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<td>EZ</td>
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<td>Multiple problems: 1) typo &quot;IEE&quot;; 2) different grammar than on published standards (&quot;of&quot; instead of &quot;to&quot;); 3) as is indicates we are likely to be first amendment to IEEE Std 802.3-20xx his does not agree with front matter introduction (nor current timelines).</td>
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<td>(Amendment to IEEE Std 802.3TM-20xx as amended by [list to be populated during publication process]). Request update of draft templates (&quot;of&quot; instead or &quot;to&quot;).</td>
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<td>Per resolution of comments on P802.3cy snd P802.3cz PARs, we should be using optical or electrical as a modifier of &quot;Automotive Ethernet&quot;.</td>
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<td>Change &quot;Automotive Optical&quot; to &quot;Optical Automotive&quot; here.</td>
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<td>Add Automotive Ethernet to the list.</td>
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<td>Obsolete note. While the Roman and Arabic numbering convention described in this note was once the style, it is no longer the style (see 2020 IEEE Standards Style Manual 11.1).</td>
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<td>Delete this Editor's Note. Request update of 802.3 template if it is still there (I don't have FrameMaker to check current template on the web site.).</td>
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IEEE P802.3cz D1.0 Multi-Gig Automotive Optical Ethernet PHY 1st Task Force review comments

**Comment**

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

The TBD here and above on line 17 are perhaps misleading as this list does not affect technical completeness of the draft, and the list will be determined by the voter list generated after the WG meeting at which WG ballot is approved.

**Suggested Remedy**

Delete TBD at line 4, consider replacing the TBD at line 17 with an Editor's Note that the list should be added after initial WG ballot.

**Proposed Response**

PROPOSED ACCEPT.

**Comment**

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

Old WG officer list

**Suggested Remedy**

Delete line for Pete and *, Phase 2 from Jon's line.

**Proposed Response**

PROPOSED ACCEPT.

**Comment**

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

Delete TBD here, line 28 and line 34.

**Suggested Remedy**

Lists and dates will be completed by publication editor during publication preparation.

**Proposed Response**

PROPOSED ACCEPT.

**Comment**

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

Sponsor ballot is now an obsolete term.

**Suggested Remedy**

Change "Sponsor ballot" to "SA ballot".

**Proposed Response**

PROPOSED ACCEPT.

**Comment**

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

It is customary to not include complete year on any unapproved/unpublished standard.

**Suggested Remedy**

Change "2022" to "20XX" here as well as page 12 and lines 1 and 7.

**Proposed Response**

PROPOSED ACCEPT.

**Comment**

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

The current P802.3ck draft has a self description.

**Suggested Remedy**

P802.3ck/D1.4 description is: This amendment includes changes to IEEE Std 802.3-2018 and adds Clause 161 through Clause 163, Annex 120F, Annex 120G, and Annex 162A through Annex 162D. This amendment includes Physical Layer specifications and management parameters for 100 Gb/s, 200 Gb/s, and 400 Gb/s electrical interfaces based on 100 Gb/s signaling.

**Proposed Response**

PROPOSED ACCEPT.
As the editor’s note implies actual amendment order and which amendments will be included in the next revision won’t be very clear until early 2022. Mr. Law in early February proposed amendment numbers up to Amendment 17. P802.3cs (proposed Amendment 15) will very likely be an amendment to 802.3-2018. P802.3ck (proposed Amendment 16) is also expected to begin WG ballot in March (but with a longer timeline). P802.3cw (proposed Amendment 17), P802.3cx, and P802.3 db (no draft yet) all have timelines projecting completion about the same time as P802.3ck. So we could be anywhere from Amendment 1 to Amendment 6 based on February data. With this uncertainty, we probably should not assume amendment numbers because it might lead others to assume they have been assigned.

**Suggested Remedy**

Either leave number blank on all amendments listed until they are assigned by WG leadership. Or only include the descriptions.

**Proposed Response**

PROPOSED ACCEPT.

---

The current P802.3cx draft has a self description.

**Suggested Remedy**

The P802.3cx/D0.99 description is: This amendment includes changes to IEEE Std 802.3-2018 and adds Clause 155 and Clause 156. This amendment adds 400 Gb/s Physical Layer specifications and management parameters for operation over DWDM systems with reaches of at least 80 km.

**Proposed Response**

PROPOSED ACCEPT.

---

Instead of a generic description indicate "P802.3cx/0.4 does not include a self description."

**Proposed Response**

PROPOSED ACCEPT.
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**Hayashi, Takehiro**  
**HAT Lab., Inc.**

**Comment Type:** E  
**Comment Status:** X  
**Suggested Remedy:** Empty comment

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

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**Hayashi, Takehiro**  
**HAT Lab., Inc.**

**Comment Type:** E  
**Comment Status:** X  
**Suggested Remedy:** Empty comment

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

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**Hayashi, Takehiro**  
**HAT Lab., Inc.**

**Comment Type:** E  
**Comment Status:** X  
**Suggested Remedy:** shall statements

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

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**Grow, Robert**  
**RMG Consulting, KDPOF**

**Comment Type:** E  
**Comment Status:** D  
**Suggested Remedy:**  
**Proposed Response**  
**Response Status:** W

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**Abbott, John**  
**Corning**

**Comment Type:** E  
**Comment Status:** D  
**Suggested Remedy:** change PAM2 to NRZ or explain they are the same

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

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**Abbott, John**  
**Corning**

**Comment Type:** E  
**Comment Status:** D  
**Suggested Remedy:** change PAM2 to NRZ

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

---

**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**  
**Z/withdrawn**  

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

---

**Page 4 of 60**  
**05/03/2021  22:38:47**
Cl 00 SC 0 P 21 L 25 # 317
Abbott, John Corning
Comment Type E Comment Status D PAM
Suggested Remedy change PAM2 to NRZ
Proposed Response Response Status W PROPOSED ACCEPT.

Cl 00 SC 0 P 22 L 4 # 321
Abbott, John Corning
Comment Type E Comment Status D PAM
Suggested Remedy change PAM2 to NRZ
Proposed Response Response Status W PROPOSED ACCEPT.

Cl 00 SC 0 P 21 L 30 # 318
Abbott, John Corning
Comment Type E Comment Status D PAM
Suggested Remedy change PAM2 to NRZ
Proposed Response Response Status W PROPOSED ACCEPT.

Cl 00 SC 0 P 22 L 10 # 322
Abbott, John Corning
Comment Type E Comment Status D PAM
Suggested Remedy change PAM2 to NRZ
Proposed Response Response Status W PROPOSED ACCEPT.

Cl 00 SC 0 P 27 L 6 # 323
Abbott, John Corning
Comment Type E Comment Status D PAM
Suggested Remedy change PAM2 to NRZ
Proposed Response Response Status W PROPOSED ACCEPT.

Cl 00 SC 0 P 21 L 47 # 319
Abbott, John Corning
Comment Type E Comment Status D PAM
Suggested Remedy change PAM2 to NRZ
Proposed Response Response Status W PROPOSED ACCEPT.

Cl 00 SC 0 P 21 L 53 # 320
Abbott, John Corning
Comment Type E Comment Status D PAM
Suggested Remedy change PAM2 to NRZ
Proposed Response Response Status W PROPOSED ACCEPT.
Cl 1 SC 1.4.52a P 19 L 26 # 150
Grow, Robert
RMG Consulting, KDPOF
Comment Type E Comment Status D optical fiber
SuggestedRemedy
The PHY type definitions could be improved.
Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 1 SC 1.4.333a P 20 L 3 #
Pérez-Aranda, Rubén
KDPOF
Comment Type T Comment Status D BASE-AU
SuggestedRemedy
Replace MultiGBASE-AU with BASE-AU.
Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 1 SC 1.4.333a P 20 L 3 # 2
Pérez-Aranda, Rubén
KDPOF
Comment Type T Comment Status D BASE-U
SuggestedRemedy
Add definition of BASE-U. See as an example 1.4.3 1000BASE-H.
Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE. In case that 50 Gbps donot share the same
PHYs sharing the same PCS and PMA. For example for MDIO PCS registers.

Cl 00 SC 0 P 71 L 5 # 175
Grow, Robert
RMG Consulting, KDPOF
Comment Type E Comment Status D
SuggestedRemedy
Should add to the Editor's note something about 50GBASE-AU status.
Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 00 SC 0 P 72 L 14 # 181
Grow, Robert
RMG Consulting, KDPOF
Comment Type E Comment Status D Terminology
SuggestedRemedy
The acronym xMII is "generic Media Independent Interface" and perhaps we could here
define xMII in clause 300 referring to XGMII, 25GMII, or 50GMII. Alternatively we could
create a new acronym (e.g., auMII) for the same xMII types we deal with, but I prefer using
xMII.
Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE. Define xMII in subclause 300.1.2 referring to XGMII,
25GMII, or 50GMII.

Cl 1 SC 1.4 P 19 L 21 # 149
Grow, Robert
RMG Consulting, KDPOF
Comment Type E Comment Status D EZ
SuggestedRemedy
The word "publication" is generally reserved for IEEE publication after approval. We will
need to update numbering for our ballot. The latest timelines have us able to do this for
WG ballot. A revision draft should be available 2 months prior to our projected WG ballot,
but it probably won’t include multiple amendments to 802.3-2018 in the initial revision draft
(waiting for SASB approval before merging amendments into the revision).
Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 1 SC 1.4.333a P 20 L 3 #
Pérez-Aranda, Rubén
KDPOF
Comment Type T Comment Status D BASE-U
SuggestedRemedy
We should consider if it is appropriate the definition of BASE-U (PCS and PMA) for the
PHYs sharing the same PCS and PMA. For example for MDIO PCS registers.
Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE. In case that 50 Gbps donot share the same
PCS/PMA, we should select a different PHY name accordingly.

Proposed Response Response Status W
PROPOSED ACCEPT.
Cl 30 SC 30.3.2.1 P 21 L 20 # 3
Pérez-Aranda, Rubén KDPOF
Comment Type T Comment Status D PAM
For 2.5, 5, 10 and 25 Gb/s, NRZ should be used i/o PAM2 for consistency with other optical PHYs and because optical signal is non-return to zero (values of zero or below are not taken). For 50 Gb/s, there is no baseline adopted. Also in lines 25, 29, 35, 39, 47, 52
Suggested Remedy
Replace PAM with NRZ. Replace PAM-TBD with TBD.
Proposed Response Response Status W PROPOSED ACCEPT.

Cl 30 SC 30.3.2.1 P 22 L 3 # 4
Pérez-Aranda, Rubén KDPOF
Comment Type T Comment Status D PAM
For 2.5, 5, 10 and 25 Gb/s, NRZ should be used i/o PAM2 for consistency with other optical PHYs and because optical signal is non-return to zero (values of zero or below are not taken). For 50 Gb/s, there is no baseline adopted. Also in lines 9, 14
Suggested Remedy
Replace PAM with NRZ. Replace PAM-TBD with TBD.
Proposed Response Response Status W PROPOSED ACCEPT.

Cl 30 SC 30.5.1.1.2 P 22 L 33 # 159
Grow, Robert RMG Consulting, KDPOF
Comment Type E Comment Status D EZ
"temporal"?
Suggested Remedy
"Optical fiber" in the aMAUType definitions should be updated to reflect TBD specifications.
Proposed Response Response Status W PROPOSED ACCEPT.

Cl 30 SC 30.5.1.1.2 P 22 L 20 # 3
Pérez-Aranda, Rubén KDPOF
Comment Type T Comment Status D PAM
For 2.5, 5, 10 and 25 Gb/s, NRZ should be used i/o PAM2 for consistency with other optical PHYs and because optical signal is non-return to zero (values of zero or below are not taken). For 50 Gb/s, there is no baseline adopted. Also in lines 25, 29, 35, 39, 47, 52
Suggested Remedy
Replace PAM with NRZ. Replace PAM-TBD with TBD.
Proposed Response Response Status W PROPOSED ACCEPT.
IEEE 802.3cz D1.0 Multi-Gig Automotive Optical Ethernet PHY 1st Task Force review comments

IEEE P802.3cz D1.0 Multi-Gig Automotive Optical Ethernet PHY 1st Task Force review comments

Comment Type: E  Comment Status: X  optical fiber

Cl 44  SC 44.1.2  P 24  L 23  # 162
Grow, Robert  RMG Consulting, KDPOF

Comment Type: E  Comment Status: X

Change consistent with 1.4 AU PHY type definitions.

Suggested Remedy
Change: "Support operation over optical fiber tailored for automotive applications" to
"Support operation over optical fiber in automotive applications".

Proposed Response  Response Status: W
PROPOSED ACCEPT IN PRINCIPLE. See #251 and #150

Cl 44  SC 44.1.3  P 25  L 44  # 5
Pérez-Aranda, Rubén  KDPOF

Comment Type: T  Comment Status: D  BASE-U

Other PCS name are prefixed to provide more information, e.g. 64B/66B, 8B/10B, etc.
Following the filename criteria in perezaranda_3cz_02c_1120_phyname.pdf, it might useful
to use a distinctive prefix for PCS and PMA sublayers.

Suggested Remedy
For 10 GBASE-AU, replace PCS with BASE-U PCS and PMA with BASE-U PMA.

