Cl **97** *SC* **97.1** *P* **29** *L* **15** # 146

Brown, Thomas Vitesse Semiconducto

Comment Type **ER** *Comment Status* **D**

The 1000BASE-T1 PHY is one of the Gigabit Ethernet family of high-speed full-duplex network specifications,
defining the automotive link capable of operating at 1000 Mb/s and intended to be operated over a single
pair of balanced copper cabling, referred to as an automotive link segment (Type A) or additional link
segment (Type B), defined in 97.5.4.

SuggestedRemedy

The 1000BASE-T1 PHY is one of the Gigabit Ethernet family of high-speed full-duplex network specifications, capable of operating at 1000 Mb/s and intended to be operated over a single pair of balanced copper cabling, referred to as an automotive link segment (Type A) or additional link
segment (Type B), defined in 97.5.4.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.2** *P* **30** *L* **6** # 170

Lo, William Marvell Semiconducto

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

Section 97.3.7 and 97.3.8 in wrong location

SuggestedRemedy

Move 97.3.7 to 97.2.1
Move 97.3.8 to 97.2.2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See comment #127

Cl **97** *SC* **97.2** *P* **30** *L* **6** # 127

McClellan, Brett Marvell

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

missing text for 97.2 1000BASE-T1 Service Primitives and Interfaces

SuggestedRemedy

Use text in mcclellan_3bp_01_0215.pdf.
Also delete redundant sections 97.3.7 and 97.3.8

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.3.2.2** *P* **31** *L* **19** # 141

Brown, Thomas Vitesse Semiconducto

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

Alignment to 80B/81B is performed in the PCS.

SuggestedRemedy

Alignment to 80B/81B blocks is performed in the PCS.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
This is a technical comment!

Cl **97** *SC* **97.3.2.2** *P* **31** *L* **26** # 137

Mitsuru, Iwaoka Yokogawa Electric Cor

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

The term "OAM9" is used without definition.

SuggestedRemedy

Add a definition of "OAM9" in the subclause 1.4.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
No definition for OAM9 was provided

Cl **97** *SC* **97.3.2.2** *P* **31** *L* **32** # 142

Brown, Thomas Vitesse Semiconducto

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

These codes are used for training mode and only transmit the values {–1, +1}.

SuggestedRemedy

These codes are used for training mode and only transmit the PAM 3 symbols {–1, +1}.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

These codes are used for training mode and only transmit PAM3 symbols {–1, +1}.

Cl **97** *SC* **97.3.2.2.11** *P* **35** *L* **45** # 139
Brown, Thomas Vitesse Semiconducto

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

The code is based on the generating polynomial shown in Equation (97–1).
(97–1)
where
is a root of the binary primitive polynomial and is represented as 0x002
G(Z) (Z – ái) = A44Z44

SuggestedRemedy

I prefer the generator polynomial equations given in shen_3bp_01a_0914.pdf

on slide 3. There was a motion to pass this proposal and it would be good traceability to this slide 3. This equation also lists the powers of alpha explicitly.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The editor believes the current code is based on agreement from TF. Please present your case at the meeting.

Cl **97** *SC* **97.3.2.2.11** *P* **37** *L* **28** # 149
Brown, Thomas Vitesse Semiconducto

Comment Type **TR** *Comment Status* **D**

where
is the data vector . is the first data octet and is
the last.
is the parity vector . is the first parity octet and is the last.

SuggestedRemedy

The word octet is used twice in reference to a 9-bit symbol. The phrase 9-bit symbol would be preferrer.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Unclear what the actual change needs to be.

Cl **97** *SC* **97.3.2.2.11** *P* **37** *L* **37** # 150
Brown, Thomas Vitesse Semiconducto

Comment Type **TR** *Comment Status* **D**

The resulting payload of scrambled 45 81B blocks, followed by the OAM9 symbol results in a total payload
of 45 . 81 + 9 = 3646 bits.

SuggestedRemedy

The sum should be 3654.

The way to is that 406 * 9 =3654.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "3646" to "3654"

Cl **97** *SC* **97.3.2.2.4** *P* **33** *L* **42** # 143
Brown, Thomas Vitesse Semiconducto

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

The LSB of the OAM9
symbol is transmitted first.

SuggestedRemedy

The figure 97-2 should show the LSB of the OAM9 symbol as the left most bit to make it clear.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Please identify the specific change to be made in Figure 97-2.

