendments. The list below reflects project timelines as of August 2022."

**Proposed Response:** PROPOSED accept in principle.

**Proposed Response:** PROPOSED accept in principle.

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**Comment Type:** E  **Comment Status:** D  **SuggestedRemedy**

The correct expansion of PMA is Physical Medium Attachment per 802.3-2022 1.5.

**Proposed Response:** PROPOSED accept in principle.

**Proposed Response:** PROPOSED accept in principle.

<table>
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**Comment Type:** E  **Comment Status:** D  **SuggestedRemedy**

Change: 802.3cs-202x To: 802.3cs-2022

**Proposed Response:** PROPOSED accept.

**Proposed Response:** PROPOSED accept.

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**Comment Type:** E  **Comment Status:** D  **SuggestedRemedy**

db was approved

**Proposed Response:** PROPOSED accept.

**Proposed Response:** PROPOSED accept.

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**Comment Type:** E  **Comment Status:** D  **SuggestedRemedy**

ck was approved

**Proposed Response:** PROPOSED accept.

**Proposed Response:** PROPOSED accept.

---

**TYPE:** TR/technical required  **ER/editorial required**  **GR/general required**  **T/technical**  **E/editorial**  **G/general**

**COMMENT STATUS:** D/dispatched  **A/accepted**  **R/rejected**  **RESPONSE STATUS:** O/open  **W/written**  **C/closed**  **U/unsatisfied**  **Z/withdrawn**

**SORT ORDER:** Clause, Subclause, page, line
IEEE P802.3cz D3.01 Multi-Gigabit Optical Automotive Ethernet Initial Sponsor ballot comments

**Comment**

**Comment Type** E  **Comment Status** D  **Commenter** Wienckowski, Natalie  **Company** General Motors Company

The description of ck doesn't match D3.3 of P802.3ck as approved.

**Suggested Remedy**

Change: This amendment to IEEE Std 802.3-2022 adds

To: This amendment includes changes to IEEE Std 802.3-2022 and adds

**Proposed Response**  **Response Status** W

PROPOSED ACCEPT.

**Comment**

**Comment Type** E  **Comment Status** D  **Commenter** Wienckowski, Natalie  **Company** General Motors Company

de was approved

**Suggested Remedy**

Change: 802.3de-202x To: 802.3de-2022

**Proposed Response**  **Response Status** W

PROPOSED ACCEPT.

**Comment**

**Comment Type** E  **Comment Status** D  **Commenter** Wienckowski, Natalie  **Company** General Motors Company

The description of de doesn't match D3.1 of P802.3de as approved.

**Suggested Remedy**

Change description to: Amendment 5 —This amendment includes changes to IEEE Std 802.3-202x to add 10 Mb/s Single-Pair Ethernet point-to-point PHYs to the PHYs supporting the MAC Merge function and the Time Synchronization Service Interface (TSSI).

**Proposed Response**  **Response Status** W

PROPOSED ACCEPT.

**Comment**

**Comment Type** E  **Comment Status** D  **Commenter** Dawe, Piers J G  **Company** NVIDIA

Missing tabs? Tabs don't provide enough space for 3-digit clauses?

**Suggested Remedy**

Fix template?

**Proposed Response**  **Response Status** W

PROPOSED ACCEPT IN PRINCIPLE.

Double-check TOC template. Adjust tab or add as necessary for 3-digit clause.

**Comment**

**Comment Type** E  **Comment Status** D  **Commenter** Dawe, Piers J G  **Company** NVIDIA

Blank line

**Suggested Remedy**

Remove

**Proposed Response**  **Response Status** W

PROPOSED ACCEPT.

**Comment**

**Comment Type** E  **Comment Status** D  **Commenter** Dawe, Piers J G  **Company** NVIDIA

Man- age ment, Opti- cal  Bad hyphenation. 802.3db and 802.3ck don't split "Management". These could be better hyphenated as Management, Opti- cal, but better still not hyphenated. The very large text means that there is room for only about 42 characters per line, which is inconvenient with 10-character words.

**Suggested Remedy**

Stop these words being split here. Ask staff to reduce this font size by about 10%

**Proposed Response**  **Response Status** W

PROPOSED ACCEPT IN PRINCIPLE.

Change to amendment title has been proposed in #i-1 and #i-7.
Laubach, Mark
Tibit Communications, Inc.

Comment Type: E
Comment Status: D
Extra "the"

Suggested Remedy
Replace "the The" with "The"

Proposed Response
Response Status: W
PROPOSED ACCEPT.

Laubach, Mark
Tibit Communications, Inc.

Comment Type: E
Comment Status: D
Extra "the"

Suggested Remedy
Replace "the The" with "The"

Proposed Response
Response Status: W
PROPOSED ACCEPT.

Turner, Michelle
Editorial Coordination

Comment Type: E
Comment Status: D
Title
The title on page 21 and in the introduction box is different from what is cited on page 1.

Suggested Remedy
It should be reconciled to match what is on page 1 as per the modified PAR.

Proposed Response
Response Status: W
PROPOSED ACCEPT IN PRINCIPLE.

Grow, Robert
KDPOF, RMG Consulting

Comment Type: E
Comment Status: D
Phrase with adjectives and no noun

Suggested Remedy
Change "for a 10 Gb/s Ethernet full duplex over" to "for a 10 Gb/s full duplex Ethernet over" or "for 10 Gb/s full duplex over".
Similarly in 1.4.95a, 1.4.116a and 1.4.165a.

Proposed Response
Response Status: W
PROPOSED ACCEPT.

Wienckowski, Natalie
General Motors Company

Comment Type: T
Comment Status: D
PAR synch
P802.3cz split off P802.3dh. In doing this, the P802.3cz objectives were modified to specify glass optical fiber as plastic optical fiber is covered by dh.

Suggested Remedy
Change: multimode optical fiber for use in automotive applications.
To: multimode glass optical fiber for use in automotive applications.

Proposed Response
Response Status: W
PROPOSED ACCEPT.
### IEEE P802.3cz D3.01 Multi-Gigabit Optical Automotive Ethernet Initial Sponsor ballot comments

**Cl 1 SC 1.4.95a P22 L22 # 25**  
Wienckowski, Natalie  
General Motors Company

**Comment Type T**  
Comment Status D  
P802.3cz split off P802.3dh. In doing this, the P802.3cz objectives were modified to specify glass optical fiber as plastic optical fiber is covered by dh.

**Suggested Remedy**  
Change: multimode optical fiber for use in automotive applications.  
To: multimode glass optical fiber for use in automotive applications.

**Proposed Response**  
**Response Status W**  
PROPOSED ACCEPT.

---

**Cl 1 SC 1.4.116a P22 L27 # 26**  
Wienckowski, Natalie  
General Motors Company

**Comment Type T**  
Comment Status D  
P802.3cz split off P802.3dh. In doing this, the P802.3cz objectives were modified to specify glass optical fiber as plastic optical fiber is covered by dh.

**Suggested Remedy**  
Change: multimode optical fiber for use in automotive applications.  
To: multimode glass optical fiber for use in automotive applications.

**Proposed Response**  
**Response Status W**  
PROPOSED ACCEPT.

---

**Cl 1 SC 1.4.165a P22 L32 # 27**  
Wienckowski, Natalie  
General Motors Company

**Comment Type T**  
Comment Status D  
P802.3cz split off P802.3dh. In doing this, the P802.3cz objectives were modified to specify glass optical fiber as plastic optical fiber is covered by dh.

**Suggested Remedy**  
Change: multimode optical fiber for use in automotive applications.  
To: multimode glass optical fiber for use in automotive applications.

**Proposed Response**  
**Response Status W**  
PROPOSED ACCEPT.

---

**Cl 1 SC 1.4.178a P22 L37 # 28**  
Wienckowski, Natalie  
General Motors Company

**Comment Type T**  
Comment Status D  
P802.3cz split off P802.3dh. In doing this, the P802.3cz objectives were modified to specify glass optical fiber as plastic optical fiber is covered by dh.

**Suggested Remedy**  
Change: multimode optical fiber for use in automotive applications.  
To: multimode glass optical fiber for use in automotive applications.

**Proposed Response**  
**Response Status W**  
PROPOSED ACCEPT.

---

**Cl 1 SC 1.4.204a P22 L42 # 29**  
Wienckowski, Natalie  
General Motors Company

**Comment Type T**  
Comment Status D  
P802.3cz split off P802.3dh. In doing this, the P802.3cz objectives were modified to specify glass optical fiber as plastic optical fiber is covered by dh.

**Suggested Remedy**  
Change: operation over optical fiber in the automotive environment  
To: operation over glass optical fiber in the automotive environment

**Proposed Response**  
**Response Status W**  
PROPOSED ACCEPT.

---

**Cl 30 SC 30.5.1.1.2 P24 L40 # 30**  
Wienckowski, Natalie  
General Motors Company

**Comment Type T**  
Comment Status D  
P802.3cz split off P802.3dh. In doing this, the P802.3cz objectives were modified to specify glass optical fiber as plastic optical fiber is covered by dh.

**Suggested Remedy**  
Change: Optical fiber PHY as specified in Clause 166.  
To: Glass optical fiber PHY as specified in Clause 166.  

**Proposed Response**  
**Response Status W**  
PROPOSED ACCEPT.
IEEE P802.3cz D3.01 Multi-Gigabit Optical Automotive Ethernet Initial Sponsor ballot comments

**Comment Type** E Comment Status D EZ

**Suggested Remedy**

Change: 10BASE-AU PCS/PMA/PMD
To: 10GBASE-AU PCS/PMA/PMD

**Proposed Response** Response Status W

PROPOSED ACCEPT.