Proposed Response  Response Status: W
PROPOSED ACCEPT.

Cl 44  SC 44.1.4.4  P 26  L 21  # 164
Grow, Robert  RMG Consulting, KDPOF

Comment Type: E  Comment Status: D  EZ

"conveniently"?

Suggested Remedy
"This table will need to be modified to be consistent with PMA/PMD specifications TBD."

Proposed Response  Response Status: W
PROPOSED ACCEPT IN PRINCIPLE. Combine with comment #7 and delete PMA

Cl 44  SC 44.1.4.4  P 26  L 21  # 7
Pérez-Aranda, Rubén  KDPOF

Comment Type: T  Comment Status: D  EZ

Editor note. PMA is already defined.

Suggested Remedy
Replace with "Depending on the PMD definition ....".

Proposed Response  Response Status: W
PROPOSED ACCEPT.

Cl 44  SC 44.1.4.4  P 26  L 39  # 5
Pérez-Aranda, Rubén  KDPOF

Comment Type: T  Comment Status: D  EZ

Clause 300 specified PCS, PMA and PMD.

Suggested Remedy
Replace 10GBASE-AU PCS & PMA with 10GBASE-AU PCS/PMA/PMD

Proposed Response  Response Status: W
PROPOSED ACCEPT.

Cl 44  SC 44.1.4.4  P 27  L 6  # 8
Pérez-Aranda, Rubén  KDPOF

Comment Type: T  Comment Status: D  optical fiber

Consistency

Suggested Remedy
Replace with: "upon 64B/65B coding encapsulated into Reed-Solomon frames that are
mapped to NRZ modulation for transmission on multimode optical fiber."

Proposed Response  Response Status: W
PROPOSED ACCEPT IN PRINCIPLE. Replace with: "upon 64B/65B coding encapsulated
into Reed-Solomon frames that are mapped to NRZ modulation for transmission on optical
fiber for automotive applications.". See #150
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**Figure 44-1**

Grow, Robert RMG Consulting, KDPOF

The other five architectural PCS sublayers have a name, shouldn't we?

**SuggestedRemedy**

Add appropriate name for our chosen PCS, possibly 64B/65B RS PCS.

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE. Proposal is to name as BASE-U PCS. See #5

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Hayashi, Takehiro HAT Lab., Inc.

If these sentences are requirements, "shall" should be used.

**SuggestedRemedy**

indicates ® shall indicate

**Proposed Response**

PROPOSED REJECT. This is a description, not a requirement

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<td>T</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Pérez-Aranda, Rubén KDPOF

Should it be more convenient to use the term BASE-AU i/o MultiGBASE-AU. There is no other -AU PHY. Also in lines 35, 48 E.g. BASE-R PCS is defined in 1.4.150 because it is common to many PHYS. Using BASE-AU can simplify MDIO registers and sublayers naming.

**SuggestedRemedy**

Replace MultiGBASE-AU with BASE-AU.

**Proposed Response**

PROPOSED ACCEPT.
IEEE P802.3cz D1.0 Multi-Gig Automotive Optical Ethernet PHY 1st Task Force review comments

IEEE 802.cz Multi-Gig Aut D1.0 Comment Report

Hayashi, Takehiro
HAT Lab., Inc.

Comment Type E
Comment Status D
shall statements

If these sentence are requirements, "shall" should be used.

SuggestedRemedy
When these bits are set to 0000, the mode of operation is 2.5GBASE-AU.
↓
When these bits are set to 0000, the mode of operation shall be 2.5GBASE-AU.
(Change the following descriptions same as above.)

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE. The shall is refered to the proper use of this register, and is not described in Clause 300.

Pérez-Aranda, Rubén
KDPOF

Comment Type T
Comment Status D
OAM

Same OAM protocol of 1000BASE-H has been adopted for BASE-AU PHYs. However GEPOF and OMEGA PHYs do not share the same base name (BASE-H vs. BASE-U). Renaming the 1000BASE-H OAM registers to be BASE-H can be very confusing.

SuggestedRemedy
Option 1: New BASE-U OAM registers set. New text in C/45 and C/300. The text of C/300 should avoid repeating the full OAM specification of C/115. It should do a reference with specific changes, as used in other places in 802.3.
Option 2: Rename 1000BASE-H OAM registers set with BASE-H/U OAM. Option 2 has the advantage of avoiding repeating text in C/45. However, for consistency the same subclause should be used for specifying OAM channel for BASE-H and BASE-U, due to the cross references in C/45 to C/115. Implies C/115 maintenance request.

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE. Option 1.

Grow, Robert
RMG Consulting, KDPOF

Comment Type E
Comment Status D
EZ

The instruction does not agree with the table that only adds rows through 1.525, not 1.541. Also, we are trying to use "through" instead of "to" to remove the ambiguity of the second value being included in a range.

SuggestedRemedy
*new rows for registers 1.523 through 1.526

Proposed Response Response Status W
PROPOSED ACCEPT.

Pérez-Aranda, Rubén
KDPOF

Comment Type T
Comment Status D
BASE-U

They are PCS registers. BASE-U PCS xxx naming is more appropriate. Also in lines 30, 31

SuggestedRemedy
Replace MultiGBASE-AU with BASE-U.

Proposed Response Response Status W
PROPOSED ACCEPT.

Pérez-Aranda, Rubén
KDPOF

Comment Type T
Comment Status D
Loopback and test modes

PCS status 3 reg and PCS status 4 reg are not included in the table. The PCS status 3 is consistent with the baseline (remote link margin). PCS status 4 is placeholder for BER test mode, required in other automotive PHY layers, although test modes have not been adopted yet.

SuggestedRemedy
Add these registers to the table for consistency.

Proposed Response Response Status W
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 Z/withdrawn
SORT ORDER: Clause, Subclause, page, line

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IEEE P802.3cz D1.0 Multi-Gig Automotive Optical Ethernet PHY 1st Task Force review comments

Cl 45 SC 45.2.3 P 31 L 41 # 202
Hayashi, Takehiro HAT Lab., Inc.

Comment Type E Comment Status D shall statements
If these sentence are requirements, "shall" should be used.

SuggestedRemedy
- Registers 3.500 through 3.508 are used …
- Registers 3.500 through 3.508 shall be used …

Proposed Response Response Status W
PROPOSED REJECT. Shall statements are included in Clause 115, and the procedure and contents of the register is just a description here.

Cl 45 SC 45.2.3 P 31 L 45 # 203
Hayashi, Takehiro HAT Lab., Inc.

Comment Type E Comment Status D shall statements
If these sentence are requirements, "shall" should be used.

SuggestedRemedy
- The transmit registers are used to …
- The transmit registers shall be used to …

Proposed Response Response Status W
PROPOSED REJECT. Shall statements are included in Clause 115, and the procedure and contents of the register is just a description here.

Cl 45 SC 45.2.3.5b P 36 L 12 # 225
Hayashi, Takehiro HAT Lab., Inc.

Comment Type E Comment Status D

Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 45 SC 45.2.3.5b P 36 L 14 # 226
Hayashi, Takehiro HAT Lab., Inc.

Comment Type E Comment Status D EZ

SuggestedRemedy
- EEE ability © local EEE ability

Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 45 SC 45.2.3.5b P 36 L 17 # 227
Hayashi, Takehiro HAT Lab., Inc.

Comment Type E Comment Status D EZ

SuggestedRemedy
- "LH = Latching high" is not used in the table.

Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 45 SC 45.2.3.47b P 35 L 51 # 16
Pérez-Aranda, Rubén KDPOF

Comment Type T Comment Status D EEE registers

SuggestedRemedy
- LPI related registers are not included. It is not consistent with the EEE ability and EEE enable bits.

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE. LPI mode has not been defined yet, however these registers are very general to any PHY supporting EEE, that is part of the objectives.
Cl 45 SC 45.2.3.47b P 36 L 5  # 17
Pérez-Aranda, Rubén KDPOF
Comment Type T Comment Status D OAM
Using BASE-H is confusing. Also in line 12
SuggestedRemedy
BASE-U or BASE-H/U per decision by TF.
Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE. OAM BASE-U is proposed for consistency.

Cl 45 SC 45.2.3.47b P 37 L 1  # 18
Pérez-Aranda, Rubén KDPOF
Comment Type T Comment Status D OAM
Using BASE-H is confusing. Also in line 16
SuggestedRemedy
BASE-U or BASE-H/U per decision by TF.
Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE. #See 17

Cl 45 SC 45.2.3.47b.1 P 36 L 22  # 228
Hayashi, Takehiro HAT Lab., Inc.
Comment Type E Comment Status D shall statements
If these sentence are requirements, "shall" should be used.
SuggestedRemedy
reflects ® shall reflect
Proposed Response Response Status W
PROPOSED REJECT. This is a description, not a requirement

Cl 45 SC 45.2.3.47b.6 P 36 L 48  # 230
Hayashi, Takehiro HAT Lab., Inc.
Comment Type E Comment Status X shall statements
If these sentence are requirements, "shall" should be used.
SuggestedRemedy
reflects ® shall reflect
Proposed Response Response Status W
PROPOSED REJECT. This is a description, not a requirement

Cl 45 SC 45.2.3.47b.7 P 37 L 3  # 231
Hayashi, Takehiro HAT Lab., Inc.
Comment Type E Comment Status X shall statements
If these sentence are requirements, "shall" should be used.
SuggestedRemedy
indicates ® shall indicate
Proposed Response Response Status W
PROPOSED REJECT. This is a description, not a requirement

Cl 45 SC 45.2.3.47b.7 P 37 L 4  # 234
Hayashi, Takehiro HAT Lab., Inc.
Comment Type E Comment Status X shall statements
If these sentence are requirements, "shall" should be used.
SuggestedRemedy
indicates ® shall indicate
Proposed Response Response Status W
PROPOSED REJECT. This is a description, not a requirement

Cl 45 SC 45.2.3.47b.8 P 37 L 11  # 236
Hayashi, Takehiro HAT Lab., Inc.
Comment Type E Comment Status X shall statements
If these sentence are requirements, "shall" should be used.
SuggestedRemedy
indicates ® shall indicate
Proposed Response Response Status W
PROPOSED REJECT. This is a description, not a requirement

Cl 45 SC 45.2.3.47b.9 P 37 L 18  # 238
Hayashi, Takehiro HAT Lab., Inc.
Comment Type E Comment Status X shall statements
If these sentence are requirements, "shall" should be used.
SuggestedRemedy
indicates ® shall indicate
Proposed Response Response Status W
PROPOSED REJECT. This is a description, not a requirement
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<th>Proposed Response</th>
<th>Response Status</th>
<th>Comment Status</th>
<th>Proposed Response</th>
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<td>Hayashi, Takehiro</td>
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<td>If these sentences are requirements, &quot;shall&quot; should be used.</td>
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<td>Hayashi, Takehiro</td>
<td>HAT Lab., Inc.</td>
<td>If these sentences are requirements, &quot;shall&quot; should be used.</td>
<td>PROPOSED REJECT. This is a description, not a requirement</td>
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<td>241</td>
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<td>Hayashi, Takehiro</td>
<td>HAT Lab., Inc.</td>
<td>If these sentences are requirements, &quot;shall&quot; should be used.</td>
<td>PROPOSED REJECT. This is a description, not a requirement</td>
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<tr>
<td>19</td>
<td>T</td>
<td>D</td>
<td>Cross reference</td>
<td>Pérez-Aranda, Rubén</td>
<td>KDPOF</td>
<td>Reference to 115 should be avoided to avoid confusion. If finally we use same FP format (we should), a reference in C/300 to C/115 should be added. I suggest restricting the references to C/115 in C/45 just to the minimum for OAM, in case of reusing same registers of 1000BASE-H. Easier for maintenance. Avoid confusion.</td>
<td>Replace with a cross reference to C/300.</td>
<td></td>
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<tr>
<td>242</td>
<td>E</td>
<td>X</td>
<td>PROPOSED ACCEPT.</td>
<td>Pérez-Aranda, Rubén</td>
<td>KDPOF</td>
<td>Reference to 115 should be avoided to avoid confusion. If finally we use same FP format (we should), a reference in C/300 to C/115 should be added. I suggest restricting the references to C/115 in C/45 just to the minimum for OAM, in case of reusing same registers of 1000BASE-H. Easier for maintenance. Avoid confusion.</td>
<td>Replace with a cross reference to C/300.</td>
<td></td>
</tr>
</tbody>
</table>
If these sentence are requirements, "shall" should be used.

Suggested Remedy
requests ® shall request

Proposed Response Response Status W
PROPOSED REJECT. Shall statements are included in Clause 115, and the procedure and contents of the register is just a description here.

Comment Type E Comment Status D shall statements

Hayashi, Takehiro
HAT Lab., Inc.

Cl 45 SC 45.2.3.50.1 P 32 L 34 # 204

Cl 45 SC 45.2.3.50.3 P 32 L 50 # 207

Bit 3.500.15 is set to zero by the 1000BASE-H based PHY to indicate that …

↓
Bit 3.500.15 set to zero by the 1000BASE-H based PHY shall indicate that …

Proposed Response Response Status W
PROPOSED REJECT. Shall statements are included in Clause 115, and the procedure and contents of the register is just a description here.