Cl **97** *SC* **97.3.2.2.5** *P* **35** *L* **10** # 148
Brown, Thomas Vitesse Semiconducto

Comment Type **TR** *Comment Status* **D**

OR(p) = Bitwise OR of TC[p:N-1]
NEXT(p)[0:3] = bit position of lowest bit in TC[p:N-1] that is a 1. Bit 3 is MSB.
NEXT(p)[4] = 0 if Bitwise SUM of TC[p:N-1] = 1, else 1

SuggestedRemedy

The range of p variable is not defined explciitly. Needs to be define as 0..N-1.

or

It appears the variable n can be used in place of p which has a range defined.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The specific change is not explicit. Please explain at the F2F meeting

Cl **97** *SC* **97.3.2.2.8** *P* **36** *L* **13** # 128

McClellan, Brett Marvell

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

"When deleting, the first four Idles after a TX_EN is deasserted shall not be deleted."
Is this a remnant from Clause 55 that doesn't apply to 1G?
task force should discuss

SuggestedRemedy

delete text

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.3.2.3** *P* **39** *L* **16** # 144

Brown, Thomas Vitesse Semiconducto

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

The received 81B-RS frames are decoded with error correction; the framing is checked; and the 80B/81B ordered sets are converted to 10 data blocks to obtain the signals RXD<7:0>,

SuggestedRemedy

change to: 10 data bytes

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change to "10 data octets" - we should not use "byte"
Change all instances of "byte" to "octet" in the draft

Cl **97** *SC* **97.3.5.2.4** *P* **43** *L* **30** # 129

McClellan, Brett Marvell

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

Per the approved proposal, the ENCODE function shall only encode LPI_IDLE while in the SEND_LPI state.

SuggestedRemedy

Add this text:
"The ENCODE function shall only encode LPI_IDLE while in the SEND_LPI state.
Otherwise LPI_IDLE is converted to Idle in the ENCODE function."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.3.5.4** *P* **45** *L* **12** # 140

Brown, Thomas Vitesse Semiconducto

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

The term UCT is not defined locally in this document.

SuggestedRemedy

Include UCT in section 1.5 - means unconditional transition

Proposed Response *Response Status* **W**

PROPOSED REJECT.
It is a well known 802.3 term and does not get specified in any project

Cl **97** *SC* **97.3.5.4** *P* **47** *L* **34** # 130

McClellan, Brett Marvell

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

The SEND_LPI and SEND_WAKE have no exit in case of link down, they need transitions to SEND_IDLES if !tx_data_mode

SuggestedRemedy

add transitions to SEND_IDLES if !tx_data_mode

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

add transitions from SEND_LPI and SEND_WAKE states to SEND_IDLES state under condition "!tx_data_mode"

Cl **97** *SC* **97.4.2.5** *P* **53** *L* **48** # 117

Tu, Mike Broadcom

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

There is no interop between PHY with autoneg enable and PHY in forced mode

SuggestedRemedy

Adopt changes proposed in "tu_3bp_03_0215.pdf".

Proposed Response *Response Status* **O**

Cl **97** *SC* **97.4.2.5** *P* **53** *L* **48** # 119

Tu, Mike Broadcom

Comment Type **TR** *Comment Status* **D**

Unable to exchange optional capacities EEE and OAM for PHY w/o autoneg.

SuggestedRemedy

Adopt proposed changes outlined in "tu_3bp_01_0215.pdf".

Proposed Response *Response Status* **O**

Cl **97** *SC* **97.4.2.5** *P* **54** *L* **16** # 100

Regev, Alon Ixia

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

Figures 97-13 through 97-16 should be in B&W

SuggestedRemedy

Remove colors from figures 97-13 through 97-16

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Figures will be redrawn without colors

Cl **97** *SC* **97.4.2.5.4** *P* **55** *L* **25** # 116

Tu, Mike Broadcom

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

SLAVE should be able to start with "timing_lock_ok=1".

SuggestedRemedy

Change line 25 from

"...the first transmitted PMA frame shall be the first row of Table 97–5 for the MASTER and the first row of Table 97–6 for the SLAVE."

to:

"...the first transmitted PMA frame shall be the first row of Table 97–5 for the MASTER and the first or second row of Table 97–6 for the SLAVE."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.4.2.5.8** *P* **56** *L* **40** # 122

Chen, Steven Broadcom

Comment Type **TR** *Comment Status* **D**

Oct4 should also be covered by CRC16

SuggestedRemedy

Change
"Afterwards Oct5 through Oct10 are used to compute"
To
"Afterwards Oct4 through Oct10 are used to compute"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.4.2.5.8** *P* **57** *L* **2** # 105

Regev, Alon Ixia

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

In Figure 97-17, the CRCGen vs. CRCout switch is not clear as to its value in the CRCout state.

