Cl **99**   *SC*   *P* **1**   *L* **1**   # 1

Maguire, Valerie   Siemon

Comment Type **E**   *Comment Status* **X**

Variable link appears to be broken. IEEE P802.3bv™/D1.1 should read IEEE P802.3bv™/D1.2.

SuggestedRemedy

Repair broken variable link.

Proposed Response   *Response Status* **O**

Cl **115**   *SC*   *P*   *L*   # 2

Stassar, Peter   Huawei Technologies

Comment Type **TR**   *Comment Status* **X**

In Clause 115 no required BER has been specified, so the required performance for the optics is not specified.

SuggestedRemedy

specify required BER performance

Proposed Response   *Response Status* **O**

Cl **115**   *SC* **115.4**   *P*   *L*   # 3

Stassar, Peter   Huawei Technologies

Comment Type **TR**   *Comment Status* **X**

Only a single PMD 1000BASE-RH is given, but there are in fact 6 subtypes. It is general practice to make different PMD types for different power budgets. See for instance 100GBASE-LR4 and 100GBASE-ER4, which are specified in a single clause in the same tables, with different columns.

SuggestedRemedy

create 6 PMDs

Proposed Response   *Response Status* **O**

Cl **115**   *SC* **115.2**   *P*   *L*   # 4

Stassar, Peter   Huawei Technologies

Comment Type **TR**   *Comment Status* **X**

A definition of tx_signal is not provided

SuggestedRemedy

create definition

Proposed Response   *Response Status* **O**

Cl **115**   *SC* **115.3**   *P*   *L*   # 5

Stassar, Peter   Huawei Technologies

Comment Type **ER**   *Comment Status* **X**

Values for tx_signal in 115.3.3 are not clear because of the following provided relation: $a \leq$ tx_signal $< a$

SuggestedRemedy

add a "minus" sign to the "left-hand" "a"

Proposed Response   *Response Status* **O**

Cl **115**   *SC* **115.2**   *P*   *L*   # 6

Stassar, Peter   Huawei Technologies

Comment Type **TR**   *Comment Status* **X**

In 115.2.1 tx_signal is stated to be analog but it is also defined to be one of 512 discrete values in Clause 114

SuggestedRemedy

fix ambiguity

Proposed Response   *Response Status* **O**

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COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn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

Comment ID **6**   Page 1 of 15
07/09/2015 18:56:55

Cl **115**   *SC*   *P*   *L*   # 7
Stassar, Peter   Huawei Technologies

Comment Type   **TR**   *Comment Status* **X**

How many optical levels are there? In some places there seem to be 512 (-256 through 255) and others 513 (-256 through +256)?

SuggestedRemedy

resolve ambiguity by appropriate definitions and specifications

Proposed Response   *Response Status* **O**

Cl **115**   *SC* **115.4**   *P*   *L*   # 8
Stassar, Peter   Huawei Technologies

Comment Type   **TR**   *Comment Status* **X**

In the transmitter spec in Table 115-3 the required signaling rate is not specified.

SuggestedRemedy

add signaling rate to Table 115-3

Proposed Response   *Response Status* **O**

Cl **115**   *SC* **115.4**   *P*   *L*   # 9
Stassar, Peter   Huawei Technologies

Comment Type   **TR**   *Comment Status* **X**

The transmitter spec in Table 115-3 does not provide "conventional" transmitter quality parameters, like TDP, which are normally used to ensure that the required distance can be bridged with acceptable penalties, and eye mask (or similar) spec that guarantees sufficient eye opening of the 16-level PAM16 signal under worst case (reflection) conditions. The commenter has been unable to find results of testing to check if the currently used parameters "amplitude", "linearity" and "spectral width" are sufficient to support multi-vendor interoperability.

SuggestedRemedy

generate appropriate specification for multi-vendor compatibility

Proposed Response   *Response Status* **O**

Cl **115**   *SC* **115.4**   *P*   *L*   # 10
Stassar, Peter   Huawei Technologies

Comment Type   **TR**   *Comment Status* **X**

The transmitter spec in Table 115-3 does not contain a parameter "Optical return loss tolerance (max)" and "Transmitter reflectance (max)".

SuggestedRemedy

add additional parameters

Proposed Response   *Response Status* **O**

Cl **115**   *SC* **115.4**   *P*   *L*   # 11
Stassar, Peter   Huawei Technologies

Comment Type   **TR**   *Comment Status* **X**

The receiver spec in Table 115-4 is only specified for different power levels, not associated with any performance requirement. Even a mobile phone will comply to it.

SuggestedRemedy

generate specification for multi-vendor compatibility

Proposed Response   *Response Status* **O**

Cl **115**   *SC* **115.4**   *P*   *L*   # 12
Stassar, Peter   Huawei Technologies

Comment Type   **TR**   *Comment Status* **X**

The receiver spec in Table 115-4 does not contain any reflectance requirement.

SuggestedRemedy

add reflectance to Table 115-4

Proposed Response   *Response Status* **O**

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: Comment ID

Comment ID **12**   Page 2 of 15
07/09/2015 18:56:56

Cl **115**   *SC* **115.4**   *P*   *L*   # 13

Stassar, Peter   Huawei Technologies

Comment Type   **TR**   *Comment Status* **X**

The receiver spec in Table 115-4 does not contain a wavelength spec.