Proposed Response Response Status W
PROPOSED REJECT. Shall statements are included in Clause 115, and the procedure and contents of the register is just a description here.

Cl 45 SC 45.2.3.50.4 P 33 L 3 # 208

Cl 45 SC 45.2.3.50.4 P 33 L 4 # 209

Bit 3.500.12 … when it accepts … (simultaneously setting bit 3.500.15 to zero), acting as a one bit sequence number.

↓
Bit 3.500.12 … when it accepts … , acting as a one bit sequence number, simultaneously bit 3.500.15 shall be set to zero.

Proposed Response Response Status W
PROPOSED ACCEPT.

Suggested Remedy
reflects ® shall reflect

Proposed Response Response Status W
PROPOSED REJECT. Shall statements are included in Clause 115, and the procedure and contents of the register is just a description here.

Suggested Remedy
is used ® shall be used, is changed ® shall be changed

Proposed Response Response Status W
PROPOSED REJECT. Shall statements are included in Clause 115, and the procedure and contents of the register is just a description here.

Proposed Response Response Status W
PROPOSED REJECT. Shall statements are included in Clause 115, and the procedure and contents of the register is just a description here.

Proposed Response Response Status W
PROPOSED REJECT. Shall statements are included in Clause 115, and the procedure and contents of the register is just a description here.

Proposed Response Response Status W
PROPOSED REJECT. Shall statements are included in Clause 115, and the procedure and contents of the register is just a description here.

Suggested Remedy
blacket ( ) is not necessary

Suggested Remedy

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<th>L</th>
<th>#</th>
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<th>Response Status</th>
<th>SuggestedRemedy</th>
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<td>33</td>
<td>9</td>
<td>210</td>
<td>Hayashi, Takehiro</td>
<td>HAT Lab., Inc.</td>
<td>E</td>
<td>shall statements</td>
<td>D</td>
<td>If these sentence are requirements, &quot;shall&quot; should be used. And the sentence after &quot;and&quot; may be incomplete.</td>
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<tr>
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<td>45.2.3.51</td>
<td>33</td>
<td>21</td>
<td>211</td>
<td>Hayashi, Takehiro</td>
<td>HAT Lab., Inc.</td>
<td>E</td>
<td>shall statements</td>
<td>X</td>
<td>registers 3.501 through 3.508 (TXO_DATA1 through TXO_DATA8) the remaining 128 bits of. ↓ registers 3.501 through 3.508 (TXO_DATA1 through TXO_DATA8) shall contain the remaining 128 bits of.</td>
</tr>
<tr>
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<td>45.2.3.51</td>
<td>33</td>
<td>22</td>
<td>212</td>
<td>Hayashi, Takehiro</td>
<td>HAT Lab., Inc.</td>
<td>E</td>
<td>shall statements</td>
<td>X</td>
<td>The sentence after &quot;and&quot; may be incomplete.</td>
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<td>3</td>
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<td>HAT Lab., Inc.</td>
<td>E</td>
<td>shall statements</td>
<td>X</td>
<td>registers 3.510 through 3.517 the following 128 bits. ↓ registers 3.510 through 3.517 shall contain the following 128 bits.</td>
</tr>
</tbody>
</table>

**Proposed Response**

**Response Status:** W

PROPOSED REJECT. Shall statements are included in Clause 115, and the procedure and contents of the register is just a description here.

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<td>If these sentence are requirements, &quot;shall&quot; should be used.</td>
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</table>

**Proposed Response**

**Response Status:** W

PROPOSED REJECT. Shall statements are included in Clause 115, and the procedure and contents of the register is just a description here.
Hayashi, Takehiro
HAT Lab., Inc.

Comment Type: E  Comment Status: X  shall statements

If these sentence are requirements, "shall" should be used.

Suggested Remedy:
- does not update © shall not update

Proposed Response  Response Status: W
- PROPOSED REJECT. Shall statements are included in Clause 115, and the procedure and contents of the register is just a description here.

Hayashi, Takehiro
HAT Lab., Inc.

Comment Type: E  Comment Status: X  shall statements

if these sentence are requirements, "shall" should be used.

Suggested Remedy:
- changes © shall change

Proposed Response  Response Status: W
- PROPOSED REJECT. Shall statements are included in Clause 115, and the procedure and contents of the register is just a description here.

Hayashi, Takehiro
HAT Lab., Inc.

Comment Type: E  Comment Status: X  shall statements

if these sentence are requirements, "shall" should be used.

Suggested Remedy:
- contains © shall contain

Proposed Response  Response Status: W
- PROPOSED REJECT. Shall statements are included in Clause 115, and the procedure and contents of the register is just a description here.

Pérez-Aranda, Rubén
KDPOF

Comment Type: T  Comment Status: D  OAM

- Using BASE-H is confusing.

Suggested Remedy:
- BASE-U or BASE-H/U per decision by TF.

Proposed Response  Response Status: W
- PROPOSED ACCEPT IN PRINCIPLE. #See 17
IEEE P802.3cz D1.0 Multi-Gig Automotive Optical Ethernet PHY 1st Task Force review comments

D 1.0 Comment Report

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<th>35</th>
<th>L 4</th>
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<td>Loopback and test modes</td>
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<tr>
<td>&quot;test mode&quot; is not found in table 45-226a</td>
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<tr>
<td>add explanation of &quot;test mode&quot; in table 45-226a</td>
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<td>PROPOSED ACCEPT IN PRINCIPLE. Add some placeholder for test modes.</td>
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<td>Using BASE-H is confusing.</td>
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<td>Suggested Remedy</td>
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<td>BASE-U or BASE-H/U per decision by TF.</td>
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<td>If these sentence are requirements, &quot;shall&quot; should be used.</td>
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<td>controls shall control</td>
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<td>add the table reference of &quot;bit 3.524.1&quot;</td>
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<td>Suggested Remedy</td>
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<td>(bit 3.524.1 = 0, see table 45-226b)</td>
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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  Z/withdrawn
SORT ORDER: Clause, Subclause, page, line
Hayashi, Takehiro  
HAT Lab., Inc.

Comment Type: E  
Comment Status: D  
1000BASE-H may typo

Suggested Remedy
1000BASE-H © BASE-H

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

---

Hayashi, Takehiro  
HAT Lab., Inc.

Comment Type: E  
Comment Status: D  
Table 45-226b is a wrong reference.

Suggested Remedy
Table 45-226a

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

---

Hayashi, Takehiro  
HAT Lab., Inc.

Comment Type: E  
Comment Status: D  
"1" is just a number, an article is not used.

Suggested Remedy
delete "a"

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

---

Hayashi, Takehiro  
HAT Lab., Inc.

Comment Type: E  
Comment Status: D  
"0" is just a number, an article is not used.

Suggested Remedy
delete "a"

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

---

Grow, Robert  
RMG Consulting, KDPOF

Comment Type: T  
Comment Status: D  
OAM

Though the changes for "1000BASE-H" to "BASE-H" here and following may be appropriate to do, they could be challenged as being out of scope for our PAR.

Suggested Remedy
The TF should explicitly determine if the changes are appropriate for inclusion as part of the adoption of 1000BASE-H OAM for the AU PHY types. Other options to consider include doing the changes via a maintenance request, or during the revision balloting submit the changes.

**Proposed Response**  
Response Status: W  
PROPOSED ACCEPT IN PRINCIPLE. See #11 and #17
**Comment Type** E
**Comment Status** D

Grow, Robert
RMG Consulting, KDPOF

#170

**Table 45-176**

With the combined change and insert instruction, I think we should underline the inserted rows.

**Suggested Remedy**
Underline the rows for 1.523 through 1.526

**Proposed Response**
Response Status W

PROPOSED ACCEPT.

---

#165

**Table 45-3**

Register 1.26 is defined by IEEE Std 802.3cn.

**Suggested Remedy**
Remove the reserved row.

**Proposed Response**
Response Status W

PROPOSED ACCEPT.

---

#166

**Table 45-3**

Register 1.1000 through 1.1002 are used by IEEE Std 802.3ca.

**Suggested Remedy**
I suggest going to the 1.901-1.999 reserved block (1.900 is BASE-H, use IEEE Std 802.3ca for base text where reserved range is changed). I didn't find any other approved or active amendment projects in this register range and would recommend 1.901 for "MultiGBASE-AU PMA/PMD control". If the register changes, Footnote c (should be footnote d) to Table 45-7 also needs to be updated to point at the selected register. Also will need to change the subclause title at p. 29, l. 47, and change the register number in the Bit(s) column at p. 30, l. 5 and l. 7.

**Proposed Response**
Response Status W

PROPOSED ACCEPT.

---

#167

**Table 45-7**

The reserved rows probably won't look like this in the revision. Most of the reserved values are defined by other amendments in progress. More importantly, the value (1011110) used here for AU types is also defined by P802.3ck/D1.4.

**Suggested Remedy**
It is uncertain at this time if P802.3ck will be included in the revision, but .3ck started to use the value first, so we should change our value. There are a few reserved values still available below the values specified by P802.3cp (e.g., 100011x found in IEEE Std 802.3cd so will be in the revision draft), or we can use some of the reserved values above those used by P802.3cp (i.e., 1111001 or numerically greater).

**Proposed Response**
Response Status W

PROPOSED ACCEPT.

---

#168

**Table 45-7**

In IEEE Std 802.3-2018, there is a footnote c for 1.900 BASE-H.

**Suggested Remedy**
Footnote should be d (also on line 9).

**Proposed Response**
Response Status W

PROPOSED ACCEPT.

---

#251

**Table 105.1.1**

The cabling won't be a single fiber structure.

**Suggested Remedy**
a optical fiber® a pair of multimode optical fiber

**Proposed Response**
Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Replace with "25 Gb/s PHY using BASE-U encoding over optical fiber for use in automotive applications (see Clause 300).". See #150
Too many details (RS size, GF, ...) for an overview in a generic clause.

Suggested Remedy

25GBASE-AU represents Physical Layer devices using Clause 300 Physical Coding Sublayer (PCS), Physical Medium Attachment (PMA) sublayer, and Physical Medium Dependent (PMD) sublayer, for transmitting 25 Gb/s Ethernet over a multimode optical fiber tailored for automotive applications. 25GBASE-AU uses 64B/65B coding encapsulated into Reed-Solomon frames that are mapped to NRZ modulation for transmission on optical fiber.

Proposed Response

PROPOSED ACCEPT IN PRINCIPLE.

"25GBASE-AU represents Physical Layer devices using Clause 300 Physical Coding Sublayer (PCS), Physical Medium Attachment (PMA) sublayer, and Physical Medium Dependent (PMD) sublayer, for transmitting 25 Gb/s Ethernet over a multimode optical fiber for automotive applications. 25GBASE-AU uses 64B/65B coding encapsulated into Reed-Solomon frames that are mapped to NRZ modulation for transmission on optical fiber."

Language could be improved for consistency with requested changes to P802.3cz Definitions. The words "an optical fiber" implies a single fiber, not two fibers. What is tailored is also ambiguous (i.e., PHY or the fiber).

Suggested Remedy

Search on "append" (not full word) and replace if point of information being appended matters. For example, this case, with suitable additional clarification might appropriately read: "Each sequence of 80 PDBs is followed by a 20-bit PHD block."

Proposed Response

PROPOSED REJECT. Suggested remedy seems to be unrelated with the comment. See comment #191.

The term RS-FEC is already in use for referring other clauses. It can generate confusion (e.g. same RS of 25GBASE-T?)

Suggested Remedy

Replace with: "25 Gb/s PHY using 64B/65B and Reed-Solomon encoding with NRZ modulation over multimode optical fiber tailored for automotive applications (see Clause 300)."

Proposed Response

PROPOSED REJECT. RS-FEC is defined as an acronym referring to Reed-Solomon Forward Error Correction, and it does not mean an specific Reed-Solom FEC coding scheme.
Cl 105 SC 105.3.2 P 48 L 48 # 24
Pérez-Aranda, Rubén KDPOF
Comment Type T Comment Status D Details
Many details compared with PMA and PMD. Will need to be updated with C/300 accordingly.
SuggestedRemedy Replace text with: “The 25GBASE-AU PCS is specified in Clause 300.”
PROPOSED ACCEPT.

Cl 105 SC Table 105-1 P 47 L 27 # 153
Grow, Robert RMG Consulting, KDPOF
Comment Type E Comment Status D optical fiber
Language could be improved for consistency with requested changes to P802.3cz Definitions. The words “an optical fiber” implies a single fiber, not two fibers. What is tailored is also ambiguous (i.e., PHY or the fiber).
SuggestedRemedy Change “over an optical fiber tailored for automotive applications (see Clause 300).” to “over optical fiber for use in automotive applications (see Clause 300).”
PROPOSED ACCEPT IN PRINCIPLE. See #251 and #150

Cl 115 SC 115.3.4 P 51 L 10 # 128
Wienckowski, Natalie General Motors
Comment Type E Comment Status D OAM Sub-clause 115.3 has to be included in the draft since sub-clauses to it are included.
SuggestedRemedy Add “115.3 Physical Medium Attachment (PMA) sublayer” before 115.3.4.
PROPOSED REJECT. OAM definition will be included in Clause 300 if comment #11 is approved by TF. Therefore is not applicable.