---

**Comment Type** E Comment Status D EZ

**Suggested Remedy**

The paragraphs that define the different PHY types in Table 44-1 are in Clause order, not the order they appear in the table.

**Proposed Response** Response Status W

PROPOSED ACCEPT.

---

**Comment Type** E Comment Status D EZ

This could be better aligned to the project title in the PAR, which says "for application in the automotive environment". See similar comments to other "introduction to" clauses.

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

---

**Comment Type** E Comment Status D EZ

**Suggested Remedy**

Change: "for automotive applications" to "for application in the automotive environment".

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

---

**Comment Type** E Comment Status D EZ

**Suggested Remedy**

Grammar -- instruction says "rows" but only inserts one row.

**Proposed Response** Response Status W

PROPOSED ACCEPT.
**IEEE P802.3cz D3.01 Multi-Gigabit Optical Automotive Ethernet Initial Sponsor ballot comments**

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**Comment Type**
- E: Editorial
- ER: Editorial Required
- G: General
- GR: General Required
- T: Technical
- TR: Technical Required

**Comment Status**
- A: Accepted
- D: Dispatched
- R: Rejected
- C: Closed
- O: Open
- U: Unsatisfied
- Z: Withdrawn

**Response Status**
- W: Written

**SORT ORDER:** Clause, Subclause, page, line

**COMMENT STATUS:** O: Open, W: Written, C: Closed, U: Unsatisfied, Z: Withdrawn

**PAGE:** 8 of 40

**DATE/TIME:** 11/10/2022 11:18:16
I-38

Comment Type: E  Comment Status: D  Number writing
Don't use "0b" before binary bit values.

SuggestedRemedy
Change: 0b000 to 000.

Proposed Response  Response Status: W
PROPOSED ACCEPT.

I-39

Comment Type: E  Comment Status: D  Number writing
Don't use "0b" before binary bit values.

SuggestedRemedy
Change: 0b000 to 000.

Proposed Response  Response Status: W
PROPOSED ACCEPT.

I-40

Comment Type: E  Comment Status: D  Number writing
Don't use "0b" before binary bit values.

SuggestedRemedy
Change: 0b000 to 000.

Proposed Response  Response Status: W
PROPOSED ACCEPT.

I-41

Comment Type: E  Comment Status: D  Number writing
Don't use "0b" before binary bit values.

SuggestedRemedy
Change: 0b000 to 000.

Proposed Response  Response Status: W
PROPOSED ACCEPT.

I-42

Comment Type: E  Comment Status: D  Number writing
Don't use "0b" before binary bit values.

SuggestedRemedy
Change: 0b000 to 000.

Proposed Response  Response Status: W
PROPOSED ACCEPT.
IEEE P802.3cz D3.01 Multi-Gigabit Optical Automotive Ethernet Initial Sponsor ballot comments

**Comment Type:** E  **Comment Status:** D  **Number writing**

Don't use "0b" before binary bit values.

**Suggested Remedy**

Change: 0b000 to 000

**Proposed Response**

PROPOSED ACCEPT.

---

**Comment Type:** TR  **Comment Status:** D  **EEE**

The current definition of PHD.CAP.LPI does not preclude dynamic changing between 1 and 0. I don't believe this could actually work with dynamic changes while the link is up.

**Suggested Remedy**

on page 103 line 40 insert the following text "The value of PHD.CAP.LPI shall not change."

**Proposed Response**

PROPOSED REJECT.

The issue raised by the author of the comment is already covered by the current draft version.

In page 69, line 10:

"PHD.CAP.LPI is used by the PHY to advertise that Energy-Efficient Ethernet (EEE) is supported and that it is enabled."

In subclause 45.2.3.90.4 it is stated:

"Setting bit 3.2348.0 to one shall enable the advertisement of local PHY EEE ability (see 166.4). Setting bit 3.2348.0 to zero shall prevent establishment of EEE operation with the link partner. If the BASE-U PHY does not have EEE ability (bit 3.2349.0 = 0, see 45.2.3.91.14) setting bit 3.2348.0 has no effect. Changes in EEE advertisement enable value shall only take effect after a PMA reset (see 166.3.4.1). Bit 3.2348.0 has no specified default value."

---

**Comment Type:** E  **Comment Status:** D  **EZ**

"25GBASE-AU after 25GBASE-KR, and insert a row for 50GBASE-AU after 50GBASE-KR" but 25GBASE-CR is for 5 m, 25GBASE-T 30 m, 25GBASE-SR 100 m. Similarly, 50GBASE-CR for 3 m, 50GBASE-SR for 100 m. These AU PHYs are for 40 m.

**Suggested Remedy**

Change "after 25GBASE-KR" to "after 25GBASE-CR" and "after 50GBASE-KR" to "after 50GBASE-CR". To make it easier to review and understand the amendment, include the unchanged row before and after each new row, and change "unchanged rows not shown" to "some unchanged rows not shown".

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.


Include the unchanged row before and after each new row, and change "unchanged rows not shown" to "some unchanged rows not shown".

---

**Comment Type:** E  **Comment Status:** D  **EZ**

"25GBASE-AU after 25GBASE-KR, and insert a row for 50GBASE-AU after 50GBASE-KR" but 25GBASE-CR is for 5 m, 25GBASE-T 30 m, 25GBASE-SR 100 m. Similarly, 50GBASE-KR and 50GBASE-CR do not appear in this table; this will be the first 50G PHY. These AU PHYs are for 40 m.

**Suggested Remedy**

Change "after 25GBASE-KR" to "after 25GBASE-CR" and "after 50GBASE-KR" to "after 50GBASE-CR". To make it easier to review and understand the amendment, include the unchanged row before and after each new row, and change "unchanged rows not shown" to "some unchanged rows not shown".

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.


Include the unchanged row before and after each new row, and change "unchanged rows not shown" to "some unchanged rows not shown".
### IEEE P802.3cz D3.01 Multi-Gigabit Optical Automotive Ethernet Initial Sponsor ballot comments

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**Dawe, Piers J G**  
NVIDIA

**Comment Type**: E  
**Comment Status**: D  
**PAR synch**: 

This could be better aligned to the project title in the PAR, which says "for application in the automotive environment". See similar comments to other "introduction to" clauses.

**Suggested Remedy**  
Change "for use in automotive applications" to "for application in the automotive environment" or possibly "for use in the automotive environment" or just "in the automotive environment".

**Proposed Response**: 
**Response Status**: W  
**PROPOSED ACCEPT IN PRINCIPLE.**

Change to "glass optical fiber in the automotive environment" (See #i-120, #i-48)

<table>
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**Wienckowski, Natalie**  
General Motors Company

**Comment Type**: T  
**Comment Status**: X  
**PAR synch**: 

P802.3cz split off P802.3dh. In doing this, the P802.3cz objectives were modified to specify glass optical fiber as plastic optical fiber is covered by dh.

**Suggested Remedy**  
Change: optical fiber for use in automotive applications.  
To: glass optical fiber for use in automotive applications.

**Proposed Response**: 
**Response Status**: W  
**PROPOSED ACCEPT IN PRINCIPLE.**

Change to "glass optical fiber in the automotive environment" (See #i-125)

<table>
<thead>
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**Wienckowski, Natalie**  
General Motors Company

**Comment Type**: T  
**Comment Status**: X  
**PAR synch**: 

P802.3cz split off P802.3dh. In doing this, the P802.3cz objectives were modified to specify glass optical fiber as plastic optical fiber is covered by dh.

**Suggested Remedy**  
Change: optical fiber for use in automotive applications.  
To: glass optical fiber for use in automotive applications.

**Proposed Response**: 
**Response Status**: W  
**PROPOSED ACCEPT IN PRINCIPLE.**

Change to "glass optical fiber in the automotive environment" (See #i-125)

<table>
<thead>
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</table>

**Dawe, Piers J G**  
NVIDIA

**Comment Type**: E  
**Comment Status**: D  
**PAR synch**: 

This could be better aligned to the project title in the PAR, which says "for application in the automotive environment". See similar comments to other "introduction to" clauses.

**Suggested Remedy**  
Change "for use in automotive applications" to "for application in the automotive environment" or possibly "for use in the automotive environment" or just "in the automotive environment".

**Proposed Response**: 
**Response Status**: W  
**PROPOSED ACCEPT IN PRINCIPLE.**

Change to "glass optical fiber in the automotive environment" (See #i-125)

<table>
<thead>
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**Wienckowski, Natalie**  
General Motors Company

**Comment Type**: T  
**Comment Status**: X  
**PAR synch**: 

P802.3cz split off P802.3dh. In doing this, the P802.3cz objectives were modified to specify glass optical fiber as plastic optical fiber is covered by dh.

**Suggested Remedy**  
Change: optical fiber for use in automotive applications.  
To: glass optical fiber for use in automotive applications.

**Proposed Response**: 
**Response Status**: W  
**PROPOSED ACCEPT IN PRINCIPLE.**

Change to "glass optical fiber in the automotive environment" (See #i-125)
IEEE P802.3cz D3.01 Multi-Gigabit Optical Automotive Ethernet Initial Sponsor ballot comments

Cl 125 SC 125.1.4 P56 L14 # I-51
Wienckowski, Natalie General Motors Company

Comment Type T Comment Status X PAR synch
P802.3cz split off P802.3dh. In doing this, the P802.3cz objectives were modified to specify glass optical fiber as plastic optical fiber is covered by dh.