SuggestedRemedy

add wavelength range to Table 115-4

Proposed Response   *Response Status* **O**

Cl **115**   *SC* **115.4**   *P*   *L*   # 14

Stassar, Peter   Huawei Technologies

Comment Type   **TR**   *Comment Status* **X**

The receiver spec in Table 115-4 does not contain a maximum input power specification

SuggestedRemedy

add maximum input power to Table 115-4

Proposed Response   *Response Status* **O**

Cl **115**   *SC* **115.4**   *P*   *L*   # 15

Stassar, Peter   Huawei Technologies

Comment Type   **TR**   *Comment Status* **X**

The receiver spec in Table 115-4 does not contain a damage threshold specification

SuggestedRemedy

add damage threshold to Table 115-4

Proposed Response   *Response Status* **O**

Cl **115**   *SC* **115.4**   *P*   *L*   # 16

Stassar, Peter   Huawei Technologies

Comment Type   **TR**   *Comment Status* **X**

The receiver spec in Table 115-4 does not contain a spec for stressed receiver sensitivity with associated conditions.

SuggestedRemedy

add spec for stress receiver sensitivity with appropriate testing conditions to Table 115-4

Proposed Response   *Response Status* **O**

Cl **115**   *SC* **115.4**   *P*   *L*   # 17

Stassar, Peter   Huawei Technologies

Comment Type   **TR**   *Comment Status* **X**

The link spec in Table 115-5 does not contain any maximum penalty, nor a maximum discrete reflectance.

SuggestedRemedy

add maximum penalty and maximum discrete reflectance to Table 115-5

Proposed Response   *Response Status* **O**

Cl **115**   *SC* **115.5**   *P*   *L*   # 18

Stassar, Peter   Huawei Technologies

Comment Type   **TR**   *Comment Status* **X**

The optical measurements clause 115.5 does not contain any performance related testing, like TDP, with associated reference transmitters and receivers.

SuggestedRemedy

add performance related testing to Clause 115.5

Proposed Response   *Response Status* **O**

Cl **115**   *SC* **115.5**   *P*   *L*   # 19

Stassar, Peter   Huawei Technologies

Comment Type   **TR**   *Comment Status* **X**

The optical measurements clause 115.5 does not contain a worst case channel spec (115.4.3 is informative).

SuggestedRemedy

add worst case channel spec to clause 115.5

Proposed Response   *Response Status* **O**

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: Comment ID

Comment ID **19**   Page 3 of 15
07/09/2015 18:56:56

Cl **115**   *SC*   *P*   *L*   # 20

Stassar, Peter   Huawei Technologies

Comment Type   **TR**   *Comment Status*   **X**

It's totally unclear if this optical configuration is not sensitive to reflections from the POF link or whether it's very sensitive to reflections (as one would expect from the kind of multi-level signals used) and then how to limit penalties by appropriate specifications of maximum discrete reflectance and receiver reflectance.

SuggestedRemedy

resolve sensitivity to reflections or state that it is not relevant, supported by appropriate testing

Proposed Response   *Response Status*   **O**

Cl **115**   *SC*   *P*   *L*   # 21

Stassar, Peter   Huawei Technologies

Comment Type   **TR**   *Comment Status*   **X**

Kind of conclusion on the assessment of Clause 115: The general state of Clause 115 for the optical spec appears underspecified to enable the development of multi-vendor interoperable devices. It probably will require a significant rewrite to bring it to a significantly more complete level comparable to the 1G bi-directional specs in Clause 59.

SuggestedRemedy

rewrite Clause 115 to make it appropriate to support multi-vendor compatibility, similar to Clause 59. Furthermore show test results that specification methodology is sufficient to support multi-vendor compatibility.

Proposed Response   *Response Status*   **O**

Cl **115**   *SC* **115.3.3**   *P* **107**   *L* **42**   # 22

Takahashi, Satoshi   POF promotion

Comment Type   **E**   *Comment Status*   **X**

A minus sign is missing to "a" at the left side of the inequality.

SuggestedRemedy

Change "a =< tx_signal < a" to "-a =< tx_signal < a".

Proposed Response   *Response Status*   **O**

Cl **114**   *SC* **114.2.1**   *P* **40**   *L* **15**   # 23

Remein, Duane   Huawei

Comment Type   **TR**   *Comment Status*   **X**

"Transmit Blocks shall be transmitted continuously" but the material in 114.5 implies that this is not always the case.

SuggestedRemedy

Add "except when operting is low power mode as described in 114.5"

Update PICS accordingly

Proposed Response   *Response Status*   **O**

Cl **114**   *SC* **114.2.1**   *P* **40**   *L* **44**   # 24

Remein, Duane   Huawei

Comment Type   **TR**   *Comment Status*   **X**

Text describing this figure indicates "28 payload data sub-blocks (numbered 0 through 27)". I must assume these are the CW blocks labled 0 to 223 in the figure? Is the lower part of the figure (CW193-CW223) a continuation of the upper part? If so there is no indication of this in the text or figure. The meaning of the large "PHS12", "S212" and "S1" blocks at the bottom of the figure escapes me, why are they here? If this is to indicate the prefix claimed to be shown (see pg 42 lin 48 "As shown at the bottom of Figure 114–4, the pilot S1 has a prefix and postfix" these should be labled.