Cl 105 SC Table 105-2 P 48 L 20 # 173
Grow, Robert RMG Consulting, KDPOF
Comment Type E Comment Status D EZ
“25 BASE-AU” is missing the “G”.
SuggestedRemedy 25GBASE-AU ...
PROPOSED ACCEPT.
Add explanations about the prefix "LOCPHD" and "REMPHD" as described in page 82.

SuggestedRemedy
add the following descriptions,

Each PHY has to deal with transmit and receive PHDs simultaneously. The prefix LOCPHD refers to the fields of the PHD to be included in the next Transmit Block transmitted to the link partner from the local PHY. LOCPHD fields assigned by the state diagrams shall be sampled at the start of a Transmit Block by the PHD Builder to create the PHD included in that current Transmit Block.

The prefix REMPHD refers to the fields of the most recent PHD received, decoded and validated from the link partner (from the remote PHY). The new values of REMPHD fields shall be available to the state diagrams and registers immediately after reception, decoding, and validation of the entire PHD and before the reception of the Transmit Block that includes that PHD is completed.

Proposed Response Response Status W
PROPOSED REJECT.
Descriptions are in the original subclause 115.3.4. In D1.0, only the proposed changed text is shown.

The current OAM exchanges STA information. This does not provide information on the PHY or channel state. Either replace this with the Clause 149 OAM or add Features of the BASE-T1 OAM to add PHY and channel status information.

Per slide 14 of https://www.ieee802.org/3/OMEGA/public/mar_2020/cpardo_OMEGA_01_0320_Objectives.pdf one desired use of Multi Gig Optical Automotive Ethernet is redundant links with one copper and one optical. To do this, the information provided in the BASE-T1 OAM is needed.

SuggestedRemedy
See wienczkowski_3cz_01_0321.pdf.

Proposed Response Response Status W
PROPOSED REJECT.
MultiGBASE-T1 OAM approach is different of PHD + OAM approach of BASE-H and BASE-AU.

The OAM channel specified in C/115.9, which was adopted to be reused in OMEGA baseline, is a channel that only provides a mechanism to reliably exchange messages between station management entity (STA) peers attached to link partners. The information of this channel is transported within the Physical Header Header (PHD). PHD is side information block embedded inside a Transmit Block used to exchange control and monitoring information as well as optional capabilities (e.g., EEE, OAM). PHD is transmitted with additional error correction capability by using a three-repetition code interleaved along several RS-FEC codewords. Additionally it also include a CRC for error detection capability. Three specific state diagrams are used to validate the bidirectional PHD reliable operation, which is necessary before establishing the bidirectional link between the media independent interfaces of both link partners.

Relevant information transported by the PHD concerning to the PHY status (both partners):

- PHD.RX.HDRSTATUS: Indicates whether the local PHY is able to receive the PHD from its link partner with reliability. The value of this field is determined by the local PHD reception monitor state diagram. The local PHY uses this received PHD field to determine the value of the variable rem_rcvr_hdr_lock. Only when both link partners send PHD.RX.HDRSTATUS = 1, PHD communication is bidirectional and reliable.
- Local PHY reception status, remote PHD reception status, and PHD local status (bidirectional reliable communication) are reported through MDIO.

All the information transported in the PHD is always valid and it is only transferred to MDIO registers and SDs if CRC is valid.
PHD.RX.LINKMARGIN: The value of this field is determined by the PHY quality monitor state diagram in response to link margin estimation. Local link margin, and remote link margin (the partner) are reported by MDIO.

Link margins are reported with format (8, 3) fix point in log2 units of the extra noise variance supported by the each receiver fulfilling BER < 10^-12.

- Min resolution is 2^-(8-3) = 0.0312 log2 units, equivalent to 10*log10(2)*0.0312 = 0.1 dB
- Range is [-2^(3-1), 2^(3-1)-2^-5] = [-4, 3.97] log2 units, equivalent to approx. [-12, 12] dB.

The noise variance at symbol detector can be estimated either by measuring the Modulation Error Ratio (MER) at the decision points or measuring the ratio of corrected symbols per codeword carried out by the RS-FEC decoder. The value of the threshold and the information used to estimate the RS-FEC decoder noise variance is implementation dependent.

PHD.RX.LINKSTATUS: Indicates whether the local PHY is able to receive 65-bit blocks with reliability. The value of this field is determined by the PHY quality monitor state diagram. The local PHY uses this received PHD field to determine the value of the variable rem_rcvr_status.

- A receiver shall assign PHD.RX.LINKSTATUS the value 1, only when local link margin >= 0 dB.
- Local receiver status,
- Remote receiver status (partner),
- And Link status (bidirectional) are reported by MDIO.

Assignment of link_status = 1 happen synchronously in both PHY partners (local and remote), based on the defined state diagrams.

It is clear that the bidirectional PHY status (headers reliability, user data reliability and link margin) can be observed and checked through MDIO registers in any OMEGA PHY, differentiating characteristics of the local and remote PHY. Everything is independent of OAM channel.

Additional status information that represents the state of health of the transmitting device, which are expected to be transmitted automatically without intervention of STA (e.g. Annex 149B), would be suitable to be implemented at the PHD level (using the reserved bits) to OAM level to avoid interaction with the currently defined OAM protocols. This may include Power supply warning, Internal temperature warning, etc.

Action Item to ToDo list: PHY health remote monitoring.
**Comment**

*Comment Type:* E  
*Comment Status:* D  
*Comment:* "does" looks ambiguous expression. Also, if these sentences are requirements, "shall" should be used.

*Proposed Response:*  
**Response Status:** W  
**Proposed REJECT.** We would need a maintenance request of Clause 115 to do this modification

---

*Comment:* The sentence should be separated by ",".

*Proposed Response:*  
**Response Status:** W  
**Proposed REJECT.** We would need a maintenance request of Clause 115 to do this modification

---

*Comment:* TXO_REQ is a bit name but not a bit itself. Should follow the consistent expression.

*Proposed Response:*  
**Response Status:** W  
**Proposed REJECT.** We would need a maintenance request of Clause 115 to do this modification

---

*Comment:* If these sentences are requirements, "shall" should be used.

*Proposed Response:*  
**Response Status:** W  
**Proposed REJECT.** We would need a maintenance request of Clause 115 to do this modification
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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 Z/withdrawn
SORT ORDER: Clause, Subclause, page, line
Comment Type: E  Comment Status: D  Clause 115 modification

Suggested Remedy

- RXO_VAL, RXO_MSGT, and RXO_DATA0 are bit names but not bits themselves. Should follow the consistent expression.
- bit RXO_VAL ® bit 3.509.15 (RXO_VAL)
- bit RXO_MSGT ® bit 3.509.12 (RXO_MSGT)
- bit RXO_DATA0 ® bit 3.509.11:0 (RXO_DATA0)

Proposed Response: Response Status: W

PROPOSED REJECT. We would need a maintenance request of Clause 115 to do this modification.

Comment Type: E  Comment Status: D  Clause 115 modification

Suggested Remedy

- If these sentences are requirements, "shall" should be used.

Proposed Response: Response Status: W

PROPOSED REJECT. We would need a maintenance request of Clause 115 to do this modification.

Comment Type: E  Comment Status: D  Clause 115 modification

Suggested Remedy

- always maintain ® shall maintain

Proposed Response: Response Status: W

PROPOSED REJECT. We would need a maintenance request of Clause 115 to do this modification.
Cl 115 SC 115.9.3 P 56 L 3 # 274
Hayashi, Takehiro HAT Lab., Inc.
Comment Type E Comment Status D Clause 115 modification
RXO_DATA1, RXO_DATA8 are bit names but not bit themselves. Should follow the consistent expression.
SuggestedRemedy
bit RXO_DATA1 ® bit 3.510.15:0 (RXO_DATA1)
bit RXO_DATA8 ® bit 3.517.15:0 (RXO_DATA8)
Proposed Response Response Status W
PROPOSED REJECT. We would need a maintenance request of Clause 115 to do this modification

Cl 115 SC 115.9.3 P 56 L 7 # 275
Hayashi, Takehiro HAT Lab., Inc.
Comment Type E Comment Status D Clause 115 modification
RXO_VAL is a bit name but not a bit itself. Should follow the consistent expression.
SuggestedRemedy
bit RXO_VAL ® bit 3.509.15 (RXO_VAL)
Proposed Response Response Status W
PROPOSED REJECT. We would need a maintenance request of Clause 115 to do this modification

Cl 115 SC 115.9.3 P 56 L 28 # 276
Hayashi, Takehiro HAT Lab., Inc.
Comment Type E Comment Status D Clause 115 modification
TXO_MERT is a bit name but not a bit itself. Should follow the consistent expression.
SuggestedRemedy
bit TXO_MERT ® bit 3.500.13 (TXO_MERT)
Proposed Response Response Status W
PROPOSED REJECT. We would need a maintenance request of Clause 115 to do this modification

Cl 115 SC 115.9.3 P 56 L 33 # 277
Hayashi, Takehiro HAT Lab., Inc.
Comment Type E Comment Status D Clause 115 modification
TXO_MSGT is a bit name but not a bit itself. Should follow the consistent expression.
SuggestedRemedy
bit TXO_MSGT ® bit 3.500.12 (TXO_MSGT)
Proposed Response Response Status W
PROPOSED REJECT. We would need a maintenance request of Clause 115 to do this modification

Cl 115 SC 115.9.3 P 56 L 38 # 278
Hayashi, Takehiro HAT Lab., Inc.
Comment Type E Comment Status D Clause 115 modification
"the TXO_DATA0" is not field but bit.
SuggestedRemedy
TXO_DATA0 field ® bit 3.500.11:0 (TXO_DATA0)
Proposed Response Response Status W
PROPOSED REJECT. We would need a maintenance request of Clause 115 to do this modification

Cl 115 SC 115.9.3 P 56 L 39 # 279
Hayashi, Takehiro HAT Lab., Inc.
Comment Type E Comment Status D Clause 115 modification
TXO_DATA1 and TXO_DATA8 is bit names. Should follow the consistent expression.
SuggestedRemedy
TXO_DATA1 ® bit 3.501.15:0 (TXO_DATA1)
TXO_DATA8 ® bit 3.508.15:0 (TXO_DATA8)
Proposed Response Response Status W
PROPOSED REJECT. We would need a maintenance request of Clause 115 to do this modification
Cl 115 SC 115.9.3 P 56 L 43 # 280
Hayashi, Takehiro HAT Lab., Inc.
Comment Type E Comment Status D Clause 115 modification
TXO_OHYT is a bit name but not a bit itself. Should follow the consistent expression.
SuggestedRemedy
bit TXO_PHYT ® bit 3.500.14 (TXO_PHYT)
Proposed Response Response Status W PROPOSED REJECT. We would need a maintenance request of Clause 115 to do this modification

Cl 115 SC 115.9.3 P 56 L 48 # 281
Hayashi, Takehiro HAT Lab., Inc.
Comment Type E Comment Status D Clause 115 modification
TXO_REQ is a bit name but not a bit itself. Should follow the consistent expression.
SuggestedRemedy
bit TXO_REQ ® bit 3.500.15 (TXO_REQ)
Proposed Response Response Status W PROPOSED REJECT. We would need a maintenance request of Clause 115 to do this modification

Cl 115 SC 115.9.4.2 P 58 L 8 # 282
Hayashi, Takehiro HAT Lab., Inc.
Comment Type E Comment Status X Clause 115 modification
TXO_MERT
SuggestedRemedy
see #281
Proposed Response Response Status W PROPOSED REJECT. We would need a maintenance request of Clause 115 to do this modification

Cl 115 SC 115.9.4.2 P 58 L 14 # 283
Hayashi, Takehiro HAT Lab., Inc.
Comment Type E Comment Status X Clause 115 modification
TXO_DATA0
SuggestedRemedy
see #281
Proposed Response Response Status W PROPOSED REJECT. We would need a maintenance request of Clause 115 to do this modification

Cl 115 SC 115.9.4.2 P 58 L 16 # 284
Hayashi, Takehiro HAT Lab., Inc.
Comment Type E Comment Status X Clause 115 modification
TXO_REQ
SuggestedRemedy
see #281
Proposed Response Response Status W PROPOSED REJECT. We would need a maintenance request of Clause 115 to do this modification

Cl 115 SC 115.9.4.2 P 58 L 9 # 283
Hayashi, Takehiro HAT Lab., Inc.
Comment Type E Comment Status X Clause 115 modification
TXO_PHYT
SuggestedRemedy
see #281
Proposed Response Response Status W PROPOSED REJECT. We would need a maintenance request of Clause 115 to do this modification

Cl 115 SC 115.9.4.2 P 58 L 14 # 284
Hayashi, Takehiro HAT Lab., Inc.
Comment Type E Comment Status X Clause 115 modification
TXO_DATA0
SuggestedRemedy
see #281
Proposed Response Response Status W PROPOSED REJECT. We would need a maintenance request of Clause 115 to do this modification

Cl 115 SC 115.9.4.2 P 58 L 16 # 286
Hayashi, Takehiro HAT Lab., Inc.
Comment Type E Comment Status X Clause 115 modification
TXO_REQ
SuggestedRemedy
see #281
Proposed Response Response Status W PROPOSED REJECT. We would need a maintenance request of Clause 115 to do this modification

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 Z/withdrawn
SORT ORDER: Clause, Subclause, page, line
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SORT ORDER: Clause, Subclause, page, line
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Cl 115 SC 115.9.4.3 P 58 L 46 #291
Hayashi, Takehiro
HAT Lab., Inc.