I have made a similar comment for figure 98-3 in the last review cycle (see comment #88 on draft 1.1).

SuggestedRemedy

Show the CRCgen vs. CRCout switch as a switch that has a "0" input in the CRCout state and the input from the XOR below in the CRCgen state.

See file at http://www.ieee802.org/3/bp/public/jan15/IEEE%20802.3bp%20-%20Jan2015%20-%20proposed%20changes%20to%20Figure%2098-3.pptx for an example of the change to the CRCout switch drawing.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Figure 97-17 seems to be a replica of Figure 98-3. I am sure we could cross reference between Clauses, if CRC16 polynomials are exactly the same and operation can be generalized. The similarity needs to be discussed at the meeting.

Cl **97** *SC* **97.4.2.5.9** *P* **56** *L* **51** # 124

Chen, Steven Broadcom

Comment Type **TR** *Comment Status* **D**

Auto-Negotiation is optional according to the Objective. The FORCE mode needs to be introduced here.

SuggestedRemedy

Insert the following paragraph after line 50.
"For 1000BASE-T1 PHY without Auto-Negotiation, FORCE mode is used to achieve link acquisition between two 1000BASE-T1 link partners. During FORCE mode, PMA_CONFIG is pre-determined to be Master or Slave via management control during initialization or via default hardware set-up. FORCE mode is used to set link_control to ENABLE during the PHY initialization. When link_control=ENABLE, PHY Control enters the INIT_MAXWAIT_TIMER state. Upon entering this state the maxwait_timer is started."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Added missing "the"s in a few places

"For 1000BASE-T1 PHY without Auto-Negotiation, the FORCE mode is used to achieve link acquisition between two 1000BASE-T1 link partners. During the FORCE mode, PMA_CONFIG is pre-determined to be Master or Slave via management control during initialization or via default hardware set-up. The FORCE mode is used to set link_control to ENABLE during the PHY initialization. When link_control=ENABLE, PHY Control enters the INIT_MAXWAIT_TIMER state. Upon entering this state the maxwait_timer is started."

Cl **97** *SC* **97.4.2.5.9** *P* **56** *L* **51** # 123

Chen, Steven Broadcom

Comment Type **TR** *Comment Status* **D**

Auto-Negotiation is optional according to the Objective.

SuggestedRemedy

Change beginning of line 51

"During Auto-Negotiation, PHY Control…"

To
"Auto-Negotiation implementation is optional. During Auto-Negotiation, PHY Control…"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change beginning of line 51

"During Auto-Negotiation, PHY Control…"

To
"Auto-Negotiation implementation is optional. During the Auto-Negotiation process, PHY Control…"

Cl **97** *SC* **97.4.2.5.9** *P* **57** *L* **18** # 109

Regev, Alon Ixia

Comment Type **TR** *Comment Status* **D**

Use of auto negotiation is optrional, but there is no specification of behavior is auto-negotiation is not implemented and PHY Link Synchronization is used instead.

The variable link_control is defined in 98.5.1 (see page 59, ln. 31). If auto negotiation is not implemented, then any reference to clause 98 is undefined. We need to make sure that link_control referenced either clause 98 (if auto negotiation is used) or clause 97.6 (if auto negotiation is not used and PHY Link Synchronization is used instead).

SuggestedRemedy

Page 56, line 51:
Replace
"During Auto-Negotiation, PHY Control is in the DISABLE_1000BASE-T1_TRANSMITTER state and the transmitters are disabled."
With
"Auto-Negotiation is optional in 1000BASE-T1 PHYs. If Auto-Negotiation is used, during Auto-Negotiation PHY Control is in the DISABLE_TRANSMITTER state and the transmitters are disabled. If Auto-Negotiation is not used, PHY Control is in the DISABLE_TRANSMITTER state and the transmitters are controlled by the PHY Link Synchronization state mahcine."

Page 57, line 18:
Replace
"When the Auto-Negotiation process asserts link_control=ENABLE PHY Control enters the INIT_MAXWAIT_TIMER state. Upon entering this state the maxwait_timer is started."
With
"When the Auto-Negotiation asserts link_control=ENABLE (if Auto Negotiation is used) or whent the PHY Link Synchronization process asserts link_control=ENABLE , PHY Control enters the INIT_MAXWAIT_TIMER state. Upon entering the INIT_MAXWAIT_TIMER state, the maxwait_timer is started."