SuggestedRemedy

Align text and figure.
Add key to figure indication the meaning of "S#", "CW#", "PHS#"
Add prefix/postfix lables.

I would reccommend taking a more hierachal approach to this figure (either top down or bottom up) and modifying the text accordingly. As is it is very confusing.

Proposed Response   *Response Status*   **O**

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: Comment ID

Comment ID **24**   Page 4 of 15
07/09/2015 18:56:56

Cl **114**   *SC* **114.2.1**   *P* **40**   *L* **47**   # 25
Remein, Duane   Huawei

Comment Type **E**   *Comment Status* **X**
"Each pilot or header sub-block is composed of 160 symbols"

SuggestedRemedy
should be "and" not "or"
Each pilot and header sub-block is composed of 160 symbols

Proposed Response   *Response Status* **O**

Cl **114**   *SC* **114.2.1**   *P* **41**   *L* **6**   # 26
Remein, Duane   Huawei

Comment Type **E**   *Comment Status* **X**
Stray words "Pilots data path:

SuggestedRemedy
Strike

Proposed Response   *Response Status* **O**

Cl **114**   *SC*   *P*   *L*   # 27
Remein, Duane   Huawei

Comment Type **E**   *Comment Status* **X**
"[-2k0, 2k0)" right paren should probably be a bracket

SuggestedRemedy
per comment

Proposed Response   *Response Status* **O**

Cl **114**   *SC* **114.2.1.2**   *P* **43**   *L* **10**   # 28
Remein, Duane   Huawei

Comment Type **E**   *Comment Status* **X**
"An MLS generator is used ..." This para can be greatly simplified

SuggestedRemedy
Change to read:
"A separate instantiation of the MLS generator illustrated in Figure 114-7 is used to generate a binary pseudo-random sequence of 13,312 bits length, which is then mapped into PAM256 symbols as shown in Figure 114–8. See 114.2.3.3.3 for a definition of S/P and B2D blocks. The symbols at the input of the power scaling block belong to the set {-255, -253, …, 253, 255}."

Proposed Response   *Response Status* **O**

Cl **114**   *SC* **114.2.2.1**   *P* **44**   *L* **3**   # 29
Remein, Duane   Huawei

Comment Type **TR**   *Comment Status* **X**
Is there some really good reason not to use the CRC16 generator already defined in 55.4.2.5.13?

Also not typicall we refer to this as CRC16 not CRC-16 (fix in 21 places)

SuggestedRemedy
Reuse the CRC16 of 55.4.2.5.13. Strike most of the text here and include by reference.

Proposed Response   *Response Status* **O**

Cl **114**   *SC* **114.2.2.3**   *P* **44**   *L* **48**   # 30
Remein, Duane   Huawei

Comment Type **T**   *Comment Status* **X**
Why are we imposing a requirement on a figure?
"The BCH encoder in Figure 114–9 shall systematically ..."
Not that the requirement to use BCH encoding is in 114.2.2.4

SuggestedRemedy
Change to:
"The BCH encoder in Figure 114–9 systematically encodes 720 information bits into 896 coded bits.
Update PICS accordingly.

Proposed Response   *Response Status* **O**

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: Comment ID

Comment ID **30**   Page 5 of 15
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Cl **00**   *SC* **0**   *P* **46**   *L* **3**   # 31
Remein, Duane   Huawei

Comment Type **ER**   *Comment Status* **X**
Several instances of number exceeding 3 digits exist without the proper separtor ",". For example in this para there is 705 600 in 2 places which should apprear as 705,600

SuggestedRemedy
Review the entire draft for large numbers and insert the comma as appropriate.

Proposed Response   *Response Status* **O**

Cl **114**   *SC* **114.2.3.1.1**   *P* **46**   *L* **42**   # 32
Remein, Duane   Huawei

Comment Type **ER**   *Comment Status* **X**
Physical Data Block (PDB) or physical data block (PDB) as in 1.4.x. Pick one

SuggestedRemedy
per comment

Proposed Response   *Response Status* **O**

Cl **114**   *SC* **114.3.2.1.1**   *P* **63**   *L* **27**   # 33
Remein, Duane   Huawei

Comment Type **ER**   *Comment Status* **X**
Cl 1.2 indicates SD states exit to the right, while many SD's also show exit conditions to the bottom. This SD, Figure 114–34, has exit to top, right & bottom and state entrance from left, top and bottom.
We should strive for consistency.
This problem also applies to:
Figure 114–37

SuggestedRemedy
Change all SD's so state entry is from top or left and exit is from right or bottom only (preferrably use one, such as enter from top & exit from bottom, not both). Add a BEGIN state and and INITIAL state (with exit pma_reset = ON + link_control neq ENABLE

Proposed Response   *Response Status* **O**

Cl **114**   *SC* **114.3.2.1.1**   *P* **63**   *L* **27**   # 34
Remein, Duane   Huawei

Comment Type **TR**   *Comment Status* **X**
Variables in SD should be defined before presentation of the SD.