SuggestedRemedy
Change: optical fiber for use in automotive applications
To: glass optical fiber for use in automotive applications

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Change to "glass optical fiber in the automotive environment" (See #i-125)

Cl 125 SC 125.1.4 P56 L18 # I-52
Wienckowski, Natalie General Motors Company

Comment Type T Comment Status X PAR synch
P802.3cz split off P802.3dh. In doing this, the P802.3cz objectives were modified to specify glass optical fiber as plastic optical fiber is covered by dh.

SuggestedRemedy
Change: optical fiber for use in automotive applications
To: glass optical fiber for use in automotive applications

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Change to "glass optical fiber in the automotive environment" (See #i-125)

Cl 131 SC 131.1.3 P59 L7 # I-53
Wienckowski, Natalie General Motors Company

Comment Type T Comment Status X PAR synch
P802.3cz split off P802.3dh. In doing this, the P802.3cz objectives were modified to specify glass optical fiber as plastic optical fiber is covered by dh.

SuggestedRemedy
Change: optical fiber for use in automotive applications.
To: glass optical fiber for use in automotive applications

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Change to "glass optical fiber in the automotive environment" (See #i-125)

Cl 131 SC 131.1.3 P59 L7 # I-128
Dawe, Piers J G NVIDIA

Comment Type E Comment Status X PAR synch
This could be better aligned to the project title in the PAR, which says "for application in the automotive environment". See similar comments to other "introduction to" clauses.

SuggestedRemedy
Change "for use in automotive applications" to "for application in the automotive environment" or possibly "for use in the automotive environment" or just "in the automotive environment".

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Change to "glass optical fiber in the automotive environment" (See #i-125)

Cl 131 SC 131.1.3 P59 L11 # I-130
Dawe, Piers J G NVIDIA

Comment Type E Comment Status D EZ
*25GBASE-AU after 25GBASE-KR, and insert a row for 50GBASE-AU after 50GBASE-KR* but 25GBASE-CR is for 5 m, 25GBASE-T 30 m. 50GBASE-KR and 50GBASE-CR do not appear in this table; this will be the first 50G PHY. These AU PHYs are for 40 m.

SuggestedRemedy
Change "after 50GBASE-KR" to "after 50GBASE-CR". To make it easier to review and understand the amendment, include the unchanged row before and after each new row, and change "unchanged rows not shown" to "some unchanged rows not shown".

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
"after 50GBASE-CR" to "after 50GBASE-CR" Include the unchanged row before and after each new row, and change "unchanged rows not shown" to "some unchanged rows not shown".

Cl 131 SC 131.1.3 P59 L7 # I-128
IEEE P802.3cz D3.01 Multi-Gigabit Optical Automotive Ethernet Initial Sponsor ballot comments

Wienckowski, Natalie  General Motors Company

Comment Type  T  Comment Status  X  PAR synch
P802.3cz split off P802.3dh. In doing this, the P802.3cz objectives were modified to specify glass optical fiber as plastic optical fiber is covered by dh.

Suggested Remedy
Change: optical fiber for use in automotive applications
To: glass optical fiber for use in automotive applications

Proposed Response  Response Status  W
PROPOSED ACCEPT IN PRINCIPLE.
Change to "glass optical fiber in the automotive environment" (See #i-125)

Dawe, Piers J G  NVIDIA

Comment Type  E  Comment Status  X  PAR synch
"Insert a row for 50GBASE-AU after 50GBASE-CR" but 50GBASE-CR is for 3 m, 50GBASE-SR for 100 m. These AU PHYs are for 40 m.

Suggested Remedy
Change for use in automotive applications to "for application in the automotive environment", "for use in the automotive environment" or "in the automotive environment".

Proposed Response  Response Status  W
PROPOSED ACCEPT IN PRINCIPLE.
The comment seems to address a different issue in line 11 (Copy and paste problem from #i-130?)
The Editor assumes from the suggested remedy that the real comment is:
"This could be better aligned to the project title in the PAR, which says "for application in the automotive environment". See similar comments to other"

Change to "glass optical fiber in the automotive environment" (See #i-125)
Comment Type: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general

COMMENT STATUS: D/dispatched  A/accepted  R/rejected  RESPONSE STATUS: O/open W/written  C/closed  U/unsatisfied  Z/withdrawn

SORT ORDER: Clause, Subclause, page, line

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**Comment Type**: TR

**Comment Status**: D

**50BASE-AU delay increase**

The max PHY delay is 11,264 BT or 2.2 FEC blocks for the whole PHY, for all rates. At the highest rates, this is not reasonable for a range of implementations and not necessary. At the lowest rates, it could be tightened but this may not be necessary.

At 25G, this is 450.96 ns which is 40% of the allowance for 25GBASE-SR PCS and FEC with a similar FEC. At 50G, this is 225.28 ns which is 30% of the allowance for 50GBASE-SR PCS and FEC, again with a similar FEC. In both cases the allowance for this whole PHY is less than for those FECs alone.

The delay should allow for an FEC block (scales with MAC rate), some PMA and PMD functions (partially scale, much smaller) and FEC processing which relates to silicon process and FEC code, not MAC rate. This spec is asking for an aggressive design at 50G which is not necessary; the delay is significantly less than at 25G or slower anyway.

**Suggested Remedy**

Increase the max PHY delay for 50BASE_AU from 11264 BT, 2.2 PQ, 225.28 ns to 14848 BT, 29 PQ, 296.96 ns.

**Proposed Response**

Proposed ACCEPT IN PRINCIPLE.

Change Table 166-24 and Table 131-4 accordingly.

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<td>Dawe, Piers J G</td>
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**Comment Type**: T

**Comment Status**: D

A bit time and a pause quantum are the same for 50BASE-AU as for 50BASE-R, and they would be the same for any other 50G Ethernet, as they are based on MAC bits.

**Suggested Remedy**

Change "50BASE-R" to "50 Gigabit Ethernet" (or "50BASE") twice.

**Proposed Response**

Proposed ACCEPT IN PRINCIPLE.

Page 60, line 38, footnote a: Change "50GBASE-R" with "50 Gigabit Ethernet".

Page 60, line 39, footnote a: Change "50GBASE-R" with "50 Gigabit Ethernet".

<table>
<thead>
<tr>
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<th>L52</th>
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<td>Wienckowski, Natalie</td>
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**Comment Type**: E

**Comment Status**: D

**Number writing**

Don't use "0b" before binary bit values.

**Suggested Remedy**

Change: 0b10101010101010101010101011011010  
To: 10101010101010101010101011011010.

**Proposed Response**

Proposed ACCEPT.

Page 60, line 39, footnote a: Change "50GBASE-R" with "50 Gigabit Ethernet".

Page 60, line 40, footnote a: Change "50GBASE-R" with "50 Gigabit Ethernet".

<table>
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**Comment Type**: E

**Comment Status**: D

This can be shortened

**Suggested Remedy**

Change "The 2.5GBASE-AU, 5GBASE-AU, 10GBASE-AU, 25GBASE-AU, and 50GBASE-AU PHYs" to "These PHYs" (or "These PHY types").

**Proposed Response**

Proposed ACCEPT IN PRINCIPLE.

Change "The 2.5GBASE-AU, 5GBASE-AU, 10GBASE-AU, 25GBASE-AU, and 50GBASE-AU PHYs" to "These PHY types".

<table>
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**Comment Type**: E

**Comment Status**: D

**Number writing**

Don't use "0b" before binary bit values.

**Suggested Remedy**

Change: 0b10101010101010101010101011011010  
To: 10101010101010101010101011011010.

**Proposed Response**

Proposed ACCEPT.

Page 60, line 39, footnote a: Change "50GBASE-R" with "50 Gigabit Ethernet".

Page 60, line 40, footnote a: Change "50GBASE-R" with "50 Gigabit Ethernet".

<table>
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**Comment Type**: E

**Comment Status**: D

This can be shortened

**Suggested Remedy**

Change "The 2.5GBASE-AU, 5GBASE-AU, 10GBASE-AU, 25GBASE-AU, and 50GBASE-AU PHYs" to "These PHYs" (or "These PHY types").

**Proposed Response**

Proposed ACCEPT IN PRINCIPLE.

Change "The 2.5GBASE-AU, 5GBASE-AU, 10GBASE-AU, 25GBASE-AU, and 50GBASE-AU PHYs" to "These PHY types".
### Comment Type: E

**Comment Status:** D

**Comment:**

This gave me the impression that this PHY can be powered down deep sleep style, which according to 78.1.4 is not the case. Compare the clearer text in 137.1: 50GBASE-KR, 100GBASE-KR2, and 200GBASE-KR4 PHYs with the optional Energy-Efficient Ethernet (EEE) fast wake capability may enter the Low Power Idle (LPI) mode to conserve energy during periods of low link utilization (see Clause 78). The deep sleep mode of EEE is not supported.

**Suggested Remedy:**

Change "This clause also specifies an optional Energy-Efficient Ethernet (EEE) capability." to "This clause also specifies an optional Energy-Efficient Ethernet (EEE) fast wake capability." Add: "The deep sleep mode of EEE is not supported."

**Proposed Response:**

PROPOSED ACCEPT.

<table>
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**Response Status:** W

---

### Comment Type: T

**Comment Status:** D

**Comment:**

m-bit binary - what? Adjectives but no noun

**Suggested Remedy:**

m-bit binary number?

**Proposed Response:**

PROPOSED ACCEPT IN PRINCIPLE.

**Response Status:** W

<table>
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**Response Status:** W

---

### Comment Type: E

**Comment Status:** D

**Comment:**

fixed-point rational - what? Adjectives but no noun

**Suggested Remedy:**

fixed-point number?

**Proposed Response:**

PROPOSED ACCEPT IN PRINCIPLE.