Page 58, line 23:
Replace
"Upon power on, reset, or release from power down, the Auto-Negotiation algorithm sets link_control=DISABLE and sends half duplex Differential Manchester Encoded data to signal its presence to a remote station."
With
"Upon power on, reset, or release from power down, the Auto-Negotiation or PHY Link Synchronization algorithms set link_control=DISABLE."

Page 58, line 27:
Replace
"If the presence of a remote 1000BASE-T1 station is established, the Auto-Negotiation algorithm permits full operation by setting link_control=ENABLE."
With
"When Auto-Negotiation establishes the presence of a remote 1000BASE-T1 station (if Auto Negotiation is used0 or when the PHY Link Synchronization finishes the synchronization fucntion (if Auto-Negotiation is not used), link_control is set to ENABLE, and the Link Monitor state machines begins monitoring the PCS and receiver lcok status."

Page 59, Line 31
Replace the definition of link_control:
"link_control
This variable is defined in 98.5.1."
with
"link_control
When Auto-Negotiation is used, this variable is set as defined in 98.
When Auto-Negotiation is not used, this variable is set as defined in section 97.6"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Page 56, line 51:
Replace
"During Auto-Negotiation, PHY Control is in the DISABLE_1000BASE-T1_TRANSMITTER state and the transmitters are disabled."
With
"The Auto-Negotiation function is optional for 1000BASE-T1 PHYs. If the Auto-Negotiation function is used, during the Auto-Negotiation process PHY Control is in the DISABLE_TRANSMITTER state and the transmitters are disabled. If the Auto-Negotiation function is not used, PHY Control is in the DISABLE_TRANSMITTER state and the transmitters are controlled by the PHY Link Synchronization state mahcine."

Page 57, line 18:
Replace
"When the Auto-Negotiation process asserts link_control=ENABLE PHY Control enters the INIT_MAXWAIT_TIMER state. Upon entering this state the maxwait_timer is started."
With
"When the Auto-Negotiation process asserts link_control=ENABLE or whent the PHY Link Synchronization process asserts link_control=ENABLE , PHY Control enters the INIT_MAXWAIT_TIMER state. Upon entering the INIT_MAXWAIT_TIMER state, the maxwait_timer is started."

Page 58, line 23:
Replace
"Upon power on, reset, or release from power down, the Auto-Negotiation algorithm sets link_control=DISABLE and sends half duplex Differential Manchester Encoded data to signal its presence to a remote station."
With
"Upon power on, reset, or release from power down, the Auto-Negotiation or PHY Link Synchronization algorithms set link_control=DISABLE."

Page 58, line 27:
Replace
"If the presence of a remote 1000BASE-T1 station is established, the Auto-Negotiation algorithm permits full operation by setting link_control=ENABLE."

With
"When the Auto-Negotiation function establishes the presence of a remote 1000BASE-T1 PHY or when the PHY Link Synchronization finishes the synchronization fucntion, link_control is set to ENABLE, and the Link Monitor state machines begins monitoring the PCS and receiver lcok status."

Page 59, Line 31
Replace the definition of link_control:
"link_control
This variable is defined in 98.5.1."
with
"link_control
When the Auto-Negotiation function is used, this variable is set as defined in 98.
When the Auto-Negotiation function is not used, this variable is set as defined in section 97.6"

Cl **97** *SC* **97.4.4.1** *P* **59** *L* **32** # 120

Chen, Steven Broadcom

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

The link_control variable cannot only be defined in 98.5.1 since Clause 98 is an optional function. Suggest the following modifications.

SuggestedRemedy

Change
"This variable is defined in 98.5.1."

To
"This variable is set by management and FORCE mode configuration. If the Auto-Negotiation is implemented and enabled, this variable is defined in 98.5.1.
Values: ENABLE or DISABLE"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #109

Cl **97** *SC* **97.4.5** *P* **61** *L* **11** # 132

McClellan, Brett Marvell

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

Competing paths in PHY Control and Link Monitor lead to the local device and link partner going out of sync. One device can start a retrain (98ms) the other can go to Autoneg or Synchronization and will have to wait for the local device. See McClellan_3bp_02_0215.pdf

SuggestedRemedy

Remove INIT_MAXWAIT_TIMER
DISABLE_TRANSMITTER -> SILENT when link_control = ENABLE
In SEND DATA remove "stop maxwait_timer"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Use McClellan_3bp_02_0215.pdf, page 4 for reference.