SuggestedRemedy
Add/move the formal definitions of all variables, conters, constants, etc. used in Fig 114-34 before the SD. Subsequent usage should reference the origional definition.

Proposed Response   *Response Status* **O**

Cl **114**   *SC* **114.3.2.1.1**   *P* **63**   *L* **29**   # 35
Remein, Duane   Huawei

Comment Type **TR**   *Comment Status* **X**
There appear to be a number of requirements (i.e., "shall " statements) that cannot be verified or confirmed. FOr example:
"The first stage is coarse timing recovery in PMARX_TIMING_COARSE, where symbol synchronization shall be performed using the a priori known pilot signal contained in the S1 sub-block at the beginning of each received Transmit Block (see Figure 114–4)."
Generally requirements can be confirmed via some arbitrary testing. I don't see how this requirement can be tested.

SuggestedRemedy
Review all requriements for testability and remove any (i.e, convert to factual statements) that cannot be tested in a device offered for sale.
Update PICS accordingly.

Proposed Response   *Response Status* **O**

Cl **114**   *SC* **114.3.2.1.1**   *P* **63**   *L* **47**   # 36
Remein, Duane   Huawei

Comment Type **ER**   *Comment Status* **X**
Variable names should not be hyphenated as in:
"the link partner (rcvr_th-
p_lock = OK)"

SuggestedRemedy
Change all variable names to non-hyphenating (place curser in variable name and type <esc> n s in framemaker)

Proposed Response   *Response Status* **O**

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: Comment ID

Comment ID **36**

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07/09/2015 18:56:56

Cl **114**   *SC* **114**   *P* **37**   *L* **11**   # 37

Remein, Duane   Huawei

Comment Type **TR**   *Comment Status* **X**

SD precedence and conventions is not clearly stated.

SuggestedRemedy

Add Conventions subclause to 114.1 Overview
"Conventions
The notation used in the state diagrams in this clause follows the conventions in 21.5.
Should there be a discrepancy between a state diagram and descriptive text, the state
diagram prevails."

Add additional statements describing other conventions used in this clause (i.e, matlab
conventions, etc.)

Proposed Response   *Response Status* **O**

Cl **114**   *SC* **114.3.2.1.5**   *P* **69**   *L* **41**   # 38

Remein, Duane   Huawei

Comment Type **TR**   *Comment Status* **X**

SD variables should have a declared type. Examples of declared type include
Boolean, signed integer, Unsigned n-bit integer, n-bit counter, n-bit binary, array, ... (n is
some positive integer).

SuggestedRemedy

Add TYPE: statement to all varaible definitions

Proposed Response   *Response Status* **O**

Cl **114**   *SC* **114.1.1**   *P* **37**   *L* **33**   # 39

Remein, Duane   Huawei

Comment Type **ER**   *Comment Status* **X**

Three letter acronym (TLA) not defined; "THP"

SuggestedRemedy

Ensure that every TLA used is defined once in the first instance in each clause (or use
words, they never misconstrue and are all well defined).
TLAs that are rarely use (like ISI) need not be defined, they especially need to be defined
twice and not used.
Use of TLAs should also make grammatical sense if they are expanded in a sentence.
Use of partial TLA, such as "TP" pg 30 ln 14 "received with TH precoding" should be
avoided, TP could mean "Toilet Paper" as it has not been defined, I hate to think what TP
precoding means :-)

Proposed Response   *Response Status* **O**

Cl **114**   *SC* **114.4**   *P* **78**   *L* **4**   # 40

Remein, Duane   Huawei

Comment Type **TR**   *Comment Status* **X**

What is the relationship between this OAM channel and Clause 57 Operations,
Administration, and Maintenance (OAM)? Given the similar terminology I would naturally
assume they are somehow related but this is not clear.

SuggestedRemedy

Add text clarifyin gthe relationship. If not related find some other term than OAM which
already carries a specific meaning in 802.3 as defined in Cl 57.

Proposed Response   *Response Status* **O**

Cl **114**   *SC* **114.4**   *P* **78**   *L* **16**   # 41

Remein, Duane   Huawei

Comment Type **TR**   *Comment Status* **X**

I believe all register in Cl 45 are accessable through MDIO not just those in clauses
45.2.3.48 and 45.2.3.49.

SuggestedRemedy

Strike the sentence.

Proposed Response   *Response Status* **O**

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: Comment ID

Comment ID **41**   Page 7 of 15
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Cl **114** *SC* **114.4.2** *P* **79** *L* **9** # 42
Remein, Duane Huawei

Comment Type **TR** *Comment Status* **X**

802.3 has a long standing logical not operator and it is !~.

SuggestedRemedy

Change "the symbol ~ denotes logical not operator" to "the symbol "!" denotes logical not operator" and replace all "~" with "!"