Comment Type E
SuggestedRemedy
see #281

Proposed Response
PROPOSED REJECT. We would need a maintenance request of Clause 115 to do this modification

Cl 115 SC 115.14.3 P 60 L 3 #129
Wienckowski, Natalie
General Motors

Comment Type E
SuggestedRemedy
Add *115.14 Protocol implementation conformance statement (PICS) proforma for Clause 115, Physical Coding Sublayer (PCS), Physical Medium Attachment (PMA) sublayer, and Physical Medium Dependent (PMD) sublayer, types 1000BASE-RHA, 1000BASE-RHB, and 1000BASE-RHC33* before 115.15.3.

Proposed Response
PROPOSED REJECT. OAM definition will be included in Clause 300 if comment #11 is approved by TF. Therefore is not applicable.

Cl 125 SC 125.1.3 P 61 L 21 #26
Pérez-Aranda, Rubén
KDPOF

Comment Type T
SuggestedRemedy
Too many details (RS size, GF, …) for an overview in a generic clause.

Proposed Response
PROPOSED ACCEPT IN PRINCIPLE. The detail level is in line with other PHYs described in the same subclause. Replace only PAM2 by NRZ.
IEEE P802.3cz D1.0 Multi-Gig Automotive Optical Ethernet PHY 1st Task Force review comments

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154

CI 125 SC 125.1.3 P 61 L 23 # 154

Grow, Robert
RMG Consulting, KDPOF

Comment Type E Comment Status X optical fiber

Language could be improved for consistency with requested changes to P802.3cz Definitions. The words "an optical fiber" implies a single fiber, not two fibers. What is tailored is also ambiguous (i.e., PHY or the fiber).

SuggestedRemedy
"for transmitting 2.5 Gb/s Ethernet over optical fiber in automotive applications."

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE. See #251 and #150

155

CI 125 SC 125.1.3 P 61 L 29 # 155

Grow, Robert
RMG Consulting, KDPOF

Comment Type E Comment Status X optical fiber

Language could be improved for consistency with requested changes to P802.3cz Definitions. The words "an optical fiber" implies a single fiber, not two fibers. What is tailored is also ambiguous (i.e., PHY or the fiber).

SuggestedRemedy
"for transmitting 5 Gb/s Ethernet over optical fiber in automotive applications."

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE. See #251 and #150

326

CI 125 SC 125.1.3 P 61 L 31 # 326

Abbott, John
Corning

Comment Type E Comment Status D optical fiber

Language could be improved for consistency with requested changes to P802.3cz Definitions. The words "an optical fiber" implies a single fiber, not two fibers. What is tailored is also ambiguous (i.e., PHY or the fiber).

SuggestedRemedy
"for transmitting 2.5 Gb/s Ethernet over optical fiber in automotive applications."

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE. See #251 and #150

150

CI 125 SC 125.1.3 P 63 L 33 # 150

Pérez-Aranda, Rubén
KDPOF

Comment Type T Comment Status D BASE-U

For consistency, same nomenclature should be used in Fig 44-1, 105-1, 125-1. Also in lines 34, 35

SuggestedRemedy
Replace 2.5GBASE-AU PCS and 5GBASE-AU PCS with BASE-U PCS. Replace PMA with BASE-U PMA.

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE. See #251 and #150

28

CI 125 SC 125.1.4 L 63 # 28

Pérez-Aranda, Rubén
KDPOF

Comment Type T Comment Status D optical fiber

Lack of consistency with table 105-1.

SuggestedRemedy
Replace with: "2.5 Gb/s PHY using 64B/65B and Reed-Solomon encoding with NRZ modulation over multimode optical fiber tailored for automotive applications (see Clause 300)." Replace with: "5 Gb/s PHY using 64B/65B and Reed-Solomon encoding with NRZ modulation over multimode optical fiber tailored for automotive applications (see Clause 300)."

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE. See #251 and #150

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 Z/withdrawn

SORT ORDER: Clause, Subclause, page, line

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**IEEE P802.3cz D1.0 Multi-Gig Automotive Optical Ethernet PHY 1st Task Force review comments**

**IEEE 802.cz Multi-Gig Aut D 1.0 Comment Report**

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**Comment:**

1. **Cl 125 SC 125.1.4 P 63 L 17 # 295**

   - **Comment Type:** T
   - **Comment Status:** D
   - **Suggested Remedy:** change to "a pair of multimode optical fiber"
   - **Proposed Response:** PROPOSED ACCEPT IN PRINCIPLE. See #150
   - **Response Status:** W
   - **Proposed Response:** PROPOSED ACCEPT.

2. **Cl 125 SC 125.1.4 P 63 L 17 # 296**

   - **Comment Type:** E
   - **Comment Status:** D
   - **Suggested Remedy:** change PAM2 to NRZ
   - **Proposed Response:** PROPOSED ACCEPT.
   - **Response Status:** W
   - **Proposed Response:** PROPOSED ACCEPT.

3. **Cl 125 SC 125.1.4 P 64 L 23 # 297**

   - **Comment Type:** T
   - **Comment Status:** D
   - **Suggested Remedy:** 2.5GBASE-AU "M" for 2.5GBASE-T1 is wrong
   - **Proposed Response:** PROPOSED ACCEPT.
   - **Response Status:** W
   - **Proposed Response:** PROPOSED ACCEPT.

4. **Cl 125 SC 125.2.4 P 64 L 47 # 30**

   - **Comment Type:** T
   - **Comment Status:** D
   - **Suggested Remedy:** PMD is missed! OMEGA is the first project defining optical PHYs for 2.5 and 5 Gb/s rates.
   - **Proposed Response:** PROPOSED ACCEPT.
   - **Response Status:** W
   - **Proposed Response:** PROPOSED ACCEPT.

**Proposed Responses:***

- For implementation of 2.5GBASE-AU is not mandatory 2.5GBASE-T1. For implementation of 5GBASE-AU is not mandatory 5GBASE-T1. The only thing in common is the re-use of C/55 64B/65B encoding. Also in line 29
- Remove M of rows 2.5GBASE-T1 and 5GBASE-T1, the the columns 2.5GBASE-AU and 5GBASE-AU respectively.
- Delete "M"
- Complete the amendment of clause 125 consistently with clause 105 to include PMD sublayers. Make a review of other missing parts.

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**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 Z/withdrawn

**Sort Order:** Clause, Subclause, page, line

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**05/03/2021 22:38:49**
For consistency, same nomenclature should be used in Fig 44-1, 105-1, 125-1 and 131-1. Also in lines 26, 27

Suggested Remedy
Replace 50GBASE-AU PCS with BASE-U PCS. Replace PMA with BASE-U PMA.

This change can be postponed until 50G baseline for PCS and PMA is adopted.

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
See #5

---

It is multimode fiber

Suggested Remedy
Replace “optical fiber” with “multimode optical fiber”

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE. Use definition in #150: “optical fiber for use in automotive applications”

---

Language could be improved for consistency with requested changes to P802.3cz Definitions. The words “an optical fiber” implies a single fiber, not two fibers. What is tailored is also ambiguous (i.e., PHY or the fiber).

Suggested Remedy
"for transmitting 50 Gb/s Ethernet over optical fiber in automotive applications."

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE. See #251 and #150
Cl 131 SC 131.1.3 P 67 L 31 # 157
Grow, Robert RMG Consulting, KDPOF
Comment Type E Comment Status X Language could be improved for consistency with requested changes to P802.3cz Definitions. The words "an optical fiber" implies a single fiber, not two fibers. What is tailored is also ambiguous (i.e., PHY or the fiber).
SuggestedRemedy "50 Gb/s PHY using TBD encoding over optical fiber in automotive applications (see Clause 300)."
Proposed Response Response Status W PROPOSED ACCEPT IN PRINCIPLE. See #251 and #150

Cl 131 SC 131.2.2 P 67 L 45 # 174
Grow, Robert RMG Consulting, KDPOF
Comment Type E Comment Status D 50GBASE-H PHYs?
SuggestedRemedy 50GBASE-AU
Proposed Response Response Status W PROPOSED ACCEPT.

Cl 131 SC 131.2.3 P 67 L 50 # 156
Pérez-Aranda, Rubén KDPOF
Comment Type E Comment Status EZ This subclauses is not and does not require to be amended. In the Fig 44-1, 105-1, 125-1 and 131-1, FEC sublayer is not included.
SuggestedRemedy Remove it.
Proposed Response Response Status W PROPOSED ACCEPT.

Cl 300 SC 300 P 71 L 1 # 125
Pérez-Aranda, Rubén KDPOF
Comment Type E Comment Status EZ I recommend to explain the abbreviation of "DTEs" that the first seen in this amendment.
SuggestedRemedy Add a sentence “Data Terminal Equipments” explain for "DTEs".
Proposed Response Response Status W PROPOSED REJECT. DTE is already defined in 802.3:2018,Clause 1.5 Abbreviations, page 109

Cl 300 SC 300 P 21 L 4 # 126
Hyakutake, Yasuhiro Adamant Namiki Precision Jewel Co., Ltd.
Comment Type E Comment Status D Many details compared with PMA and PMD. Will need to bePMU updated with C/300 accordingly.
SuggestedRemedy Replace text with: "The 50GBASE-AU PCS is specified in Clause 300." Easier to maintain.
Proposed Response Response Status W PROPOSED ACCEPT.
Pérez-Aranda, Rubén  
KDPOF

Comment Type: E  
Comment Status: D

PMD is a sublayer. They are several types (plural)

Suggested Remedy:
Amend title as: Physical Coding Sublayer (PCS), Physical Medium Attachment (PMA) sublayer, and Physical Medium Dependent (PMD) sublayer, types 2.5GBASE-AU, 5GBASE-AU, 10GBASE-AU, 25GBASE-AU, and 50GBASE-AU.

Proposed Response: Response Status: W
  PROPOSED ACCEPT.

Grow, Robert  
RMG Consulting, KDPOF

Comment Type: E  
Comment Status: X

Language could be improved for consistency with requested changes to P802.3cz Definitions. The words "an optical fiber" implies a single fiber, not two fibers. What is tailored is also ambiguous (i.e., PHY or the fiber).

Suggested Remedy:
"The 2.5GBASE-AU, 5GBASE-AU, 10GBASE-AU, 25GBASE-AU, and 50GBASE-AU PHYs are specified to support operation in automotive applications."

Proposed Response: Response Status: W
  PROPOSED ACCEPT IN PRINCIPLE. See #251 and #150

Grow, Robert  
RMG Consulting, KDPOF

Comment Type: E  
Comment Status: D

"Connection of PMD to the optical fiber medium is with a PMD receptacle and mated plug." I don't think this is a requirement unless/until we adopt an MDI connector.

Suggested Remedy:
It might be better to soften the statement: "Connection of PMD to the optical fiber medium is typically with a PMD receptacle and mated plug."

Proposed Response: Response Status: W
  PROPOSED ACCEPT.
Comment Type E Comment Status D
They are five PHYs

Suggested Remedy
Replace four with five.

Proposed Response Response Status W
PROPOSED ACCEPT.

Comment Type T Comment Status D
Consider the use of BASE-AU i/o MultiGBASE-AU.

Suggested Remedy
Per comment. If agreed, make general change.

Proposed Response Response Status W
PROPOSED ACCEPT.

Comment Type E Comment Status D
For immediate usage of "MultiGBASE-AU" after this, add "hereafter" at the end of the sentence.

Suggested Remedy
Add "hereafter" after "50GBASE-AU PHYs".

Proposed Response Response Status W
PROPOSED ACCEPT.

Comment Type E Comment Status D
"The 50GBASE-AU PHY type.