Cl **97** *SC* **97.4.5** *P* **62** *L* **21** # 131

McClellan, Brett Marvell

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

PMA_watchdog_status is gated by maxwait_time_done. This means that it won't take effect until the 98ms timer expires.
PMA_watchdog_status was proposed as a fast link drop to ensure a PHY returns to Autoneg or Synchronization as quickly as possible when the link partner stops transmitting.

SuggestedRemedy

maxwait_time_done * (PCS_status = NOT_OK + loc_rcvr_status = NOT_OK) + PMA_watchdog_status = NOT_OK

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.4.5.2** *P* **62** *L* **24** # 125

Chen, Steven Broadcom

Comment Type **TR** *Comment Status* **D**

Auto-Negotiation is optional according to the Objective. Suggest the following changes.

SuggestedRemedy

Change
"NOTE 2-The variables link_control and link_status are designated as link_control_1GigT1 and link_status_1GigT1, respectively, by the Auto-Negotiation Arbitration state diagram (Figure 98-14)."

To
"NOTE 2-The variables link_control and link_status are designated as link_control_1GigT1 and link_status_1GigT1, respectively, by the Auto-Negotiation Arbitration state diagram (Figure 98-14) if the optional Auto-Negotiation is implemented."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change
"NOTE 2-The variables link_control and link_status are designated as link_control_1GigT1 and link_status_1GigT1, respectively, by the Auto-Negotiation Arbitration state diagram (Figure 98-14)."

To
"NOTE 2-The variables link_control and link_status are designated as link_control_1GigT1 and link_status_1GigT1, respectively, by the Auto-Negotiation Arbitration state diagram (Figure 98-14) if the optional Auto-Negotiation function is implemented."

Cl **97** *SC* **97.5** *P* **62** *L* **30** # 180

Andrew Gardner Linear Technology Cor

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

Baseline text from Chini_3bp_02_0115.pdf includes test fixtures for transmitter droop measurement, transmitter distortion measurement, MDI jitter measurement, and PSD/transmit power level measurement. All of these fixtures use DC coupled termination resistors or baluns that may be damaged in the presence of power over data lines capable transmitters. Although this clause is only intended to address PHY specific issues, showing test fixtures that can be damaged by DC bias at the MDI creates the potential for confusion and incompatibility with PoDL when implementing the aforementioned test circuits.

SuggestedRemedy

Add low loss AC coupling capacitors in series with the termination resistors and baluns used by the transmitter test circuits included in Chini_3bp_02_0115.pdf

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Implement http://www.ieee802.org/3/bp/public/jan15/chini_3bp_02_0115.pdf

Cl **97** *SC* **97.5** *P* **62** *L* **30** # 181

Andrew Gardner Linear Technology Cor

Comment Type **ER** *Comment Status* **D**

Baseline text from Chini_3bp_02_0115.pdf was not incorporated into D1.2 as per the motion approved by the group in Atlanta.

SuggestedRemedy

Incorporate the baseline text from Chini_3bp_02_0115.pdf into the draft.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See comment #180.

Cl **97** *SC* **97.5.4.2.4** *P* **68** *L* **23** # 138

Mitsuru, Iwaoka Yokogawa Electric Cor

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

The definition of "Coupling attenuation" is not provided.

SuggestedRemedy

Define the meaning and the test procedure of "Coupling attenuation".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
No specific text was provided.

Cl **97** *SC* **97.5.4.3.4** *P* **71** *L* **5~20** # 178

Bert Bergner TE Connectivity

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

Figure 97-26: The y-axis description in the diagram is "Return Loss" but it should be PSAACRF

SuggestedRemedy

Change the axis description to "PSAACRF (dB)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.6** *P* **73** *L* **12** # 177

Lo, William Marvell Semiconducto

Comment Type **TR** *Comment Status* **D**

Need some descriptive text

SuggestedRemedy

The synchronization state diagram in this section shall be used to synchronize the PHYs prior to 1000BASE-T1 link training.

If Clause 98 Auto-Negotiation is enabled then it shall be used as the mechanism for PHY synchronization and the synchronization state diagram shall remain in the DISABLE state.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Use the follwoign text:

The synchronization state diagram in this section shall be used to synchronize 1000BASE-T1 PHYs prior to 1000BASE-T1 link training.