Proposed Response *Response Status* **O**

Cl **114** *SC* **114.8** *P* **90** *L* **47** # 43
Remein, Duane Huawei

Comment Type **TR** *Comment Status* **X**

Clause 45 is optional and cannot be made mandatory by any other clause.

SuggestedRemedy

Change:
"Any PHY type using 1000BASE-H shall provide the management capabilities referenced in this clause and further defined in Clause 45."
to
"The 1000GBASE-H PHY shall provide managment capabilities described in this clause. The optional MDIO capability described in Clause 45 defines several variables that provide control and status information for and about the PHY. If MDIO is implemented, it shall map MDIO control variables to PHY control and status variables as shown in Table 114-x."
Provide a cross reference to all managable variables between Cl 114 variable name and Cl 45 register name/bits (for example see 82.3.1 Table 82–10, 83.6 Table 83–3, 84.6 Table 84-2&3 and others).

Proposed Response *Response Status* **O**

Cl **114** *SC*   *P* **70** *L* **48** # 44
Remein, Duane Huawei

Comment Type **TR** *Comment Status* **X**

rcvr_clock_lock is set/reset when "the clock has been properly recovered". Yet I see no quantitative statements to indicate when this has been acomplished. I would expect some jitter specificaition or at least some reference to the receive clock and how to determine it is properly aligned.

SuggestedRemedy

Add the necessary text and figures or point to where this specificaiton lives.

Proposed Response *Response Status* **O**

Cl **115.1** *SC* **115.1** *P* **103** *L* **7** # 45
Remein, Duane Huawei

Comment Type **E** *Comment Status* **X**

"it shall be integrated ..." but the only "it" I see is "the PMD and medium". Should I conclude that the POF must come permanently attached to the PHY device?

SuggestedRemedy

change "i"t to "the PMD"

Proposed Response *Response Status* **O**

Cl **115** *SC* **115.3.2** *P* **107** *L* **21** # 46
Remein, Duane Huawei

Comment Type **TR** *Comment Status* **X**

It strikes me as odd that we imply that link type C is only for automotive use. Wouldn't these work in planes, trains, boats, trucks and home attics too?

SuggestedRemedy

Change "Automotive grade" to "Extended temperature grade"

Proposed Response *Response Status* **O**

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: Comment ID

Comment ID **46**

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07/09/2015 18:56:57

Cl **115** *SC* **115.4.1** *P* **110** *L* **1** # 47

Remein, Duane Huawei

Comment Type **TR** *Comment Status* **X**

It appears the there is an assumption regarding the linearity of the transmitter as you are using PAM-16 modulation. However there is nothing in the transmitter specification regarding this. If I were to use a totally non-linear laser this scheme could not work. It does not matter that such a device may not exist as you cannot predict the future.

SuggestedRemedy

Add the required linearity specifications.

Proposed Response *Response Status* **O**

Cl **115** *SC* **115.6.1** *P* **114** *L* **31** # 48

Remein, Duane Huawei

Comment Type **TR** *Comment Status* **X**

This statement implies that the customer may not want to purchase your product if you don't meet their specifications that may be above and beyond what IEEE specifies, which of course is true but need not be stated.
"All equipment subject to this clause may be additionally required to conform to applicable local, state, or national motor vehicle standards or as agreed to between the customer and supplier."

SuggestedRemedy

Strike the statement

Proposed Response *Response Status* **O**

Cl **115** *SC* **115.6.2** *P* **114** *L* **36** # 49

Remein, Duane Huawei

Comment Type **TR** *Comment Status* **X**

the statement below strike me as odd when I look at Table 115–1 and observe link types A and B which are intended for "Consumer" and "Industrial" grade temperature ranges.
"The 1000BASE-RH PHY is designed to operate in the automotive environment"

This is especially odd because as I recall the SG attempted to use home appplications as a justification for Braod Market Potential.

Clearly if a 1000BASE-H PHY is designed for automotive environment they will cost themselves out of other markets.

SuggestedRemedy

Reframe the section so that it covers all intended markets.

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **116** *L* **1** # 50

Remein, Duane Huawei

Comment Type **TR** *Comment Status* **X**

I count about 119 PICS statements between Cl 114 & 115. However a search reveals 136 shall statements, each requireing a PICS statement.

SuggestedRemedy

Review the PICS for completeness and added PICS statements for any shall statement without a PIC entry.

Proposed Response *Response Status* **O**

Cl **114** *SC* **114.9.4** *P* **92** *L* **19** # 51

Pérez-Aranda, Rubén KDPOF

Comment Type **ER** *Comment Status* **X**

Round operation should be eliminated from eq. 114-24 because it can imply any kind of DAC resolution specification that should be up to the implementer.

SuggestedRemedy

Eliminate rounding from equation to avoid misunderstanding / confusion because it is not necessary.

Proposed Response *Response Status* **O**

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: Comment ID

Comment ID **51**

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Cl **114**   *SC* **114.9.2**   *P* **92**   *L* **1**   # 52

Pérez-Aranda, Rubén   KDPOF

Comment Type **T**   *Comment Status* **X**

For test modes 2 and 3, values of symbols should be 256 and -256, instead of 255 and -255 to be precise, because the TX signal in normal operation (no test) will take -256 and will be able to approach very close 256 depending on the implementation.
The ER optical measurement will be more precise considering 256 instead of 255.
Please, pay attention that the error produced in ER measurement with definition in D1.2 (i.e. 255) is 0.1 dB that probably will be below the accuracy of any experimental setup.