Suggested Remedy

Proposed Response Response Status W
PROPOSED ACCEPT.
### Comment Report

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| 300 | 300.1.4 | 73 | 30 | 303 | **Hayashi, Takehiro**
| **Comment Type:** E | **Comment Status:** X | **Suggested Remedy:** Change "2.5GBASE-AU ...." to "MultiGBASE-AU"
| **Proposed Response:** | **Response Status:** W | **PROPOSED ACCEPT IN PRINCIPLE.**
| **The term BASE-AU will be used to refer to all PHYs.** |
| | | | | **Comment Status:** X | **Response Status:** W | **Proposed Response:** |
| 300 | 300.1.4 | 73 | 34 | 304 | **Hayashi, Takehiro**
| **Comment Type:** E | **Comment Status:** D | **Suggested Remedy:** The sentence line 34 - 37 is very confusing.
| **Proposed Response:** | **Response Status:** W | **TFTD. Text proposal.**
| **Each optical fiber transmits light with specified wave length in the counter direction and one end of the optical fiber connects to a MultiGBASE-AU compliant PMD transmitter (TX) and the other end connects to the link partner's MultiGBASE-AU compliant PMD receiver (RX).** |
| | | | | **Comment Status:** D | **Response Status:** W | **Proposed Response:** |
| 300 | 300.1.4 | 73 | 42 | 351 | **Swanson, Steve**
| **Comment Type:** E | **Comment Status:** D | **Suggested Remedy:** Delete "...concrete..."
| **Proposed Response:** | **Response Status:** W | **PROPOSED ACCEPT.**
| **PMD is connected to PCS. Terms PMD and PCS exchanged in the PHY of the right side. Also in line 49** |
| | | | | **Comment Status:** D | **Response Status:** W | **Proposed Response:** |
| 300 | 300.1.4 | 73 | 48 | 43 | **Pérez-Aranda, Rubén**
| **Comment Type:** T | **Comment Status:** D | **Suggested Remedy:** Per comment.
| **Proposed Response:** | **Response Status:** W | **PROPOSED ACCEPT.**
| **PM primary interface is used for PMD connection. PMD to PCS exchange is not required.** |

**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  Z/withdrawn

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This introduction to PCS functionality didn't help me much with all of the data grouping names nor how they relate to each other. I personally prefer a top down description, and this introduction mixes top with bottom too much. Better separation of xMII data from PHD information in the description might help, as well as describing the TX path before any of the RX path. Suggested alternate text for lines 6 through 22 also introduces the concept of a payload data path and PHD path because that is helpful to understand what the PCS is doing before getting into too much detail of how it is doing it and it helps to mentally grasp the relationship of the data groupings.

**Suggested Remedy**

The MultiGBASE-AU PCS manages interleaving of xMII data streams with physical layer control information. The fixed-length Transmit Block provides the structure for time division multiplexing these two streams of information. A frame from the xMII can be contained in one or more Transmit Blocks, and xMII frame boundaries have no correlation to Transmit Block boundaries.

On the transmit path, the PCS repeatedly encodes 64-bits (8 octets) of the xMII data stream using 64B/65B encoding (see 300.2.3.4). The encoded xMII data stream is also referred to as the payload.

The physical layer control is organized into Physical Header Data (PHD), and the PHD is divided into a series of 20-bit long PHD Blocks. A PHD Block is placed in the Transmit Block after 80 64B/65B words of encoded data. The PHD Block is followed by 220 parity bits of RS-FEC.

The sequence of 80 64B/65 encoded data words followed by a PHD block followed by RS-FEC parity is called an RS-FEC codeword. A Transmit Block holds 36 RS-FEC codewords. The received payload is decoded to create the xMII receive data stream. A series of received PHD blocks are concatenated to reconstruct the PHD (see 300.2.3.3).

PHD information keeps the receiver clock aligned with the transmitter, and provides link monitoring, Reed-Solomon Forward Error Correction (RS-FEC) encoding (see 300.2.3.5), additive scrambling (see 300.2.3.6), and PAM2 mapping (see 300.2.3.7).

**Proposed Response**

**Response Status** W

PROPOSED ACCEPT IN PRINCIPLE. Combine with the re-structuring ideas in comments #52 and #66
IEEE P802.3cz D1.0 Multi-Gig Automotive Optical Ethernet PHY 1st Task Force review comments

Cl 300 SC 300.1.4 P74 L13 #45
Pérez-Aranda, Rubén KDPOF
Comment Type T Comment Status D

The control information PHD is not intended for clock alignment. PHD is for EEE and OAM capabilities exchange, OAM protocol, PHY control and link monitoring.

Suggested Remedy
Modify per comment.

Proposed Response Response Status W PROPOSED ACCEPT.

Cl 300 SC 300.1.4 P74 L15 #183
Grow, Robert RMG Consulting, KDPOF
Comment Type E Comment Status D EZ

Delete "also included in the Transmit Block", it is redundant with the next sentence.

Suggested Remedy
Per comment, unless text is replaced per other comments.

Proposed Response Response Status W PROPOSED ACCEPT.

Cl 300 SC 300.1.4 P74 L21 #46
Pérez-Aranda, Rubén KDPOF
Comment Type T Comment Status D Modulation

PAM2 mapping is not necessary for the specification (unnecessary step). NRZ modulation in PMD will map bits = 0 and bits = 1 into optical power P0 and P1.

Suggested Remedy
Remove PAM2 per comment.

Proposed Response Response Status W PROPOSED ACCEPT.

Cl 300 SC 300.1.4 P74 L27 #185
Grow, Robert RMG Consulting, KDPOF
Comment Type E Comment Status D BASE-AU

The text seems to change style here, dropping use of MultiGBASE-AU (first paragraph) and starting to use the list of 4 PHY types (on line 33 "<list> PMA" instead of MultiGBASE-AU PMA). "XGMII, 25GMII or 50GMII) will become more tiresome than the list of two which is already a problem. I question if we will only need one new clause because of the 50GMII differences but if we are really committed to a single new clause, then we should be consistent in including 50GBASE-AU as much as possible (with TBD for any specifications of how 50GBASE-AU will work).

Suggested Remedy
The best thing to save editorial effort might be to leave this style problem until the TF picks a baseline for 50GBASE-AU, but it appears unlikely that that will happen for D1.1. IMO, 50GBASE-AU would be the motivation to have more than one clause because it will be more than just a different rate (e.g., different xMII width, perhaps multiple lanes, etc.). To not defer this problem, pick either using MultiGBASE-AU instead of PHY types lists or replace those terms consistently with PHY type lists.

Comment Type: Grammar

Suggested Remedy:
Start sentence with "A".

Proposed Response: PROPOSED ACCEPT.

Comment Type: E

Suggested Remedy:
“PMA functionality is described ….”. I believe the standard document provides a set of specifications, but not descriptions. The PMA functionality is specified. Similar wording is used in several places.

Proposed Response: PROPOSED ACCEPT.

Comment Type: E

Suggested Remedy:
To check all the text to replace describing wording with specifying wording, where appropriate.

Proposed Response: PROPOSED ACCEPT.

Comment Type: E

Suggested Remedy:
Bad hot link references.

Proposed Response: PROPOSED ACCEPT.
Perez-Aranda, Ruben  
KDPOF

Comment Type T  
Comment Status D  
Terminology

PHD term is used with no change of definition.

SuggestedRemedy

Amend 1.4.389 physical header data (PHD) accordingly.

Proposed Response  
Response Status W

PROPOSED ACCEPT IN PRINCIPLE. Amend in 1.4.389 definition a reference to Clause 300.

Perez-Aranda, Ruben  
KDPOF

Comment Type T  
Comment Status D  
Terminology

“portion of the coded PHD called PHD block”. Lack of clarity.

SuggestedRemedy

Introduce a paragraph before the PHD is and how is encoded and split in portions. Then use the introduced terminology in the the commented paragraph to explain the 20-bit PHD encoded sub-blocks are appended to 80 65-bit blocks.

Proposed Response  
Response Status W

PROPOSED ACCEPT.
Comment Type: E  Comment Status: D

The words "appended by" should be improved. Append is ambiguous, it means attached to, but only usually attached at the end. This is a recurring problem in the draft. In some cases order should not be ambiguous but in other cases where something is appended doesn't matter.

Suggested Remedy
Search on "append" (not full word) and replace if point of information being appended matters. For example, this case, with suitable additional clarification might appropriately read: "Each sequence of 80 PDBs is followed by a 20-bit PHD block..."

Proposed Response  Response Status: W
PROPOSED ACCEPT.

---

Comment Type: E  Comment Status: D

"resulting bits" of what? Is it referring to the PDB and PHD block bits of a transmit block?

Suggested Remedy
Clarity. If I understand correctly: "The resulting 5220 bits (80 PDBs plus PHD block) are..."

Proposed Response  Response Status: W
PROPOSED ACCEPT.

---

Comment Type: T  Comment Status: D

PAM2 mapping step is not necessary for the specification.

Suggested Remedy
"A concatenation of 36 consecutive CW shall be scrambled by the binary additive scrambler specified in 300.2.3.6. The Transmit Block is the sequence of the resulting 195840 bits. One bit shall be transmitted per symbol period."

Proposed Response  Response Status: W
PROPOSED ACCEPT.
<table>
<thead>
<tr>
<th>CI</th>
<th>SC</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Proposed Response</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>300.2.1</td>
<td>E</td>
<td>D</td>
<td>change PAM2 to NRZ</td>
<td>W</td>
</tr>
<tr>
<td>300</td>
<td>300.2.1</td>
<td>E</td>
<td>D</td>
<td>change PAM2 to NRZ or explain they are the same</td>
<td>W</td>
</tr>
<tr>
<td>300</td>
<td>300.2.1</td>
<td>E</td>
<td>D</td>
<td>change PAM2 to NRZ (TWICE)</td>
<td>W</td>
</tr>
<tr>
<td>300</td>
<td>300.2.1</td>
<td>E</td>
<td>D</td>
<td>Unnecessary detail for introduction to PCS.</td>
<td>W</td>
</tr>
<tr>
<td>300</td>
<td>300.2.1</td>
<td>T</td>
<td>D</td>
<td>PAM2 demodulation step is not necessary for the specification.</td>
<td>W</td>
</tr>
</tbody>
</table>

Grow, Robert  
RMG Consulting, KDPOF  
**Comment Type** E  
**Comment Status** D  
**Proposed Response** Re-structure text  
**Response Status** W  
**SuggestedRemedy**  
We (myself included) have a tendency to create too many proper names (capitalization). Try to avoid this tendency. Is is really necessary to capitalize PCS Transmit when it is typically followed by either “function” or “process” (without capitalization).  
**SuggestedRemedy** Transmit -> transmit, Receive -> receive in next sentence. A search will show that capitalization is not consistent throughout the draft.  
**Proposed Response**  
PROPOSED ACCEPT.  
**Proposed Response**  
PROPOSED ACCEPT.  
**Proposed Response**  
PROPOSED ACCEPT.  
**Proposed Response**  
PROPOSED ACCEPT.
Figure 300-4. For consistency and because it is not necessary due an extra step in PMD of NRZ mapping, PAM2 mapping block should be eliminated.

**Suggested Remedy**
Remove block, and adapt terminology.

**Proposed Response**
PROPOSED ACCEPT IN PRINCIPLE.
Substitute in Figure 300-4 PAM2_0 by bit_0

---

Figure 300-4. PDB terms to be removed.

**Suggested Remedy**
Per comment

**Proposed Response**
PROPOSED ACCEPT.

---

**Comment Type**
E
**Comment Status**
D
**Terminology**
PHD block is used together with 20-bit PHD block. Ambiguity can be produced.

**Suggested Remedy**
Replace 20-bit PHD block with 20-bit encoded PHD sub-block.

General proposal:
Use PHD to indicate the chunk of binary information per Table 300-2.
Use encoded PHD for the PHD being interleaved and encoded.
Use 20-bit encoded PHD sub-block for the sub-blocks appended to each RS-FEC CW.

**Proposed Response**
PROPOSED ACCEPT.
Figure 300-6. It is an Interleaved TRC. TRC is the inner code in a concatenation of 2 codes (TRC and RS). Interleaving exists because the TRC parity for each information bit is transmitted in different codewords of the outer code, i.e. the RS. Other repetition schemes may be defined w/o interleaving, therefore w/o inner code gain. 

Suggested Remedy
Add “Interleaved” per baseline.

PROPOSED REJECT.
Interleaving is already specified in the transmission ordering.

---

Comment Type: T
Comment Status: D

---

No clear the function of PHD block ordering. The output is the same of the input and it is not clear how the PHD sub-block are transmitted into the complete Transmit Block.

Suggested Remedy
In the bottom line indicates the CWs as RS-FEC CWs (the same of Figure 300-4). For each rectangle split in two, the left one wider with 65-bit blocks, and the right one narrower, with the 20-bit PHD encoded sub-blocks. Then, add arrows from the encoded PHD line to bottom line to indicate order. 
Replace “PHD block ordering” with “PCS transmit ordering”, since it is the general one.

Proposed Response
PROPOSED ACCEPT IN PRINCIPLE.
Proposed modification adds clarity to the figure and decreases ambiguity.
<table>
<thead>
<tr>
<th>Cl.</th>
<th>SC</th>
<th>Page</th>
<th>Line</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Comment</th>
<th>Proposed Response</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>300.2.3</td>
<td>79</td>
<td>67</td>
<td>T</td>
<td>D</td>
<td>There is no shall statement for the transmit ordering. Figures 300-4 and 300-6 are not referenced. A shall statement is necessary to unambiguously define the transmit block ordering. It might be done with equations if it is appropriate.</td>
<td>Per comment.</td>
<td>PROPOSED ACCEPT IN PRINCIPLE. As per #189, the shall statement will be placed at the lowest hierarchy level possible.</td>
</tr>
<tr>
<td>300</td>
<td>300.2.3.1</td>
<td>79</td>
<td>88</td>
<td>T</td>
<td>D</td>
<td>According to the Figure 300-7 PCS transmit function, this clause should be “Payload data path”. There is lack of consistency.</td>
<td>Do it consistent, changing block diagram, text or both.</td>
<td>PROPOSED ACCEPT IN PRINCIPLE. The text will be changed to match the Figure 300-7.</td>
</tr>
<tr>
<td>300</td>
<td>300.2.3.2</td>
<td>80</td>
<td>66</td>
<td>T</td>
<td>D</td>
<td>Which block is performing the TX ordering? The multiplexer? the PHD clock ordering? From the architectural point of view, block diagram should be a before transmit process.</td>
<td>Replace “TRC encoder” with “Interleaved TRC encoder”. Remove “PHD Block ordering”. Replace multiplexer with “TX transmit ordering”. Move block diagram before.</td>
<td>PROPOSED ACCEPT IN PRINCIPLE. No insertion of “interleaved” concept per #64. Remove “PHD Block ordering”. Replace multiplexer with “PCS transmit ordering”. Move 300.2.3 before 300.2.1 for clarity.</td>
</tr>
</tbody>
</table>
Hayashi, Takehiro
HAT Lab., Inc.