**Response Status:** W

<table>
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<td>166.1</td>
<td>62</td>
<td>23</td>
<td>137</td>
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</tbody>
</table>

**Response Status:** W

---
Definitions are generally assumed to be "formal". Unless there's an "informal" definition, this adjective is redundant and potentially confusing. The phrase "definition is specified" is a little clunky, too.

**Suggested Remedy**

Replace, "The fixed-point format formal definition is specified in 115.3.8." with "Fixed-point format is defined in 115.3.8."

**Proposed Response**

PROPOSED ACCEPT.

---

This clause

**Suggested Remedy**

"Clause 4 Media Access Control (MAC) layer": call it IEEE 802.3 MAC sublayer? As these PHYs are full duplex, is the Annex 4A simplified full duplex MAC also suitable?

**Suggested Remedy**

Suggest change "connect one Clause 4 Media Access Control (MAC) layer to the medium." to "connect one IEEE 802.3 Media Access Control (MAC) layer (see Clause 4 and Annex 4A) to the medium."

**Proposed Response**

PROPOSED ACCEPT.

---

"Clause 4 Media Access Control (MAC) layer": call it IEEE 802.3 MAC sublayer? As these PHYs are full duplex, is the Annex 4A simplified full duplex MAC also suitable?

**Suggested Remedy**

Changed "composed by" to "composed of"

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

See #I-140.

---

The reader needs some idea what proportion of the channel is given over to OAM, yet the information to work it out is not privided until 166.2.1.

**Suggested Remedy**

Change "The PHD" to "The 224-bit PHD". Change "a series of encoded PHD sub-blocks" to "a series of 20-bit encoded PHD sub-blocks".

**Proposed Response**

PROPOSED ACCEPT.
I would not call any scrambler "additive" because they rely on XOR gates which are multipliers. I think the point is that these are synchronous or side-stream scramblers, not self synchronous scramblers.

**Suggested Remedy**
Change to the term which is typically used in the base document.

**Proposed Response**

PROPOSED ACCEPT.
"Additive scrambler" is also used in other parts of the base document. For example C/149. However, adjective additive does not add information to the specification so it may be removed.

Page 64 line 11

Remove "with an additive scrambler"

Page 64 line 14
Page 66 line 22
Page 75 line 36
Page 84 line 49
Page 88 line 31
Page 106 line 34
Page 107 line 22
Page 147 line 20,

Remove "additive"

**Comment Type**: T
**Comment Status**: D
**Scrambler naming**

Wienckowski, Natalie
General Motors Company

**State diagram**

**Comment Type**: TR
**Comment Status**: D
**State diagram wording - It doesn't make sense to say "PHD information reliability is checked by CRC calculation and, if it is correct, then it is fed to state diagrams." How do you feed a state diagram?**

**Suggested Remedy**

Change: PHD information reliability is checked by CRC calculation and, if it is correct, then it is fed to state diagrams.

To: PHD information reliability is checked by CRC calculation, hdr_crc16_status, see 166.3.4.1, Figure 166-25, Figure 166-26, and Figure 166-27.

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.
Change: "PHD information reliability is checked by CRC calculation and, if it is correct, then it is fed to state diagrams."

To: "PHD information reliability is checked by CRC calculation and, if it is correct, it is used by the PCS sublayer."

**Interfaces definition**

Mcclellan, Brett
Marvell Semiconductor, Inc.

**Comment Type**: TR
**Comment Status**: D
**Interfaces definition**

There is no definition for PMA interfaces to the PCS.

Without a definition of these interfaces, this specification is technically incomplete.

**Suggested Remedy**

Insert a new subclause 166.2.1 Technology Dependent Interface with definitions for PMA interfaces.

**Proposed Response**

PROPOSED REJECT.

This PHY specification makes use of service interfaces where needed for technical completeness and interoperability.

Inclusion of a PMA interface is not necessary for an implementer to build a compliant and interoperable PHY implementation.

Note that 802.3cz does not specify Autonegotiation, and therefore primitives specified in other clauses to support this feature (i.e, Clause 97 and 98) are not needed.
There is no definition for Technology Dependent Interfaces link_control and link_status which are used throughout Clause 166 without indicating where link_control comes from, or where link_status goes to. Without a definition of these interfaces, this specification is technically incomplete.

**Suggested Remedy**
Insert a new subclause 166.2.1 Technology Dependent Interface with definitions for link_control and link_status

**Proposed Response**
This PHY specification makes use of service interfaces where needed for technical completeness and interoperability.

Autonegotiation, and therefore primitives specified in other clauses to support this feature (i.e., Clause 97 and 98) are not needed.

link_control and link status are mapped in subclause 166.13 (Table 166-22) to MDIO register bits.

**Proposed Response**
This PHY specification makes use of service interfaces where needed for technical completeness and interoperability.

However, the three first paragraphs of the subclause 166.2.1 can be changed to mirror other BASE-R clauses.

Page 66 lines 5 to 7,
Change "The 2.5GBASE-AU, 5GBASE-AU, or 10GBASE-AU PCS couples a 10 Gigabit Media Independent Interface (XGMII), see Clause 46, to the 2.5GBASE-AU, 5GBASE-AU, or 10GBASE-AU Physical Medium Attachment (PMA) sublayer." to
"The PCS service interface of 2.5GBASE-AU, 5GBASE-AU, or 10GBASE-AU is the 10 Gigabit Media Independent Interface (XGMII), which is defined in Clause 46. The 2.5GBASE-AU, 5GBASE-AU, or 10GBASE-AU PCS provides all services required by the XGMII and couple it to the 2.5GBASE-AU, 5GBASE-AU, or 10GBASE-AU Physical Medium Attachment (PMA) sublayer."

Page 66 lines 9 to 10,
Change "The 25GBASE-AU PCS couples a Media Independent Interface for 25 Gb/s operation (25GMII), see Clause 106, to the 25GBASE-AU PMA sublayer."

"The 25GBASE-AU PCS service interface is the Media Independent Interface for 25 Gb/s operation (25GMII), which is defined in Clause 106. The 25GBASE-AU PCS provides all services required by the 25GMII and couple it to the 25GBASE-AU PMA sublayer."

Page 66 lines 12 to 13,
Change "The 50GBASE-AU PCS couples a Media Independent Interface for 50 Gb/s operation (50GMII), see Clause 132, to the 50GBASE-AU PMA sublayer."
to: “The 50GBASE-AU PCS service interface is the Media Independent Interface for 50Gb/s operation (50GMII), which is defined in Clause 132. The 50GBASE-AU PCS provides all services required by the 50GMII and couples it to the 50GBASE-AU PMA sublayer.”

**Comment Status** D

**Response Status** W

**Proposed Response** PROPOSED ACCEPT.

**Suggested Remedy**

- Insert new subclause before 166.2.2 called PCS Reset Function
- PCS Reset initializes all PCS functions. The PCS Reset function shall be executed whenever one of the following conditions occur:
  - Power on (see 165.2.2.8.2).
  - The receipt of a request for reset from the management entity.
- PCS Reset sets pcs_reset = TRUE while any of the above reset conditions hold true. All state diagrams take the open-ended pcs_reset branch upon execution of PCS Reset. The control and management interface shall be restored to operation within 10 ms from the setting of bit 3.0.15.
- Add appropriate PICS (See Clause 149 PCT1 and PCT2)

**Proposed Response** PROPOSED ACCEPT IN PRINCIPLE.

Add the shall statement (as proposed in #I-45) in page 98 line 51 (166.3.4.4 Link monitor state diagram):

"For a communication system composed of two connected link partners as shown in Figure 166-2, the time measured from the last unassertion of pma_reset or pcs_reset to OFF on either link partner, to the assertion of the link_status variable to OK on either link partner, shall be less than 25 ms."

Add PICS accordingly.

Page 82 line 37 already defines pcs_reset variable used in the state diagrams, and it covers conditions a) and b).
Wienckowski, Natalie  General Motors Company

### Comment Type: **E** Comment Status: **D** EZ

**Suggested Remedy**
- Add periods at end of all cells in "Description" column in Table 166-2.

**Proposed Response** Response Status: **W**
- PROPOSED ACCEPT.

---

**Cl 166 SC 166.2.2.1.1**  **P67**  **L35**  # I-59

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

**Suggested Remedy**
- Periods are needed at the end of the sentences in the "Description" column as some cells contain more than one sentence, e.g. the one for PHD.RX.LINKSTATUS

**Proposed Response** Response Status: **W**
- PROPOSED ACCEPT.

---

**Cl 166 SC 166.2.2.2.2**  **P70**  **L46**  # I-145

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

**Suggested Remedy**
- when link is established

**Proposed Response** Response Status: **W**
- PROPOSED ACCEPT IN PRINCIPLE.

---

**Cl 166 SC 166.2.2.3**  **P70**  **L50**  # I-146

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

**Suggested Remedy**
- Change tx_group80x65B to tx_group80x65B (only 3 times)

**Proposed Response** Response Status: **W**
- PROPOSED ACCEPT IN PRINCIPLE.

---

**Cl 166 SC 166.2.2.5**  **P70**  **L36**  # I-61

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

**Suggested Remedy**
- awkward wording

**Proposed Response** Response Status: **W**
- PROPOSED ACCEPT.

---

**Cl 166 SC 166.2.2.1.3**  **P69**  **L49**  # I-60

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

**Suggested Remedy**
- Change: The 224 PHD bits from PHD Builder are followed with 16 cyclic redundancy check bits

**Proposed Response** Response Status: **W**
- PROPOSED ACCEPT.
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<td>PROPOSED ACCEPT.</td>
<td>EZ</td>
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<td>71</td>
<td>41</td>
<td>-148</td>
<td>E</td>
<td>D</td>
<td>All inputs to an equation need to be defined; this is usually done with &quot;where&quot; and a list of definitions. There is text for alpha, the use of j defines itself, but there’s nothing for x.</td>
<td>PROPOSED ACCEPT IN PRINCIPLE.</td>
<td>W</td>
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<td>166.2.2.4</td>
<td>71</td>
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<td>T</td>
<td>D</td>
<td>Please advertise the information provided.</td>
<td>Move Table 166-3 and its introductory sentence to page 71 line 45.</td>
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</tbody>
</table>

**Comment Status:** D/dispatched | A/accepted | R/rejected  
**Response Status:** O/open | W/written | C/closed | U/unsatisfied | Z/withdrawn
Two-column table inconveniently split, last line of first part not thin as would be needed.