SuggestedRemedy

Replace 255 with 256 in test modes 2 and 3.

Proposed Response   *Response Status* **O**

Cl **115**   *SC* **115.5.8**   *P* **113**   *L* **35**   # 53

Brugarolas, Luis Miguel   KDPOF

Comment Type **TR**   *Comment Status* **X**

Equation 115-4 is not correct

SuggestedRemedy

Replace with:
RIN = 10*log10(Pn/(BW*Ioe^2*R))–G

Proposed Response   *Response Status* **O**

Cl **115**   *SC* **115.4**   *P* **109**   *L* **46**   # 54

Anslow, Pete   Ciena

Comment Type **TR**   *Comment Status* **X**

Clause 115 should provide sufficient specifications to allow a transmitter from one manufacturer to interoperate with a receiver from another manufacturer.
The requirements in 115.4 do not seem to be sufficient to achieve this.

See attached presentation "anslow_3bv_01_0915" containing simulations of a transmitter that is compliant with the specifications but a completely closed eye.

SuggestedRemedy

Include sufficient specifications to adequately define the transmitter quality so that a receiver manufacturer has some limit as to how bad the transmitted eye can be.

Proposed Response   *Response Status* **O**

Cl **115**   *SC* **115.4.2**   *P* **110**   *L* **43**   # 55

Anslow, Pete   Ciena

Comment Type **TR**   *Comment Status* **X**

There seem to be no specifications on the receiver at all other than it should absorb a certain range of optical power. A brick would do that satisfactorily.

SuggestedRemedy

Provide a set of receiver specifications:
wavelength range
damage threshold
receiver sensitivity (optical power for a given BER)
overload
reflectance

Proposed Response   *Response Status* **O**

Cl **115**   *SC* **115.3.5**   *P* **109**   *L* **6**   # 56

Grow, Robert   RMG Consulting

Comment Type **T**   *Comment Status* **X**

Figure 115-2 – Power-on = FALSE is something that to me is imaginary. If there is no electrical power to the PMD, a state diagram implementation is incapable of making any state decisions.

SuggestedRemedy

This should be rewritten as pmd_reset or similar with pmd_reset including a power on reset which typically keeps logic from going off and doing stuff until logic operability is assumed.

Proposed Response   *Response Status* **O**

Cl **45**   *SC* **45.2.3.54**   *P* **33**   *L* **7**   # 57

Grow, Robert   RMG Consulting

Comment Type **T**   *Comment Status* **X**

Is this really the way we want to define 1000BASE-H counters. It is common to clear a counter like this on read. It then is the responsibility of the management software to keep a aggregate count (by adding the value to the aggregate count). As defined, a read and write are required and that results in potentially missing data counts.

SuggestedRemedy

I prefer self clearing counter to the counter that is reset as described here.

Proposed Response   *Response Status* **O**

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: Comment ID

Comment ID **57**

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Cl **114**   *SC* **114.3.1**   *P* **62**   *L* **21**   # 58
Grow, Robert   RMG Consulting

Comment Type **TR**   *Comment Status* **X**

PHD.RX.REQ.THP.COEF transmission order is confusing. The field is described as 108 bits, so all 9 coefficients are in the same field. OAM is broken up into multiple 16 bit fields for the message, but placing 9 coefficients into a single field leads to confusion and it seems the index order of OAM registers and coefficient b(i) are different. In text the field is described as PHD.RX.REQ.THP.COEF[0:8] to me that says the first coefficient is b(0) and the ninth is b(8). But in the second paragraph of 114.3.1, the implied order in the field is b(8) first and b(0) last, when harmonizing the field transmission order specified in the sixth paragraph.

Table 114.2 uses a b(i) in indication 114.3.1 sixth paragraph indicates bit order for PHD transmission. It is lsb to msb of each field from top to bottom of Table 114-2

SuggestedRemedy

The first option and perhaps the cleanest is to split the coefficients into nine fields with b(8) first and b(0) ninth. The bit order description of page 62, line 21 could then be deleted.

If this isn't done, the description should be retained, but perhaps the line 21 COEF description should be moved to the sixth paragraph.

With either option, if line 21 properly describes transmission order, the collective name for coefficients or the field name if it remains a 108 bit field should be PHD.RX.REQ.THP.COEF[8:0] (not [0:8] as b(8) is in the MSBs of the field) to harmonize the bit orders in line 21 and line 36.

Proposed Response   *Response Status* **O**

Cl **114**   *SC* **114.3.1**   *P* **65**   *L* **18**   # 59
Grow, Robert   RMG Consulting

Comment Type **TR**   *Comment Status* **X**

To a member of the IEEE RAC, the OAM type field and registers look like a potentially confusing identifier. No values are specified in P802.3bv, nor is any reference provided where they are (or will be) defined. It isn't clear if values are to be standardized, vendor specified or locally administered. If standardized, at least a footnote indicating where things will be standardized should be added. If locally administered, that should be stated. If though it is vendor specified (e.g., by an auto manufacturer), the field should include a vendor identifier from a registry (i.e., OUI/CID).