Comment Type: E  Comment Status: D  EZ
add the reference of "PHD reception monitor state diagram"

SuggestedRemedy
add (see 3.4.5)

Proposed Response  Response Status: W
PROPOSED ACCEPT.

Hayashi, Takehiro
HAT Lab., Inc.

Comment Type: E  Comment Status: D  EZ
use the same reference

SuggestedRemedy
change 300.3.5 to 300.3.5.3

Proposed Response  Response Status: W
PROPOSED ACCEPT.

Pérez-Aranda, Rubén
KDPOF

Comment Type: T  Comment Status: D  EZ
Per baseline it is not correct. Also in line 51

SuggestedRemedy
Change to: "... and validation of the entire PHD and before the decoding of first RS-FEC codeword of the next received transmit block."

Proposed Response  Response Status: W
PROPOSED ACCEPT.

Pérez-Aranda, Rubén
KDPOF

Comment Type: T  Comment Status: D
TRC is not systematic code.

SuggestedRemedy
Remove "systematically"

Proposed Response  Response Status: W
PROPOSED ACCEPT.

Pérez-Aranda, Rubén
KDPOF

Comment Type: T  Comment Status: D  EZ
TRC is not systematic code.

SuggestedRemedy
Replace with: "The 224 PHD bits from PHD Builder are appended with 16 cyclic redundancy check bits (CRC16) for error detection capability after TRC decoding."

Proposed Response  Response Status: W
PROPOSED ACCEPT.

Pérez-Aranda, Rubén
KDPOF

Comment Type: T  Comment Status: D  EZ
No extra. It is after TRC decoding.

SuggestedRemedy
Move transmit ordering outside, specified before FEC encoder. This new subclauses should include shall statements for the transmit ordering, taking into account the start of transmit block. Modify Figure 300-8 accordingly.

Proposed Response  Response Status: W
PROPOSED ACCEPT IN PRINCIPLE. See #66

Pérez-Aranda, Rubén
KDPOF

Comment Type: T  Comment Status: D  EZ
No extra. It is after TRC decoding.

SuggestedRemedy
Remove "systematically"

Proposed Response  Response Status: W
PROPOSED ACCEPT.
From an architectural point of view, the step number 4 does not belong to the physical header data path, it is outside.

**Suggested Remedy**
Move transmit ordering outside, specified before FEC encoder. This new subclauses should include shall statements for the transmit ordering, taking into account the start of transmit block.

**Proposed Response**
PROPOSED ACCEPT IN PRINCIPLE. See #66. Introduce the concept of start of transmit block.

**Comment**

Hard to understand Fig 300-10.

**Suggested Remedy**
separate the figure into data block format part and control block format part, then add 63 vertical dot lines to represent bits.

**Proposed Response**
TFTD. I think adding 64 vertical lines will make the figure unreadable.

The RS-FEC decoder has 2·t 10-bit RS symbols error detection capability and t 10-bit RS symbols error correction capability. RS-FEC error detection shall be used to flag /E/ for the affected 65-bit blocks. This will improve the MTTFPA of the system.

**Suggested Remedy**
Add shall statement accordingly.

**Proposed Response**
PROPOSED ACCEPT IN PRINCIPLE.

Hierarchically, which information composes the RS message symbols and how it is ordered should in a different sub-clause, the one of PCS transmit ordering. This sub-clause is mixing payload data path with PHD data path. It should be hierarchically in an upper level.

**Suggested Remedy**
Per comment.

**Proposed Response**
PROPOSED ACCEPT IN PRINCIPLE. See #Mux
<table>
<thead>
<tr>
<th>Cl</th>
<th>SC</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Proposed Response</th>
<th>Response Status</th>
<th>Suggested Remedy</th>
<th>Proposed Acceptance</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>300.2.3.6</td>
<td>T</td>
<td>D</td>
<td>PROPOSED ACCEPT.</td>
<td></td>
<td>Replace with: “The initial value of r[0] is xor-ed with the first bit from the RS-FEC encoder to generate ….”</td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>300.2.3.7</td>
<td>T</td>
<td>D</td>
<td>PROPOSED ACCEPT.</td>
<td></td>
<td>Remove clause.</td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>300.2.3.7</td>
<td>E</td>
<td>D</td>
<td>PROPOSED ACCEPT.</td>
<td></td>
<td>Change PAM2 to NRZ</td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>300.2.3.7</td>
<td>E</td>
<td>D</td>
<td>PROPOSED ACCEPT.</td>
<td></td>
<td>Change PAM2 to NRZ</td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>300.2.3.7</td>
<td>E</td>
<td>D</td>
<td>PROPOSED ACCEPT.</td>
<td></td>
<td>Change PAM2 to NRZ</td>
<td></td>
</tr>
</tbody>
</table>

**Suggested Remedy**

- In 802.3bv project, MATLAB code was used for formal definition of the LFSRs sequences along a transmit block. It was used for avoiding ambiguity in the specification and providing an unambiguous way to check the correct understanding of the specification.

- Add MATLAB code and corresponding text per baseline.

- Follow other clauses in 802.3 and add informative annexes with examples of input and output bit streams.
<table>
<thead>
<tr>
<th>Cl</th>
<th>SC</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Comment</th>
<th>SuggestedRemedy</th>
<th>Proposed Response</th>
<th>Response Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>300.2.4</td>
<td>T</td>
<td>D</td>
<td>Receiver</td>
<td>Incomplete specification. No PHD decoding.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>86</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Add text about TRC decoding (majority voting), CRC16 detection. E.g. “The PHD decoding comprises TRC decoding by majority voting for error correction and CRC16 checking for each received PHD. Only when the CRC16 computation indicates that the received PHD is correct shall 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.”</td>
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<tr>
<td>85</td>
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<td></td>
<td></td>
<td></td>
<td>PROPOSED ACCEPT.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>300.2.4</td>
<td>T</td>
<td>D</td>
<td>Receiver</td>
<td>What is code-group? What is parameter rx_symb?</td>
<td></td>
<td></td>
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<tr>
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<td></td>
<td>Replace “The PCS Receive function accepts received code-groups provided by the PMA Receive function via the parameter rx_symb. The PCS receiver uses knowledge of the encoding rules and PMA training alignment to correctly align the Transmit Blocks. The received PAM2 symbols are demapped and descrambling is performed.” with “The PCS receive function accepts detected bits provided by the PMA receive function. The PCS receive function knows to which part of the received Transmit Block the symbols belong, based on the symbol time alignment information provided by the PMA receive function. The PCS receive function shall carry out the binary descrambling, RS-FEC decoding, PHD decoding, and the 64B/65B decoding.”</td>
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<td></td>
<td>PROPOSED ACCEPT.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>300.2.4</td>
<td>T</td>
<td>D</td>
<td>Receiver</td>
<td>Receive block ordering where RS-FEC decoded message is specified to be split into 65-bits blocks and PHD is missed.</td>
<td></td>
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<td></td>
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<td></td>
<td>Add subclause.</td>
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<td>PROPOSED ACCEPT.</td>
<td></td>
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<td>91</td>
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<td>PROPOSED ACCEPT.</td>
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<td>91</td>
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<td>PROPOSED ACCEPT.</td>
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<td></td>
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<tr>
<td>92</td>
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<td>PROPOSED ACCEPT.</td>
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<td>93</td>
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<td></td>
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<td></td>
<td>PROPOSED ACCEPT IN PRINCIPLE.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Proposed Response:**

PROPOSED ACCEPT.

**Comment Status:** D/dispatched  A/accepted  R/rejected  
**Response Status:** O/open  W/written  C/closed  Z/withdrawn
IEEE P802.3cz D1.0 Multi-Gig Automotive Optical Ethernet PHY 1st Task Force review comments

Pérez-Aranda, Rubén

Comment Type: T  Comment Status: D  Transmit Block synch

Transmit block synchronization is not intended to be implemented by PCS (it can't).
Synchronization and timing recovery together with EQ needs to be implemented at PMA level (e.g. if no synchro, timing-recovery and EQ cannot be adapted).

Suggested Remedy:
Remove this clause.

PROPOSED ACCEPT IN PRINCIPLE. See #63

Cl 300 SC 300.2.4.1 P 90 L 46 # 88

Abbott, John

Comment Type: E  Comment Status: D  change PAM2 to NRZ

Suggested Remedy:
change PAM2 to NRZ (twice)

PROPOSED ACCEPT.

Cl 300 SC 300.2.4.2 P 90 L 48 # 89

Pérez-Aranda, Rubén

Comment Type: T  Comment Status: D  Modulation

PMA receive function passes detected bits to PCS. No demapping needed.

Suggested Remedy:
Remove this clause.

PROPOSED ACCEPT.

Cl 300 SC 300.2.4.2 P 90 L 51 # 90

Abbott, John

Comment Type: E  Comment Status: D  change PAM2 to NRZ

Suggested Remedy:
change PAM2 to NRZ

PROPOSED ACCEPT.
PCS descrambler is connected to RS-FEC decoder.

**Suggested Remedy**

Change: The PCS descrambles the data stream and returns the proper sequence of bits to the decoding process for generation of RXD<31:0> to the XGMII or 25GMII. The PCS descrambles the data stream and returns the proper sequence of bits to the RS-FEC decoder.

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

RS-FEC decoder is part of the PCS. Replace "The PCS descrambles the data stream and returns the proper sequence of bits to the decoding process for generation of RXD<31:0> to the XGMII or 25GMII" to "The resulting sequence of bits is used as input to the RS-FEC decoder for generation of RXD<31:0> to the XGMII or 25GMII."

The PCS Receive function shall check that the RS-FEC function defined in 300.2.3.5 decoded correctly the received CW. If the check fails, the RS-FEC CW is invalid. This text should be added to the clause devoted to RS-FEC decoding.

**Suggested Remedy**

Move text with changes, e.g. error detection is not implemented in the receiver by RS-FEC re-encoding (extra latency), but embedded in the RS decoder itself. Not needed such kind of details. Only that RS-FEC shall do both error correction and error detection.

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

A new subclause for RS-FEC decoder will be added. The reference will be changed to this new subclause.
The PMA receive function comprises Transmit Block synchronization, clock recovery for sampling received symbols and adaptive channel equalization. The PMA performs clock recovery on the received signal. The clock recovery includes coarse timing recovery for synchronization with the start of the received Transmit Block and clock frequency deviation estimation, and fine timing recovery to provide a stable clock to sample the received signal from the PMD with a suitable phase for reliable reception (see 300.3.5.1). The PMA receiver should implement channel equalization. The channel equalization technique is up to the implementer.

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

**Suggested Remedy**

Remove last unnecessary sentence: "The PMA receive function comprises Transmit Block synchronization, clock recovery for sampling received symbols and adaptive channel equalization. The PMA performs clock recovery on the received signal. The clock recovery includes coarse timing recovery for synchronization with the start of the received Transmit Block and clock frequency deviation estimation, and fine timing recovery to provide a stable clock to sample the received signal from the PMD with a suitable phase for reliable reception (see 300.3.5.1). The PMA receiver should implement channel equalization."

---

**Comment Type:** T

**Comment Status:** D

**Comment:**

To include transmit block synchronization.

**Proposed Response**

PROPOSED ACCEPT.

**Suggested Remedy**

Replace with: "……. a(n) takes its value from the set {-1, +1}." Remove: "Ts shall be 1000 / (53.125 x S) ps, and depends on the MultiGBASE-AU PHY. See Table 300–1 for the definition of S for each MultiGBASE-AU PHY." Now in transmit function per other comment.

**Proposed Response**

PROPOSED ACCEPT.

---

**Comment Type:** T

**Comment Status:** D

**Comment:**

PAM2 term not needed for specification.

**Proposed Response**

PROPOSED ACCEPT.
IEEE P802.3cz D1.0 Multi-Gig Automotive Optical Ethernet PHY 1st Task Force review comments

Comment:

FALSE: The 64B/65B decoder does not decode received PDBs from the link partner

Suggested Remedy:

FALSE: The 64B/65B decoder does not decode received PDBs from the link partner and local fault is signaled in XGMII or 25GMII.

Proposed Response

PROPOSED ACCEPT IN PRINCIPLE. Replace by: “FALSE: The 64B/65B decoder does not decode received PDBs from the link partner and Local Fault ordered sets are signaled in XGMII or 25GMII.”

Comment:

(see 300.2.3.4.10) no valid reference.