If Clause 98 Auto-Negotiation function is enabled, then the Auto-Negotiation function shall be used as the mechanism for PHY synchronization and the synchronization state diagram shall remain in the DISABLE state.

Cl **97** *SC* **97.6.2** *P* **74** *L* **31** # 108

Regev, Alon Ixia

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

"Auto-Negotiation DISABLE" is a confusing name for the state as we are in this state when Auto-Negotiation is enabled.

SuggestedRemedy

Rename the state "Auto-Negotiation DISABLE" to "SYNCHRONIZATION DISABLE"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Rename the state "Auto-Negotiation DISABLE" to "SYNC_DISABLE"

Cl **97** *SC* **97.6.2** *P* **74** *L* **31** # 167

Lo, William Marvell Semiconducto

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

Figure 97-27 Label Auto-Negotiation DISABLE can be confusing

SuggestedRemedy

Change Auto-Negotiation DISABLE to DISABLE

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #108.

Cl **97** *SC* **97.6.2** *P* **74** *L* **41** # 133

McClellan, Brett Marvell

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

figure 97-27 title is wrong: "Link Monitoring"

SuggestedRemedy

change figure title to: "PHY Link Synchronization state machine"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.6.2.2.9** *P* **77** *L* **54** # 163

Lo, William Marvell Semiconducto

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

Extra phrase not needed.

SuggestedRemedy

Delete the hanging phrase
The first 10 bytes

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.7** *P* **74** *L* **1** # 171
Lo, William Marvell Semiconducto

Comment Type **TR** *Comment Status* **D**
Lots of missing text and diagrams in OAM.

SuggestedRemedy
See Lo_3bp_01_0215.pdf for all missing text and diagrams and should be consistent with descriptions Lo_3bp_02_0115.pdf
Should be able to remove all Editors Notes in 97.7 after the incorporation of missing text and diagrams

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.
Implement Lo_3bp_01_0215.pdf. Please submit source documents to editor.

Cl **97** *SC* **97.7** *P* **74** *L* **47** # 147
Brown, Thomas Vitesse Semiconducto

Comment Type **ER** *Comment Status* **D**
exchanging PHY link heal the status

SuggestedRemedy
exchanging PHY link health status

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

Cl **97** *SC* **97.7** *P* **75** *L* **1** # 145
Brown, Thomas Vitesse Semiconducto

Comment Type **E** *Comment Status* **D**
This 9-bit is used

SuggestedRemedy
This 9-bit field is used

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

Cl **97** *SC* **97.7.2.6** *P* **80** *L* **1** # 164
Lo, William Marvell Semiconducto

Comment Type **E** *Comment Status* **D**
Table 97-9 in the wrong section

SuggestedRemedy
Move table 97-9 immedaitely after text in section 97.7.2.6

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.
Placement of tables is hard to control in FrameMaker. Will give it a try.

Cl **97** *SC* **97.7.3** *P* **80** *L* **30** # 165
Lo, William Marvell Semiconducto

Comment Type **E** *Comment Status* **D**
Table 97-10 in wrong sub section

SuggestedRemedy
Move table 97-10 immediately after text in section 97.7.3

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.
Placement of tables is hard to control in FrameMaker. Will give it a try.

Cl **97** *SC* **97.7.3.1** *P* **81** *L* **35** # 175
Lo, William Marvell Semiconducto

Comment Type **TR** *Comment Status* **D**
Register 3.TBD0.13 need some additional explanatory text to describe how it clears. (Table 97-11)

SuggestedRemedy
In the description field add the following sentence:
Bit will self clear on read.
In the R/W field change:
from RO to RO, LH

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

In the description field add the following sentence:
Bit shall self clears on read.
In the R/W field change:
from RO to RO, LH

Cl **97** *SC* **97.7.4.1** *P* **84** *L* **36** # 176
Lo, William Marvell Semiconducto

Comment Type **TR** *Comment Status* **D**
mr_tx_received need some additional explanatory text to describe how it clears

SuggestedRemedy
Add following sentence after first paragraph:
This variable will clear on read.

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

This variable shall clear on read.

Cl **97** *SC* **97.7.4.2** *P* **86** *L* **11** # 166
Lo, William Marvell Semiconducto

Comment Type **E** *Comment Status* **D**
Add empty line before heading
Also applies to 97.7.4.3 and 97.7.4.4

SuggestedRemedy
Add empty line before heading

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.
Apply proper style to lines before these headings (this will auto-insert empty lines).