SuggestedRemedy

Better define the field. The best approach for vendor assignment would be to use Std 802 protocol identifier format which uses (OUI/CID) to allow a vendor to create a unique protocol identifier.

Proposed Response   *Response Status* **O**

Cl **114**   *SC*   *P*   *L*   # 60
Grow, Robert   RMG Consulting

Comment Type **TR**   *Comment Status* **X**

I think we still have the specifications of TX PHD fields getting set by the state diagrams. As I understand it, we don't want TX PHD fields changes any point in Transmit Block transmission, but rather only at start of a Transmit Block. For example, at that commit point, LOCPHD.RX.HDRSTATUS <- loc_rcvr_hdr_lock would occur, not at the same time the state diagram variable changes.

SuggestedRemedy

Clarify all text describing variable to PHD field mapping to indicate the PHD field is only updated at Transmit Block start.

Proposed Response   *Response Status* **O**

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: Comment ID

Comment ID **60**   Page 11 of 15
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Cl **115**   *SC*   *P***104**   *L***31**   # 61

Grow, Robert   RMG Consulting

Comment Type **TR**   *Comment Status* **X**

The change to continuous generation for a number of the primitives is wrong. We erred in the resolution of D1.1 comment resolution for comments #392 and #393. The D1.1 text did though need improvement. While it is prudent for an implementation to use a continuous signal, the style for service primitives is to only signal changes in value as an event.

SuggestedRemedy

PMD_TXPWR.request, PMD_RXPWR.request, and PMD_SDINH.request, should be generated only on a change in value of the parameter. For example: "The PMD_TXPWR.request(tx_pwr) is generated by the PCS transmitter whenever the value of tx_pwr changes as specified by the state diagram of Figure 114-46 (see 114.5)."

Proposed Response   *Response Status* **O**

Cl **114**   *SC* **114.2.3.3.7**   *P***59**   *L***52**   # 62

Grow, Robert   RMG Consulting

Comment Type **E**   *Comment Status* **X**

Typo

SuggestedRemedy

Change "is" to "as".

Proposed Response   *Response Status* **O**

Cl **114**   *SC* **114.3.1**   *P***64**   *L***23**   # 63

Grow, Robert   RMG Consulting

Comment Type **E**   *Comment Status* **X**

Table 114.2 uses a b(i) in Description but b(k) in Valid values column for coefficient number. b(i) is used throughout text in the clause

SuggestedRemedy

Change "b(k)" in Valid values to "b(i)".

Proposed Response   *Response Status* **O**

Cl **115**   *SC* **115.4.1**   *P***109**   *L***52**   # 64

Grow, Robert   RMG Consulting

Comment Type **E**   *Comment Status* **X**

I think "normal inter-frame" frame should be normal operation. This also seems to be mostly redundant with the similar, but more correct phrase in parenthesis on page 110, line 39.

SuggestedRemedy

Delete the parenthetical expression on p.109, l.52.

Proposed Response   *Response Status* **O**

Cl **00**   *SC* **0**   *P***1**   *L***1**   # 65

Grow, Robert   RMG Consulting

Comment Type **E**   *Comment Status* **X**

Fix bad draft numbers on title page.

SuggestedRemedy

Make sure draft number in lines 1, 4, and 27 are all the FrameMaker draft number variable rather than text.

Proposed Response   *Response Status* **O**

Cl **45**   *SC* **45.2.3.48.4**   *P***27**   *L***12**   # 66

Grow, Robert   RMG Consulting

Comment Type **E**   *Comment Status* **X**

The subclause title for TXO_TYPE appears to have been accidentally merged into the preceding paragraph.

SuggestedRemedy

TXO_TYPE (3.500.11:0) needs to be on its own line and a FrameMaker 5th level heading style (H5).

Proposed Response   *Response Status* **O**

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: Comment ID

Comment ID **66**   Page 12 of 15
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Cl **45**　　*SC* **45.2.3.48**　　　　*P* **26**　　　*L* **8**　　　# 67
Grow, Robert　　　　　　　　　RMG Consulting

Comment Type **E**　　　*Comment Status* **X**
　Add a reference for register usage description.

SuggestedRemedy
　At end of first sentence add: (see 114.4.1).

Proposed Response　　　*Response Status* **O**

Cl **45**　　*SC* **45.2.3.49**　　　　*P* **27**　　　*L* **28**　　　# 68
Grow, Robert　　　　　　　　　RMG Consulting

Comment Type **E**　　　*Comment Status* **X**
　Add a reference for register usage description.

SuggestedRemedy
　At end of first sentence add: (see 114.4.3).

Proposed Response　　　*Response Status* **O**

Cl **45**　　*SC* **45.2.3.52.1**　　　*P* **32**　　　*L* **36**　　　# 69
Grow, Robert　　　　　　　　　RMG Consulting

Comment Type **E**　　　*Comment Status* **X**
　Grammar.