Suggested Remedy:

Replace by a reference to 64B/65B transmit state diagram.

Proposed Response

PROPOSED ACCEPT.

Comment:

Normal inter-frame is encoded in transmitted PDBs.

Suggested Remedy:

Instead of this, the 64B/65B PCS encoder generates idle PDBs (see Figure 300–21).

Proposed Response

PROPOSED ACCEPT.

Comment:

tx_xmii_idle variable and the use in PHY TX control state diagram is not compatible with 64B/65B transmit state diagram of Figure 300-21 and C/46.3.4. tx_xmii_enable variable controls when the 64B/65B encoder starts to encode the XGMII transfers (transition from TX_INIT). When tx_xmii_enable = TRUE, the encoding starts (with Remote Fault according to C/46). 64B/65B transmit state diagram remains always in TX_INIT, and idle detection cannot be produced, and tx_xmii_enable is always FALSE, so transmitter is locked.

Suggested Remedy:

Remove tx_xmii_idle state variable. Also from PHY TX control state diagram, figure and description.

Proposed Response

PROPOSED ACCEPT.

Comment:

so that the remote PHY can perform Transmit Block synchronization, clock recovery and train its equalizers (tx_enable <= TRUE).

Suggested Remedy:

so that the remote PHY can perform clock recovery and train its equalizers (tx_enable <= TRUE).

Proposed Response

PROPOSED ACCEPT.

Comment:

Instead of this, the 64B/65B PCS encoder encodes predefined data to be used for the remote receiver alignment (see Figure 300–21).

Suggested Remedy:

Instead of this, the 64B/65B PCS encoder generates idle PDBs (see Figure 300–21).

Proposed Response

PROPOSED ACCEPT.
Remove "checks, and if necessary, waits until the XGMII or 25GMII transmit data stream transfer is not part of a packet or error propagation (link_status = OK, tx_xmii_idle = TRUE); and then". Consistent with other comments.

**Suggested Remedy**
Per comment.

**Proposed Response**
PROPOSED ACCEPT.

---

"begins link establishment by synchronizing the Transmit Block and recovering clock from the received signal. It is accomplished in two steps. The first step is coarse timing recovery in PMARX_TIMING_COARSE, where Transmit Block synchronization shall be performed. After synchronization with the start of the received Transmit Block is achieved (sotbb_synch = OK), ..."

**Suggested Remedy**

"begins link establishment by recovering clock from the received signal. The clock recovery comprises two stages. The first stage is coarse timing recovery in PMARX_TIMING_COARSE, where symbol synchronization shall be performed. After symbol synchronization is achieved (sotxb_synch = OK), ..."

**Suggested Remedy**

"Blind tracking algorithms for timing recovery can be enabled after the equalizer training has finished." The implementor has the possibility to implement data-aided or blind algorithms for clock recovery and equalizer adaptation during the training phase (i.e. link_status = FAIL). It is decision up to the implementor: When link_status = OK, the clock recovery and equalizer tracking needs to be blind, because transported information will be encoded from XGMII, which is not a priori known. However the implementor may decided not to adapt the equalizers once link_status = OK.

**Suggested Remedy**
Remove. It is implementation decision the algorithms to use.

**Proposed Response**
PROPOSED ACCEPT.

---

**Suggested Remedy**
No definition for "Blind tracking algorithms"

**Suggested Remedy**
add definition

**Proposed Response**
PROPOSED ACCEPT IN PRINCIPLE. Remove sentence per comment #109

---

"whether this reception is reliable"

**Suggested Remedy**
whether the 65B blocks reception is reliable.

**Proposed Response**
PROPOSED ACCEPT.
<table>
<thead>
<tr>
<th>Cl</th>
<th>SC</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Proposed Response</th>
<th>Suggested Remedy</th>
<th>Comment Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>300.3.4.3</td>
<td>T</td>
<td>D</td>
<td>PCS decoder does not decode PDBs received from link partner</td>
<td>“PCS decoder does not decode 65B blocks received from link partner and generate Local Fault”</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PROPOSED ACCEPT IN PRINCIPLE. “PCS decoder does not decode 65B blocks received from link partner and generate Local Fault ordered sets”</td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>300.3.4.3</td>
<td>E</td>
<td>D</td>
<td>“transit” may not a proper term.</td>
<td>Use “transition”</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PROPOSED REJECT. It is a verb, not a noun.</td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>300.3.5.2</td>
<td>T</td>
<td>D</td>
<td>“at the PAM2 decoder decision points”</td>
<td>“at the symbols detector decision points”</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PROPOSED ACCEPT.</td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>300.3.5.2</td>
<td>E</td>
<td>D</td>
<td>“on entry” has no meaning.</td>
<td>Remove it.</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PROPOSED ACCEPT.</td>
<td></td>
</tr>
</tbody>
</table>

**Suggested Remedy**
- PCS decoder does not decode PDBs received from link partner
- PCS decoder does not decode 65B blocks received from link partner and generate Local Fault
- Use “transition” instead of “transit”
- Remove “on entry” from the context
- Change PAM2 to NRZ
<table>
<thead>
<tr>
<th>Cl</th>
<th>SC</th>
<th>P</th>
<th>L</th>
<th>#</th>
<th>Comment Type</th>
<th>SuggestedRemedy</th>
<th>Proposed Response</th>
<th>Response Status</th>
<th>Comment Status</th>
<th>Comment</th>
<th>Adopted</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>300.3.5.2</td>
<td>100</td>
<td>2</td>
<td>347</td>
<td>E</td>
<td>change PAM2 to NRZ</td>
<td></td>
<td>W</td>
<td>D</td>
<td>E</td>
<td>PROPOSED ACCEPT.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>W</td>
<td>D</td>
<td>E</td>
<td>PROPOSED ACCEPT.</td>
</tr>
<tr>
<td>300</td>
<td>300.3.5.2</td>
<td>100</td>
<td>2</td>
<td>347</td>
<td>E</td>
<td>change PAM2 to NRZ</td>
<td></td>
<td>W</td>
<td>D</td>
<td>E</td>
<td>PROPOSED ACCEPT.</td>
</tr>
<tr>
<td>300</td>
<td>300.3.5.2</td>
<td>100</td>
<td>9</td>
<td>116</td>
<td>T</td>
<td>“PAM2 decoder”</td>
<td>Replace with “symbols detector”</td>
<td>W</td>
<td>D</td>
<td>T</td>
<td>PROPOSED ACCEPT.</td>
</tr>
<tr>
<td>300</td>
<td>300.3.5.2</td>
<td>100</td>
<td>9</td>
<td>116</td>
<td>T</td>
<td>“required for reception of RS-FEC coded PAM2”</td>
<td>Replace with “required for reception of RS-FEC codewords”</td>
<td>W</td>
<td>D</td>
<td>T</td>
<td>PROPOSED ACCEPT.</td>
</tr>
<tr>
<td>300</td>
<td>300.3.5.2</td>
<td>100</td>
<td>31</td>
<td>314</td>
<td>T</td>
<td>No explanation of step &quot;PMAMON_SYNCH&quot;</td>
<td>add explanation of &quot;PMAMON_SYNCH&quot;</td>
<td>W</td>
<td>D</td>
<td>T</td>
<td>PROPOSED ACCEPT IN PRINCIPLE. Substitute &quot;After at least one locally transmitted Transmit Block (PMAMON_SYNCH state)&quot;</td>
</tr>
</tbody>
</table>

**Abbreviations:**
- **Cl:** Comment ID
- **SC:** Subclause ID
- **P:** Page number
- **L:** Line number
- **#:** Comment number
- **Type:** T/technical, E/editorial, GR/general
- **Comment Status:** D/dispatched, A/accepted, R/rejected
- **Response Status:** O/open, W/written, C/closed, Z/withdrawn
- **SORT ORDER:** Clause, Subclause, page, line

**Comment Details:**
- **Cl 300 SC 300.3.5.2:** Proposed change to PAM2 to NRZ
- **Cl 300 SC 300.3.5.2:** Proposed change to PAM2 to NRZ
- **Cl 300 SC 300.3.5.3:** Proposed change to PAM2 to NRZ
- **Cl 300 SC 300.3.5.3:** Proposed change to PAM2 to NRZ
- **Cl 300 SC 300.3.5.3:** Proposed change to PAM2 to NRZ
- **Cl 300 SC 300.3.5.3:** Proposed change to PAM2 to NRZ
- **Cl 300 SC 300.3.5.3:** Proposed change to PAM2 to NRZ
- **Cl 300 SC 300.3.5.3:** Proposed change to PAM2 to NRZ
- **Cl 300 SC 300.3.5.3:** Proposed change to PAM2 to NRZ
- **Cl 300 SC 300.3.5.3:** Proposed change to PAM2 to NRZ

**Authors:**
- **Abbott, John** (Corning)
- **Pérez-Aranda, Rubén** (KDPOF)
- **Modulation** (Pérez-Aranda, Rubén KDPPOF)
- **Hayashi, Takehiro** (HAT Lab., Inc.)
IEEE P802.3cz D1.0 Multi-Gig Automotive Optical Ethernet PHY 1st Task Force review comments

Pérez-Aranda, Rubén
KDPOF

These state diagrams belong to PCS sublayer.

Suggested Remedy
Move to PCS subclause.

Proposed Response
Response Status W
PROPOSED ACCEPT.

Pérez-Aranda, Rubén
KDPOF

Move transmission as a subclause to PCS transmit function. Move reception as a subclause to PCS receiver function.

Proposed Response
Response Status W
PROPOSED ACCEPT.

UBLOCK_R is not used by any state diagram. Neither others like LPBLOCK_T/R and IBLOCK_T/R. However these last ones are expected to be used by the state diagrams when LPI is defined (see e.g. C/55, C/149, ).

Suggested Remedy
Remove UBLOCK_R. This PHY will not generate Link Interruption ordered sets to RS.

Proposed Response
Response Status W
PROPOSED ACCEPT.

According to PHY name conventions, BASE-U identifies the PCS and PMA, and BASE-AU the PMD or complete PHY.

Suggested Remedy
Correct per comment.

Proposed Response
Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Substitute "the services provided by a MultiGBASE-AU PMD connected to MultiGBASE-AU PMA." by "the services provided by a BASE-AU PMD connected to BASE-U PMA."

Suggested Remedy
Correct per comment.

Proposed Response
Response Status W
PROPOSED ACCEPT.

Swanson, Steve
Comming Inc

Should we flip the order of 300.7 and 300.8?

Suggested Remedy

Proposed Response
Response Status W
PROPOSED REJECT.
The current order in Draft 1.0 for channel and MDI definition is a mere placeholder, and it is up to the MDI/channel baseline proponent to change or not the order.
IEEE P802.3cz D1.0 Multi-Gig Automotive Optical Ethernet PHY 1st Task Force review comments

**PICS should start on a new page.**

**Suggested Remedy**
Insert page break before PICS.

**PROPOSED ACCEPT.**

---

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

**Grow, Robert**
RMG Consulting, KDPOF

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

The labeling on PDBs highlights a problem we created decades ago with keeping the name 8B/10B. IEEE style should have had us changing the name from the inventor 8b/10b to 8b/10b. (Capital B is byte an lower case b is bit.) We have consistently used a capital B in code names since, but hopefully do not use a captal B for bit anywhere else.

**Suggested Remedy**
Change 65B to 65-bit (like is done for 20-bit).

**PROPOSED ACCEPT.**

---

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

**Hyakutake, Yasuhiro**
Adamant Namiki Precision Jewel Co., Ltd.

The conjunction word "or" change to "and".

**PROPOSED REJECT.**
Accepting this comment would change the meaning of the sentence. A set of PCS, PMA and PMD sublayer can only be a PHY type that will be only one pick from the set {2.5GBASE-AU, 5GBASE-AU, 10GBASE-AU, 25GBASE-AU, 50GBASE-AU}, so right the conjunction word is "or".

**Suggested Remedy**
Correct the text accordingly.

**PROPOSED ACCEPT.**

---

**Comment Type:** T  **Comment Status:** OAM  **D**

**OAM optional capability should be BASE-U OAM and specified in C/300, although its specfication do references C/115 to make easier maintenance and avoiding repeating text unnecessarily.**

**Suggested Remedy**
Correct the text accordingly.

**PROPOSED ACCEPT.**
“that there be” —> meaning?

Suggested Remedy
Remove.

PROPOSED ACCEPT.

Table 300-5. The delay is the same for all the data-rates: 11264 bit times, 22 pause quanta. Delay in ns is result of multiplying the number of bit-time by the bit transmission period (i.e. bit time).

Suggested Remedy
Correct table per comment.

PROPOSED ACCEPT.

“for control of the MultiGBASE-AU PHY and link (see 300.3.4) and for PHY link quality (see 300.3.5)” phrase is redundant and unclear.

Suggested Remedy
E.g.: “for PHY and link management (see 300.3.4 and 300.3.5)”

PROPOSED ACCEPT IN PRINCIPLE.
Replace "for control of the MultiGBASE-AU PHY and link (see 300.3.4) and for PHY link quality (see 300.3.5)," with "for PHY control and link monitoring (see 300.3.4) and link quality (see 300.3.5)."