Cl **97** *SC* **97.7.4.3** *P* **86** *L* **27** # 168
Lo, William Marvell Semiconducto

Comment Type **ER** *Comment Status* **D**
CRC16 and CRC16_Check functions refer to the wrong section

SuggestedRemedy
97.6.2.2.10 in both cases should be changed to 97.7.2.2.10

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

Cl **97** *SC* **97.7a** *P* **86** *L* **54** # 172
Lo, William Marvell Semiconducto

Comment Type **TR** *Comment Status* **D**
Management interface section missing text

SuggestedRemedy
See Lo_3bp_02_0215.pdf for text
Should be new section 97.8

Proposed Response *Response Status* **O**

Cl **97** *SC* **97.7b** *P* **86** *L* **54** # 173
Lo, William Marvell Semiconducto

Comment Type **TR** *Comment Status* **D**
Environmental specification in wrong section

SuggestedRemedy
Delete section 97.5.5 and replace with the following
Section 97.7b will be 97.9
97.9 Environmental Specifications
97.9.1 General Safety
97.9.2 Network Safety
97.9.3 Environment

Text in these section still need to be supplied.

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

Put editorial notes in the sections indicating text is requested.

Cl **97** *SC* **97.7c** *P* **86** *L* **54** # 174
Lo, William Marvell Semiconducto

Comment Type **TR** *Comment Status* **X**
Delay Constraints section missing text

SuggestedRemedy
See Lo_3bp_02_0215.pdf for text
Should be new section 97.10

Proposed Response *Response Status* **O**

Cl **97** *SC* **97B.3** *P* **122** *L* **37** # 179

Bert Bergner TE Connectivity

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

The cable bundle shall be placed on dielectric insulation material (eR<1.4) of 50mm height over ground. --> This is not consistent with the height in the figures which show 10mm.

SuggestedRemedy

Change to "... 10mm height over ground."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **98.5.2** *P* **112** *L* **46** # 134

McClellan, Brett Marvell

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

Long timer value for rx_wait_timer can lead to lockup condition. Timer should be larger than 14 us, but short enough to prevent multiple code words to be missed else the devices can get out of sync.

SuggestedRemedy

change "The rx_wait_timer shall expire 100 us to 105 us after being started or restarted." to "The rx_wait_timer shall expire 15 us to 17 us after being started or restarted."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **98.5.5** *P* **114** *L* **4** # 126

McClellan, Brett Marvell

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

All the text in figure 98-11 is underlined.

SuggestedRemedy

remove underline for the text in figure 98-11

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.1.2** *P* **92** *L* **11** # 121

Chen, Steven Broadcom

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

In Figure 98-2, AUTONEG communicates with PMA, instead of PCS. But the texts indicate otherwise.

SuggestedRemedy

Change
"PCS communicates with the AUTONEG sublayer through the PCS service interface messages AN_LINK.indication"

To
"AUTONEG communicates with the PMA sublayer through the PMA service interface messages PMA_LINK.request and PMA_LINK.indication."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.2.1.1.1** *P* **93** *L* **51** # 110

Regev, Alon Ixia

Comment Type **TR** *Comment Status* **D**

the DME page has 158 (not 157) transitions (see page 94 , line 11 where transition 158 is discussed).

SuggestedRemedy

Change "157" to "158"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.2.1.1.1** *P* **94** *L* **40** # 106

Regev, Alon Ixia

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

"Auto Negotiation" should be hyphenated.

And yes - I'm aware I'm the one that introduces this mistake in the first place .

SuggestedRemedy

change "Auto Negotiation" to "Auto-Negotiation"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.2.1.1.1** *P* **94** *L* **8** # 111

Regev, Alon Ixia

Comment Type **TR** *Comment Status* **D**

We no longer have 6 transition positions in the ending machester violation (it was reduced to 3 positions in the draft 1.2), but it looks like both the old sentence and the new sentence are left in the draft"

SuggestedRemedy

Delete the sentence "The final 6 transition positions contain the ending Manchester violation delimiter, which marks the end of the page."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.2.1.1.2** *P* **96** *L* **27** # 112

Cordaro, Jay Broadcom

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

T2 and T3 limits in Table 98-1 is too loose, and do not match to T5 limits.