SuggestedRemedy
　Delete superflous "in".

Proposed Response　　　*Response Status* **O**

Cl **45**　　*SC* **45.2.3.54.2**　　　*P* **33**　　　*L* **34**　　　# 70
Grow, Robert　　　　　　　　　RMG Consulting

Comment Type **E**　　　*Comment Status* **X**
　Grammar.

SuggestedRemedy
　Change "are" to "is".

Proposed Response　　　*Response Status* **O**

Cl **114**　　*SC* **114.3.1**　　　　*P* **64**　　　*L* **4**　　　# 71
Grow, Robert　　　　　　　　　RMG Consulting

Comment Type **ER**　　　*Comment Status* **X**
　PHD description could use some clarification. 114.3.1 talks about PHD fields and as does
　Table 114-2, yet column 1 of Table 114-2 has a heading of symbol.

SuggestedRemedy
　Change heading of column 1 heading of Table 114-2 to Field Name.

Proposed Response　　　*Response Status* **O**

Cl **00**　　*SC* **0**　　　　*P*　　　*L*　　　# 72
Grow, Robert　　　　　　　　　RMG Consulting

Comment Type **ER**　　　*Comment Status* **X**
　I have been slow to realize this, but I now think ME (Management Entity) should be STA
　(station management entity) for consistency with Std 802.3. We shouldn't be defining a
　new term.

SuggestedRemedy
　Replace Management Entity and ME with station management entity and STA
　respecively, and modify surrounding text if required.

Proposed Response　　　*Response Status* **O**

Cl **45**　　*SC* **45.2.3.51.14**　　　*P* **32**　　　*L* **9**　　　# 73
Grow, Robert　　　　　　　　　RMG Consulting

Comment Type **ER**　　　*Comment Status* **X**
　Add a reference for OAM support.

SuggestedRemedy
　At end of first sentence add: (see 114.4).

Proposed Response　　　*Response Status* **O**

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: Comment ID

Comment ID **73**　　　Page 13 of 15
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Cl **78**　　　*SC* **78.2**　　　　　　*P* **35**　　　*L* **17**　　　　# 74
Grow, Robert　　　　　　　　RMG Consulting

Comment Type **ER**　　　*Comment Status* **X**
Bad editing instruction.

SuggestedRemedy
Change "above" to "below".

Proposed Response　　　*Response Status* **O**

Cl **114**　　　*SC* **114.3**　　　　　　*P* **66**　　　*L* **1**　　　　# 75
Pérez-Aranda, Rubén　　　　　　KDPOF

Comment Type **T**　　　*Comment Status* **X**
Move subclause "PHY TX control state diagram" ahead of the "PHY RX control state diagram" to improve clarity. TX should be described before RX.

SuggestedRemedy
per comment

Proposed Response　　　*Response Status* **O**

Cl **114**　　　*SC* **114.3**　　　　　　*P* **70**　　　*L* **52**　　　# 76
Pérez-Aranda, Rubén　　　　　　KDPOF

Comment Type **TR**　　　*Comment Status* **X**
State variable link_control is not well defined: variable that controls the connection between PCS and PMD sublayers.
It is an state variable that enables and disables all the PMA functionalities and as a consequence, the functionalities of PCS and PMD.

SuggestedRemedy
Change definition to:
"link_control
　Variable that controls the PMA functional operation
　Values: DISABLE: prevent operation of PMA sublayer
　　　　　ENABLE: permit operation of PMA sublayer"

Also modify accordingly the text regarding to link_control in description of state diagrams:
P62,L51
P66,L31
P66,L50
P67,L40
P68,L50
P69,L26
P72,L44
P73,L24
P76,L6
P80,L45
P82,L49

Proposed Response　　　*Response Status* **O**

Cl **115**　　　*SC* **115.3.3**　　　　　*P* **107**　　　*L* **38**　　　# 77
Tajima, Takayuki　　　　　　　Yazaki Corporation

Comment Type **E**　　　*Comment Status* **X**
It is not clear the symbol of "P" in the equation.

SuggestedRemedy
Install " "(space) at the head of this equation.

Proposed Response　　　*Response Status* **O**

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: Comment ID

Comment ID **77**　　　Page 14 of 15
07/09/2015 18:56:57

Cl **115**   *SC* **115.3.5**   *P* **108**   *L* **52**   # 78

Tajima, Takayuki   Yazaki Corporation

Comment Type   **E**   *Comment Status*   **X**

    Improper description in Receive condition at Table 115-2

SuggestedRemedy

    Eliminate "is" before <-35 dBm or add "is" before >-29dBm.

Proposed Response   *Response Status*   **O**

Cl **115**   *SC* **115.4.1**   *P* **110**   *L* **1**   # 79

Tajima, Takayuki   Yazaki Corporation

Comment Type   **E**   *Comment Status*   **X**

    Table 115-3 is located at the wrong position.

SuggestedRemedy

    Move Table 115-3 to the end of subsection.

Proposed Response   *Response Status*   **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **79**   Page 15 of 15
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   07/09/2015 18:56:57
SORT ORDER: Comment ID