**Suggested Remedy**
Set the table so that it isn't split over two pages

**Proposed Response**

**Response Status** W

PROPOSED REJECT.

Tables cannot set to avoid split. However, after implementing #i-150 proposed response, the table may be not splitted over two pages.

---

Redundant wording, codeword and CW are the same

**Suggested Remedy**

Change: codeword CW
To: codeword
Alternatively, if you are defining the definition CW, you could put: codeword (CW)
Also P160L14, P160L25, P160L27

**Proposed Response**

**Response Status** W

PROPOSED ACCEPT IN PRINCIPLE.

Page 73 line 17
Change "codeword CW"
to "codeword (CW)".
Page 160 line 14,
Page 160 line 25,
Page 160 line 27,
Change "codeword CW" to "codeword".

---

This is unreadable. As the 802.3 editorial guidelines say "In text, where this improves clarity, follow the IEEE Editorial Style Manual: Use spaces instead of commas between numbers in tens or hundreds of thousands (e.g., 62 000, 100 000, but 4000).", but doing so trashes clarity here...

**Suggested Remedy**

Change 195 840 to 195840, here, at line 38, and elsewhere in running text to improve readability.

**Proposed Response**

**Response Status** W

PROPOSED ACCEPT.

---

Change: produced by BASE-U binary scrambler shift register
To: produced by the BASE-U binary scrambler shift register

**Suggested Remedy**

Change: produced by BASE-U binary scrambler shift register
To: produced by the BASE-U binary scrambler shift register

**Proposed Response**

**Response Status** W

PROPOSED ACCEPT.
**Comment Type**: E  **Comment Status**: D  
**SuggestedRemedy**

- Change: conform with
- To: conform to
- Also P74L48, P86L37, P86L39

**Proposed Response**  
PROPOSED ACCEPT IN PRINCIPLE.

---

**Comment Type**: E  **Comment Status**: D  
**SuggestedRemedy**

- These arrows are at odd angles but it's a simple 64:64 mapping.

**Proposed Response**  
PROPOSED ACCEPT.

---

**Comment Type**: E  **Comment Status**: D  
**SuggestedRemedy**

- Change: BASE-U PCS
- To: For a BASE-U PCS
- Also P77L14, P77L19, P77L22, P77L51, P77L54, P79L37 (2x), P79L40, P79L41, P79L52, P79L53, P80L36, P80L48, P80L49, P81L29, P81L30, P81L44, P81L45, P82L3, P82L45, P83L18, P83L19, P83L33, P83L45, P83L47, P83L48, P83L51, P84L34, P86L48, P86L50, P87L51 (2x), P90L2, P90L6, P90L29, P91L3

**Proposed Response**  
PROPOSED ACCEPT.
IEEE P802.3cz D3.01 Multi-Gigabit Optical Automotive Ethernet Initial Sponsor ballot comments

**Comment Type** E  **Comment Status** D  
I believe this is referring to multiple paragraphs before this one.

**SuggestedRemedy**
Change: The subscript in the labels defined in the previous paragraph
To: The subscript in the labels defined in the previous paragraphs

**Proposed Response**  **Response Status** W  
PROPOSED ACCEPT.

**Comment Type** E  **Comment Status** D  
The two 65-bit block format tables can be combined for easier reading and understanding.

**SuggestedRemedy**
Make a single table with table footnotes identifying the five(?) rows that apply to 50G or all but 50G.

**Proposed Response**  **Response Status** W  
PROPOSED ACCEPT IN PRINCIPLE.
This point has already been discussed in the draft development and WG balloting.
Separate tables for 50GBASE-U reinforce the differences by allowing a separate definition for 50GBASE-U in the text (Page 77 line 51 and 54) and avoid the use of definition statements in the footnotes.

**Comment Type** T  **Comment Status** D  
maw-power mode" is mentioned here and nowhere else, so not defined. What mode is this? Is this the wrong name? Is "a low power state" in 166.6.1.3.3 related?

**SuggestedRemedy**
Please clarify

**Proposed Response**  **Response Status** W  
PROPOSED ACCEPT IN PRINCIPLE.
Change "low-power mode" to "Low Power = 1 (see Table 166-22)."
IEEE P802.3cz D3.01 Multi-Gigabit Optical Automotive Ethernet Initial Sponsor ballot comments

Comment Type: E  Comment Status: D  Standard Style Manual

The first letter of the items a)-c) under "C" should be capitalized.

Suggested Remedy:
- Capitalize "Eight", "One", and "Two".

Proposed Response: PROPOSED ACCEPT IN PRINCIPLE.
- After ":" or ";", capitalization is not needed.
- See examples in 802.3-2022, page 4603, subclause 113.3.6.2.4.

However, page 83 lines 35 and 36 and other occurrences are not consistent and should be lower case:

Page 83 line 35
Change "Eight" to "eight"

Page 83 line 36
Change "One" to "one"

Page 90 line 37, 38 and 39
Change "A" to "a"

Page 91 line 5, 7 and 9
Change "A" to "a"

Comment Type: TR  Comment Status: D  State diagram

Data is not available to a state diagram, in this case it is available to the PMA.

Suggested Remedy:
- Change: the contents of the different PHD fields be available to the PMA state diagrams
  To: the contents of the different PHD fields be available to the PMA

Proposed Response: PROPOSED ACCEPT IN PRINCIPLE.
- Change: "the contents of the different PHD fields be available to the PMA state diagrams and to the other PCS receive functions that use this information"
  To: "the contents of the different PHD fields be available to the PMA and PCS receive sublayers"

Comment Type: T  Comment Status: D  Local faults reference

Local Faults for 50GMII are different than for XGMII/25GMII. There should be a reference to where Local Faults are defined for each interface.

Suggested Remedy:
- On line 49 insert "The Local Fault ordered set for XGMII and 25GMII is defined in 46.3.4."
- On line 51 insert "The Local Fault ordered set for 50GMII is defined in 81.3.4."

Proposed Response: PROPOSED ACCEPT.

Comment Type: E  Comment Status: D  PCS receiver ordering

awkward wording

Suggested Remedy:
- Change: The PCS receiver ordering shall separate
  To: The PCS receiver shall separate

Proposed Response: PROPOSED ACCEPT IN PRINCIPLE.
- Change: "The PCS receiver ordering shall separate"
  To: "The PCS receiver ordering block shall separate"
There is no definition of the PMA reset function. Without this, it can't be guaranteed that Objective #4: "Define optional startup procedure which enables the time from power_on=FALSE to a state capable of transmitting and receiving valid data to be less than 100ms" can be met.

**Suggested Remedy**

Insert new subclause before 166.3.1 called PMA Reset Function

The PMA Reset function shall be executed whenever one of the two following conditions occur:

a) Power for the device containing the PMA has not reached the operating state.
b) The receipt of a request for reset from the management entity.

PMA Reset sets pma_reset = ON while any of the above reset conditions hold TRUE. All state diagrams take the open-ended pma_reset branch upon execution of PMA Reset. The reference diagrams do not explicitly show the PMA Reset function.

The BASE-AU PMA takes no longer than 100 ms to enter the PCS_DATA state after exiting from reset or low power mode (see Figure 166-23).

Add appropriate PICS (See Clause 149 PR1)

**Proposed Response**

"For a communication system composed of two connected link partners as shown in Figure 166-2, the time measured from the last unassertion of pma_reset or pcs_reset to OFF on either link partner, to the assertion of the link_status variable to OK on either link partner, shall be less than 25 ms."

Add PICS accordingly.

Page 95 line 42 already defines pma_reset variable used in the state diagrams, and it covers conditions a) and b).

**Proposed Response**

Add the following shall statement in page 98 line 51 (166.3.4.4 Link monitor state diagram)

"Symbols shall be transmitted to the PMD with...

**Proposed Response**

Change: clock recovery, and train its equalizers

**Proposed Response**

Change "codewords" to "codeword"
A state diagram cannot "wait" for something. It can remain in a state until something happens.

**Suggested Remedy**

- Change: The state diagram waits for the first estimate of the link margin to be available.
- To: The state diagram remains in the PMAMON_DISABLE state until the first estimate of the link margin is available.

**Proposed Response**

**Response Status:** W

**PROPOSED ACCEPT.**

---

Add a comma after "communication channel" before "and".

**Proposed Response**

**Response Status:** W

**PROPOSED ACCEPT.**

---

A test mode can't be a conformance requirement. It could be used to confirm compliance with a requirement.