SuggestedRemedy

Change
"T2 Clock transition to clock transition 58.4 60 61.6 ns"
"T3 Clock transition to data transition (data = 1) 28.4 30 31.6 ns"

to
"T2 Clock transition to clock transition 59.994 60 60.006 ns"
"T3 Clock transition to data transition (data = 1) 29.997 30 30.003 ns"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.2.1.1.2** *P* **96** *L* **29** # 113

Cordaro, Jay Broadcom

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

T4a and T5 limits in Table 98-1 do not reflect electrical timings agreed to in January (see "IEEE 802.3bp - Jan2015 - proposed changes to Figure 98-7.pptx").

SuggestedRemedy

Change T4a from
"T4a +1 to -1 or -1 to +1 transitions in a DME page 80 - 144"
to
"T4a +1 to -1 or -1 to +1 transitions in a DME page 79 - 143"

Change T5 from
"T5 DME page width 4555 4560 4565 ns"
to
"T5 DME page width 4619 4620 4621 ns"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.2.1.2** *P* **97** *L* **28** # 114

Cordaro, Jay Broadcom

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

Auto-Negotiation should support vendor ID and vendor specific messages

SuggestedRemedy

Adopt proposal as shown in presentation "cordaro_3bp_01_0215.pdf"

Proposed Response *Response Status* **O**

Cl **98** *SC* **98.5** *P* **117** *L* **2** # 118

Tu, Mike Broadcom

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

There is no interop between PHY with autoneg enable and PHY in forced mode

SuggestedRemedy

Adopt changes proposed in "tu_3bp_03_0215.pdf".

Proposed Response *Response Status* **O**

Cl **98** *SC* **98.5** *P* **117** *L* **23** # 115

Tu, Mike Broadcom

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

In Figure 98-14, the exit condition from state "AN GOOD CHECK" is incorrect.

SuggestedRemedy

Change the exit condition from state "AN GOOD CHECK"

from
"((link_status_[HCD]=FAIL +
link_status_[HCD]=OK) .
link_fail_inhibit_timer_done) +
incompatible_link = true"

to
"((link_status_[HCD]=FAIL +
link_status_[HCD]=READY) .
link_fail_inhibit_timer_done) +
incompatible_link = true"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.5.3** *P* **113** *L* **27** # 102

Regev, Alon Ixia

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

"not_dONE" should be "not_done";
"dONE" should be "done"

SuggestedRemedy

replace "not_dONE" with "not_done";
replace "dONE" with "done"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.5.5** *P* **114** *L* **4** # 169

Lo, William Marvell Semiconducto

Comment Type **ER** *Comment Status* **D**

Remove underline from figure 98-11

SuggestedRemedy

Remove underline from figure 98-11

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **99** *SC* *P* **1** *L* **17** # 107

Regev, Alon Ixia

Comment Type **ER** *Comment Status* **D**

Cabling name is inconsistent. Many different names for cabling
pg 1. ln. 17: A Single Twisted Pair Copper Cable
pg 1. ln. 27: a single pair of twisted copper cables
pg 20. ln. 21: one pair of balanced copper cabling
pg 63. ln 3: a single pair of balanced copper cabling

I suggest we follow the decisions in 802.3bw as well as some previous comments in 802.3bp and use "single pair of balanced copper cabling" as per the previous comment resolutions.

SuggestedRemedy

Replace "Single Twisted Pair Copper Cable"
with "Single Pair of Balanced Copper Cabling"
in all occurances in this draft (including titles).

Amend the PAR with the new title

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace "Single Twisted Pair Copper Cable"
with "Single Pair of Balanced Copper Cabling"
in all occurances in this draft (including titles).

Changes to PAR should not be done frivolously

Cl **99** *SC* *P* **10** *L* **1** # 101

Regev, Alon Ixia

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

The "Contents" title seems to be repeated (it appears both on page 10 as well as page 11 with no othe text in-between).

SuggestedRemedy

Delete page 10.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **99** *SC* *P* **18** *L* **1** # 104

Regev, Alon Ixia

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

Page 18 & 19 seem to be duplicates of each other with only minor differences.

SuggestedRemedy

Delete Page 18 (as page 19 has the same text)

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This is part of the front matter and outside of control of TF.

Cl **99** *SC* *P* **18** *L* **3** # 103

Regev, Alon Ixia

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

On Page 1 (and other places), this amendment was labeled as Amendment "X". Here (on page 18) it is labeled as Amendment "3". I don't think we know yet which amendment number this amendment will get.

SuggestedRemedy

Replace "Ammendment 3" with "Amendment X"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change will be implemented. Likely, by the time we do into WG ballot, we will be an amendment to 802.3-2015 version and not -2012.