**Suggested Remedy**

- Change: BER test mode is not used as a function of
- To: as a function of

**Proposed Response**

**Response Status:** W

**PROPOSED ACCEPT.**
IEEE P802.3cz D3.01 Multi-Gigabit Optical Automotive Ethernet Initial Sponsor ballot comments

Cl 166 SC 166.5.2 P109 L19 # 77
Wienckowski, Natalie General Motors Company
Comment Type E Comment Status D
awkward wording
SuggestedRemedy
Change: being nsq
To: where nsq
PROPOSED ACCEPT IN PRINCIPLE.
Change "where nsq depends on the BASE-AU PMD under test, being nsq = 16 for 50GBASE-AU and 25GBASE-AU, nsq = 8 for 10GBASE-AU, and nsq = 4 for 5GBASE-AU and 2.5BASE-AU." to "where nsq depends on the BASE-AU PMD under test, with nsq = 16 for 50GBASE-AU and 25GBASE-AU, nsq = 8 for 10GBASE-AU, and nsq = 4 for 5GBASE-AU and 2.5BASE-AU."

Cl 166 SC 166.5.4 P109 L38 # 79
Wienckowski, Natalie General Motors Company
Comment Type TR/technical required
Comment Status D
The current text makes no sense. I'm not sure if my interpretation is correct, but this was the only thing I could think that it meant.
SuggestedRemedy
Change: The initial values of the bit sequence A are an 8-bit sequence of 0s, 1, an 11-bit sequence of 0s, 1, 0, 1, and a 24-bit sequence of 0s, 1, 0, 1, and a 24-bit sequence of 0s.
To: The initial values of the bit sequence A are an 8-bit sequence of 0s, a single bit of 1, an 11-bit sequence of 0s, a single bit of 1, and a 24-bit sequence of 0s.
The same issue can be found in 166.5.5, the initial values of A1 and A2.
The other option is to write out all the bits as is done for A3.

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Change "The initial values of the bit sequence A are an 8-bit sequence of 0s, 1, an 11-bit sequence of 0s, 1," to "The initial values of the bit sequence A are an 8-bit sequence of 0s, a single bit of 1, an 11-bit sequence of 0s, a single bit of 1,"
Page 109 line 38,
Change "The initial values of the bit sequence A1 are a 29-bit sequence of 0s, 1, a 27-bit sequence of 0s, 1, 0, a 10-bit sequence of 1s." to "The initial values of the bit sequence A1 are a 29-bit sequence of 0s, a single bit of 1, a 27-bit sequence of 0s, a single bit of 1, a single bit of 0, a single bit of 0, a single bit of 1, and a 24-bit sequence of 0s."
Page 110 line 39
Change "The initial values of the bit sequence A2 are 0, 1, 1, 0, 1, a 9-bit sequence of 0s, 1, 0, 0, and a 10-bit sequence of 1s."
To "The initial values of the bit sequence A2 are a single bit of 0, a 2-bit sequence of 1s, a single bit of 0, a single bit of 1, a 9-bit sequence of 0s, a single bit of 1, a 2-bit sequence of 0s, and a 10-bit sequence of 1s."

Comment Type TR/technical required
Comment Status D
Primitive parameters
How do you generate a pattern toward a primitive? This doesn't make sense.
SuggestedRemedy
Change: The PMA generates this pattern towards the primitive
To: The PMA generates this pattern for the primitive
Also P109L28
Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Page 109 line 21,
Change "The PMA generates this pattern towards the primitive PMD_COMSIGNAL.request (see 166.6.1.1)." to "the PMA generates this pattern for the service interface below the PMA via the PMD_COMSIGNAL.request primitive (see 166.6.1.1)."
Wienckowski, Natalie  
General Motors Company

Comment Type: E  
Comment Status: D

Don't use "0b" before binary bit values.

Suggested Remedy

Change: 0b1010101001010101010110101010101011011010
To: 1010101001010101010110101010101011011010

Proposed Response  
Response Status: W

PROPOSED ACCEPT.

Wienckowski, Natalie  
General Motors Company

Comment Type: E  
Comment Status: D

missing article

Suggested Remedy

Change: connected to BASE-U PMA
To: connected to a BASE-U PMA

Proposed Response  
Response Status: W

PROPOSED ACCEPT.

Wienckowski, Natalie  
General Motors Company

Comment Type: TR  
Comment Status: D

How do you exchange signal amplitude?

Suggested Remedy

Change: supports the exchange of signal amplitude
To: supports the exchange of signals of different amplitudes
Also P113L7

Proposed Response  
Response Status: W

PROPOSED ACCEPT IN PRINCIPLE.
Page 112 line 17,
Change "supports the exchange of signal amplitude" to "supports the exchange of communication signals"
Page 113 line 7,
Change "in the form of a signal amplitude" to "in the form of a communication signal".
IEEE P802.3cz D3.01 Multi-Gigabit Optical Automotive Ethernet Initial Sponsor ballot comments

What is an amplitude parameter? This doesn't make sense.

Suggested Remedy

- **Change:** The PMD transmit function shall convert the amplitude parameter tx_signal requested by the PMD service interface primitive PMD_COMSIGNAL.request.
- **To:** The PMD transmit function shall convert the amplitude of the tx_signal parameter requested by the PMD service interface primitive PMD_COMSIGNAL.request.

Also on P114L39, PMD1, and PMD3.

**PROPOSED ACCEPT IN PRINCIPLE.**

Page 114 line 21,

**Change:** "The PMD transmit function shall convert the amplitude parameter tx_signal requested by the PMD service interface primitive PMD_COMSIGNAL.request."

**To:** "The PMD transmit function shall convert the communication signal amplitude given by the tx_signal parameter requested by the PMD service interface primitive PMD_COMSIGNAL.request."

Page 114 line 39,

**Change:** "The PMD receive function shall convert the optical signal received at the MDI into the amplitude parameter rx_signal of the PMD service interface primitive PMD_COMSIGNAL.indication."

**To:** "The PMD receive function shall convert the optical signal received at the MDI into the communication signal amplitude given by the rx_signal parameter of the PMD service interface primitive PMD_COMSIGNAL.indication."

Page 151 line 29,

**Change:** "The PMD transmit function converts the optical signal p at TP2 according to Equation (166–7)."

To: "The PMD transmit function converts the communication signal amplitude given by the tx_signal parameter into optical signal p at TP2 according to Equation (166–7)."

Page 151 line 38,

**Change:** "The PMD receive function converts the optical signal received at the MDI into the amplitude parameter rx_signal."

To: "The PMD receive function converts the optical signal received at the MDI into the amplitude parameter rx_signal."

*PROPOSED ACCEPT IN PRINCIPLE.*

See #I-86.
IEEE P802.3cz D3.01 Multi-Gigabit Optical Automotive Ethernet Initial Sponsor ballot comments

Cl 166  SC 166.6.3.2  P116  L40  # I-107
Murty, Ramana  Broadcom Inc.

Comment Type  TR  Comment Status  D  Wavelength
Center wavelength (range) is defined over the narrow range of 970 - 990 nm. The justification for not accepting other source wavelengths, such as the one given in perezaranda_3cz_01b_080621_vcsel_reliability.pdf, are erroneous. The wavelength range should be expanded to allow a wide range of suppliers to participate.

Suggested Remedy
Expand the center wavelength range to 840 - 990 nm.

PROPOSED REJECT.
Proposal already discussed at Montreal plenary meeting (July 2022). Consensus to modify wavelength range was not reached (see https://www.ieee802.org/3/cz/public/jul_2022/Minutes_3cz_01_0722.pdf Motion #3 and comment #32 to P802.3cz/D2.1).

Range of +/- 10 nm is consistent with other projects that use different nominal center wavelength, i.e. C/138 138.7.1, Table 138-8. C/95 95.7.1, Table 95-6. C/52 52.5.1, Table 52-7.

The TX and RX characteristics have been derived with margin considering real 980nm device samples operating in a range of backside temperature between -40ºC and +125ºC and bias current of up to 8 mA. It was demonstrated during the project that required wear-out reliability cannot be achieved with 850nm VCSEL devices using similar current densities. It was also demonstrated that in order to marginally meet the wear-out reliability requirements, the bias current should be reduced < 5 mA in high temperature, therefore reducing the speed and optical power and increasing the RIN of the VCSEL devices, hence making much more difficult the PHY implementation. On top of that, it was also demonstrated that 980nm devices are much less dependent with temperature, so they present a much more uniform threshold current between -40 and 125ºC. 850nm devices could be optimized for high temperature, but degrading (or making impossible) operation at low temperature and viceversa.

Technology for manufacturing 980nm VCSEL devices is widely available. It was developed during last decade for sensor devices. Producing reliable, high speed, low noise, and efficient VCSELs at 980nm is much easier than at 850nm. This will allow to expand the availability of manufacturers that can supply photonics for BASE-AU PHYs in automotive industry.

Cl 166  SC 166.6.3.2  P117  L16  # I-163
Dawe, Piers J G  NVIDIA

Comment Type  TR  Comment Status  D  Wavelength
The extinction ratio spec should make allowance for laser speed, the wide temperature range and the extra accuracy desired when using PAM4. This has 4 dB at all rates, 50GBASE-SR has 3 dB. With further study, 3.5 dB might be feasible.

Suggested Remedy
For 50GBASE-AU, change 4 dB to 3 dB.

PROPOSED REJECT.
Reference receiver of 50GBASE-SR is different of 50GBASE-AU.

Feasibility of min 4 dB has been determined based on measurements at extreme temperatures. See examples in contribution perezaranda_3cz_01_221011_comment_i_163.pdf).

Decreasing min ER will impact min OMA at TX for the same VCSEL bias and same max VCSEL to TP2 insertion loss, which finally impact in the link budget. Min ER decrease might be compensated with bias increase. However, it is against reliability considerations, even considering longer wavelength VCSELs.
Comment Type TR  Comment Status D  Wavelength
Center wavelength (range) is defined over the narrow range of 970 - 990 nm. "Rainbow" photodetectors that can detect a wide range of wavelengths have been widely used in datacom.

Suggested Remedy
Expand the center wavelength range to 840 - 990 nm.

Proposed Response Response Status W
PROPOSED REJECT.
Proposal already discussed at Montreal plenary meeting (July 2022). Consensus to modify wavelength range was not reached (see https://www.ieee802.org/3/cz/public/jul_2022/Minutes_3cz_01_0722.pdf Motion #3 and comment #32 to P802.3cz/D2.1).

Expanding the center wavelength range to 840 - 990 nm will imply that all the components between light emission and reception, including the photodetector, have to be validated and qualified to meet all the requirements for the full range of spectrum. This includes coupling optics in TX and RX as well as inline connections and fiber. Assuming butt-coupling and physical contact connectivity, which can be wavelength agnostic, as a feasible solution for automotive application just because it is used in data-centers may be an erroneous assumption.

Expanded beam optics, physical contact, and air gap connections are under consideration by connector makers to supply a robust, low cost, and fully automated terminated optical connectivity technology to automotive industry based on OM3 fiber. In the implementation of optical coupling, lenses and EBO connections, wavelength dependent refractive index and absorption of used materials needs to be considered. If same materials have to support reflow soldering, automotive environmental and mechanical conditions and perform well in a much wider range of wavelengths, then we are imposing constraints that will limit the solutions and will finally increase the cost without necessity.

Transceiver is not only affected by the materials used for optical coupling but also photodetector.

Comment Type E  Comment Status D  Table combination
Tables 166-13. 14 can be combined

Suggested Remedy
combine the tables

Proposed Response Response Status W
PROPOSED REJECT.
The combination of tables may result in an overly complicated final table, and the need to distinguish between G=1 and G=2 using footnotes.

Dawe, Piers J G  NVIDIA
Comment Type T  Comment Status D  BT4 bandwidths
These BT4 bandwidths are 75.3% of the signalling rate. The ones in the scope hardware are already e.g. 70.1%, 73% of these signalling rates (75% of slightly different signalling rates). It's not worth creating new scope hardware for such minor differences

Suggested Remedy
Align with the bandwidths that scopes actually have: e.g. 7.5, 19.34 GHz.

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
In the specification of the BT4 filter bandwidths, it has been considered that system impulse response correction is implemented in the sampling oscilloscope, which is usual practice in modern equipment. In case of real-time oscilloscopes, BT4 is usually implemented in digital filters, so frequency configuration is highly flexible. Therefore, the bandwidth can be adjusted to any value related with baud-rate. E.g. 16.4 GHz of TDFOM setup (166.7.8.1) is not related with any other data-rate, but specified so that input BT4 filter approximates the worst case EMB of 40 m OM3 at 980nm. However, the noise should have taken into account, and the reuse of bandwidths already used in other Clauses can be an advantage.

Subclause 166.5.2:
Change bandwidth to 7.5 GHz for 2.5, 5 and 10GBASE-AU (mirrors Clause 52 bandwidth)
Change bandwidth to 19.34 GHz for 25 and 50GBASE-AU (mirrors Clause 95 and 112 bandwidth for Tx Eye).

Subclause 166.5.2:
Change nsq value for 2.5GBASE-AU from 4 to 2
IEEE P802.3cz D3.01 Multi-Gigabit Optical Automotive Ethernet Initial Sponsor ballot comments

### Comment 166 (SC 166.7.4.1)

**Comment Type:** E  
**Comment Status:** D  
**Proposed Response:** Move anchor for Table 166-15 so that the table appears after the text, "fourth-order Bessel-Thomson filter response."

**Suggested Remedy:**

Move anchor for Table 166-15 so that the table appears after the text, "fourth-order Bessel-Thomson filter response."

**Proposed Response:**

PROPOSED ACCEPT.

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**Comment 167 (SC 166.7.4.1)

**Comment Type:** T  
**Comment Status:** D  
**Proposed Response:** For 10G, change from 100 kHz to 400 kHz to keep in proportion with 25G and 50G. For 5G, consider changing 100 kHz to 200 kHz.

**Suggested Remedy:**

For 10G, change from 100 kHz to 400 kHz to keep in proportion with 25G and 50G. For 5G, consider changing 100 kHz to 200 kHz.

**Proposed Response:**

PROPOSED REJECT.

CRU corner is lower than usual.

In [https://www.ieee802.org/3/cz/public/8_feb_2022/perezaranda_3cz_03b_080222_test_methods.pdf](https://www.ieee802.org/3/cz/public/8_feb_2022/perezaranda_3cz_03b_080222_test_methods.pdf) was explained the rational behind the CRU low frequency corner.

This frequency corner is fundamentally affected by the LPI operation mode. After LPI is detected, while receiving Refresh codewords, the receiver only needs to sample, equalize and detect a small portion of symbols of each CW (last n 65-bit blocks plus the first m repeated 20-bit PHD sub-blocks for Wake detection and robust decoding of PHD).

Both clocks, TX and RX, should experience small deviation during Refresh CW transmission. The minimum clock recovery actuation period is equivalent to a CW (5440 bits) transmission time. For 50 Gb/s CW time is 108.8 ns. For 2.5 Gb/s CW transmission time is 2176 ns.

A CRU corner frequency of less than 1/4 the CW transmission rate is considered (Nyquist frequency of OJTF of RX CDR will be 1/2 CW transmission rate, so 1/4 is in the middle of the band of the control filter loop, so it is doable).

Under this consideration, the CRU corner frequency would be 2 MHz for 50 Gb/s, and 100 kHz for 2.5 Gb/s operation.

In general lower corner-frequencies in CRU spec will translate in an easier RX CDR implementation, and higher ones in easier TX PLL implementation. It is a trade-off, and in general we can consider that can scale with rate.

However, if we consider that multi-rate PHY components are expected in the market, then it is desirable to use the same PLL in some of them to simplify the implementation.

Multi-rate consideration for CRU specification was re-considered in two rate ranges in D2.1 comment resolution.

With this re-consideration we can make easier to meet the specifications in high rate modes, i.e. easier TX PLL design without penalizing the RX CDR. This does not prevent
implementation of multi-rate components support from 2.5 to 50 Gb/s, because different
PLL/VCO technology is expected for rates of <= 10 Gb/s and >= 25 Gb/s. Based on that,
two CRU corner frequencies where considered for two data rate-ranges:
- First range: 2.5, 5, and 10Gb/s. CRU corner freq = 100 kHz
- Second range: 25 and 50 Gb/s. CRU corner freq = 1 MHz.

Wienckowski, Natalie
General Motors Company

Comment Type: T
Comment Status: D
Suggested Remedy:
Change: 50GBASE-A
To: 50GBASE-AU

Proposed Response: PROPOSED ACCEPT.

Proposed Response: PROPOSED ACCEPT IN PRINCIPLE.
The description of the filters is consistent and mathematically coherent. z represents the delay and it is necessary to specify the B(z) and F(z) polynomials.

Add definition of z as follows:
Page 125, line 42,
Add at the end of the line "z^-i represents a delay of i unit intervals"

Page 130, line 37,
Add at the end of the line "z^-i represents a delay of i unit intervals"

Proposed Response: PROPOSED ACCEPT IN PRINCIPLE.
Change "For BASE-AU with G = 2, the antialiasing filter is composed of the concatenation of two first-order low-pass filter with -3 dB bandwidth of S × 26.5625 / 2 GHz each one."
to
"For BASE-AU with G = 2, the antialiasing filter is composed of the concatenation of two first-order low-pass filter with -3 dB bandwidth of S × 26.5625 / 2 GHz each one."

See #I-140.
I would not expect that a 2.5G or 5G link would benefit much from the second and third DFE tap.

Suggested Remedy
Consider reducing to 1 or 2 DFE taps

PROPOSED ACCEPT IN PRINCIPLE.

According to equation (166-11), the first coefficient of $B(z)$ polynomial is 1 w/o delay.

According to Figure 166-41 the transmitted patter is filtered by $1 - B(z)$, which is equivalent to a filter with $N_B - 1$ taps.

Therefore, the number of feedback taps considered in the DFE is $N_B - 1$: 2 feedback taps for 25, 10, 5, 2.5 Gb/s and 1 feedback tap for 50 Gb/s, which is consistent with one of the options proposed by the commenter.

The current number of feedback taps for 2.5 and 5 Gb/s offers more flexibility for TX and RX implementation.

$F(z)$ and $B(z)$ are part of a reference RX used for TDFOM and SRS calibration. There might be implementations where no $B(z)$ is implemented in the receiver, or higher or lower number of feedback taps are used.

In a multi-rate PHY is expected that same RX circuitry will be used for different rates, e.g. 2.5, 5, and 10 Gb/s.

However, the readability of the text may be improved by using a definition of $B(z)$ that mirrors the one given in Clause 93.

Figure 166-41:
Change "1 - B(z)" to "B(z)".
Eq (166-11):
Change to $B(z) = \sum(i=1,N_b, b[i]z^{-i})$
Table 166-11:
Change number of taps of the $B(z)$ filter ($N_B$): "3" to "2", and "2" to "1".
Page 126, line 14:
Change "1-B(z)" to "-B(z)".
Figure 166-43, title of figure:
Change "1-B(z)" to "-B(z)"
Figure 166-43:
Change "b[N_B-2]" to "-b[N_B-1]" and "-b[N_B-1]" to "-b[N_B]".
Eq (166-12):
Change "N_B-1" to "N_B".

Inconsistent usage of $F$ and $f$ for the same function.

Suggested Remedy
Change $f$ to $F$ in Equation (166-10), also in Figure 166-42 and Equation (166-12).

F(z) and B(z) are polynomials that uniquely specify equalizing filters with coefficients equal to $f[i]$ and $b[i]$, as specified in equations (166.10) and (166-11).

Inconsistent usage of $B$ and $b$ for the same function.

Suggested Remedy
Change $b$ to $B$ in Equation (166-11), also in Figure 166-43 and Equation (166-12).

F(z) and B(z) are polynomials that uniquely specify equalizing filters with coefficients equal to $f[i]$ and $b[i]$, as specified in equations (166.10) and (166-11).

Inconsistent usage of $STDFOM$.

Suggested Remedy
Change " transmitter with values of $STDFOM$" to " transmitter with values of $STDFOM$ Also L20, L24, L28, and L32.

PROPOSED ACCEPT.
Comment: This is a confusing run-on sentence.

Suggested Remedy:
Change: Stressed receiver sensitivity condition 1 and 2 shall be within the limits given in Table 166–10 if measured using the methodology defined in 166.7.10.2 for condition 1 and 2 respectively, respectively, using the test patterns for stressed receiver sensitivity specified in Table 166–13 for BASE-AU with G = 1 or in Table 166–14 for BASE-AU with G = 2.

To: Stressed receiver sensitivity shall be within the limits given in Table 166–10 if measured using the methodology defined in 166.7.10.2, for conditions 1 and 2 respectively. The test patterns for stressed receiver sensitivity that are used are those specified in Table 166–13 for BASE-AU with G = 1 or in Table 166–14 for BASE-AU with G = 2.

Proposed Response: PROPOSED ACCEPT.

Comment:
Subject verb agreement

Suggested Remedy:
Change: The FFE filter P(z) have
To: The FFE filter P(z) has

Proposed Response: PROPOSED ACCEPT.

Comment:
Alternatively and also are redundant.

Suggested Remedy:
Change: Alternatively, OMATP3 can be also measured using the method described in 166.7.4.
To: Alternatively, OMATP3 can be measured using the method described in 166.7.4.

Proposed Response: PROPOSED ACCEPT.
IEEE P802.3cz D3.01 Multi-Gigabit Optical Automotive Ethernet Initial Sponsor ballot comments

<table>
<thead>
<tr>
<th>Cl 166</th>
<th>SC 166.9.2</th>
<th>P134</th>
<th>L12</th>
<th>#</th>
<th>I-99</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wienckowski, Natalie</td>
<td>General Motors Company</td>
<td>Add a note to Figure 166-46 to clarify not all speeds support 4 connections as shown.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SuggestedRemedy**

Inset: Note - Not all BASE-AU speeds support 4 connections in the channel as shown in this Figure.

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

<table>
<thead>
<tr>
<th>Cl 166</th>
<th>SC 166.9.2.1</th>
<th>P135</th>
<th>L33</th>
<th>#</th>
<th>E-170</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dawe, Piers J G</td>
<td>NVIDIA</td>
<td>Up to 10 dB of connector loss! This looks like a modal noise problem, unless there is something that ensures that most of this loss is NOT mode selective - which I don't see.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SuggestedRemedy**

Reduce the maximum total connection insertion loss or provide rules for what sort of loss is allowed.

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

10 dB is max connections insertion loss for 10, 5 and 2.5 Gb/s. Part of this insertion loss is attributed to be mode selective, therefore, to cause modal noise. In Table 166-11, channel insertion loss is consistent with Table 166-21. Channel insertion loss of Table 166-11 considers 0.1 dB max (0.08 rounded) fiber attenuation and allocation of 0.4 dB for cable attenuation penalty due to aging.

**Contribution**

https://www.ieee802.org/3/cz/public/3_aug_2021/perezaranda_3cz_01a_030821_link_budg et_proposal.pdf shows:

- Modal noise impact in receiver sensitivity at several rates
- Calculation of min non-MSL IL for inline connections and therefore max MN, and RX sensitivity as a function of MSL IL

Based on this, allocation for modal noise is calculated for all the data-rates

The 802.3cz project has considered much higher insertion loss in the inline connections than the BASE-SR projects. Reasons behind:

- It is not clear that physical contact connection will be able to meet environmental (e.g. grease, dust conditions, metallic particles, in car automated assembly plant, or a garage) and mechanical (e.g. vibrations, scoop proof) requirements with the cost constraints of automotive application.
- During more than two decades, SI-POF has been used in automotive applications (e.g. MOST, 1000BASE-RHC), implementing butt-coupling with air-gap in inline connections to avoid end face surfaces of fiber are damaged by mechanical and environmental conditions.
- Expanded beam optics, physical contact, and air gap connections are under consideration by connector makers to supply a robust, low cost, and fully automated terminated optical connectivity technology to automotive industry based on OM3 fiber.
- 802.3cz PHYs support the highest technically feasible insertion loss that enable OM3 can be accepted by the automotive industry in terms of performance, environmental and mechanical conditions, and cost.

In Table 166-11, the row of allocation for penalties includes modal noise plus macro-
bending loss (0.2 dB).

Page 118 line 49:

Change footnote c: "Link penalties are used for link budget calculations. They are not requirements and are not meant to be tested."
to "The allocation for penalties considers addition of two factors, the receiver sensitivity loss caused modal noise and the macro-bending loss. Maximum macro-bending loss considered is 0.2 dB."

---

**Comment:**

**Comment Type:** E

**Comment Status:** D

**Comment:**

**Suggested Remedy:**

Change: OAM channel functionality shall be active when both the transmitted and received fields PHD.CAP.OAM, are equal to one, and disabled otherwise.

To: OAM channel functionality shall be active when both the transmitted and received fields, PHD.CAP.OAM, are equal to one, and disabled otherwise.

**Proposed Response:**

Response Status: W

**PROPOSED ACCEPT.**

---

**Comment:**

**Comment Type:** E

**Comment Status:** D

**Comment:**

**Suggested Remedy:**

Change: Received signal

To: The received signal

**Proposed Response:**

Response Status: W

**PROPOSED ACCEPT.**

---

**Comment:**

**Comment Type:** E

**Comment Status:** D

**Comment:**

**Suggested Remedy:**

Either put the (a) in both column headers, or placed it on the Table title.

**Proposed Response:**

Response Status: W

**PROPOSED ACCEPT IN PRINCIPLE.**

**Proposed Call to Footnote:**

Add 1.3 Norative references and in it add

AEC - Q100: Failure Mechanism Based Stress Test Qualification For Integrated Circuits

**Proposed Acceptance:**

Although currently the temperature grades are the same as defined in AEC-Q100, eventual changes to the AEC-Q100 specification may lead to a maintenance requirement to change IEEE 802.3 document.

The Editor believes it is more practical to keep both temperature grade definitions separate, but with the same values at the date of publication of the standard.

Page 138 line 11,

Change "temperature grades" to "temperature classes"
<table>
<thead>
<tr>
<th>CI</th>
<th>SC</th>
<th>P</th>
<th>L</th>
<th>#</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Subject verb agreement</th>
<th>Suggested Remedy</th>
<th>Proposed Response</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>166</td>
<td>166.14.3</td>
<td>138</td>
<td>49</td>
<td>-103</td>
<td>E</td>
<td>D</td>
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<td>Change: environment(s) require</td>
<td></td>
<td>PROPOSED ACCEPT.</td>
</tr>
<tr>
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<td>166A.3</td>
<td>159</td>
<td>1</td>
<td>105</td>
<td>E</td>
<td>D</td>
<td></td>
<td>Subject verb agreement</td>
<td></td>
<td>PROPOSED ACCEPT.</td>
</tr>
<tr>
<td>166B</td>
<td>166B.2</td>
<td>160</td>
<td>31</td>
<td>-172</td>
<td>E</td>
<td>D</td>
<td></td>
<td>Change: where explicitly defines</td>
<td></td>
<td>PROPOSED ACCEPT.</td>
</tr>
<tr>
<td>166A</td>
<td>166A.2</td>
<td>156</td>
<td>38</td>
<td>-171</td>
<td>E</td>
<td>D</td>
<td></td>
<td>Table is hard to use because it is split over two pages; font too small.</td>
<td>Adjust the orphan rows setting for the three tables in the annexes so that they stay together on one page. It looks like the 7 point entries can be changed to 8 point.</td>
<td>PROPOSED ACCEPT IN PRINCIPLE.</td>
</tr>
<tr>
<td>166B</td>
<td>166B.2</td>
<td>156</td>
<td>38</td>
<td>-171</td>
<td>E</td>
<td>D</td>
<td>Table title should include &quot;example&quot;</td>
<td>Example RS-FEC(544,522) codeword or RS-FEC(544,522) codeword example</td>
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<td></td>
</tr>
<tr>
<td>166B</td>
<td>166B.2</td>
<td>156</td>
<td>38</td>
<td>-171</td>
<td>E</td>
<td>D</td>
<td>Table title should include &quot;example&quot;</td>
<td>Example RS-FEC(544,522) codeword or RS-FEC(544,522) codeword example</td>
<td>PROPOSED ACCEPT.</td>
<td></td>
</tr>
</tbody>
</table>

Comment Type: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general

COMMENT STATUS: D/dispatched A/accepted R/rejected

RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn

SORT ORDER: Clause, Subclause, page, line
The abstract should include the type of fiber specified in PAR.

Suggested Remedy

Add "using graded-index glass optical fiber" after "automotive Ethernet"

Proposed Response

PROPOSED ACCEPT.