Cl **00** *SC* **0** *P* *L* # 144
Chalupsky, David Intel Corp.

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

No Clause 81.

SuggestedRemedy

Add Clause 81. Add 40GBASE-T to diagram in 81.1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* *L* # 143
Chalupsky, David Intel Corp.

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

There is no Clause 80 in this draft. Clause 80 should contain references to 40GBASE-T

SuggestedRemedy

Add Clause 80 with appropriate content for 40GBASE-T

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **0** *L* **0** # 159
McClellan, Brett Marvell

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

A couple of comments approved in draft 1.0 don't appear to have been implemented and I did not see an editor's comment as a placeholder. Comment #61 did not get implemented
Add edit to normative Annex 28B, clause 28B.3 to insert 40GBASE-T above 10GBASE-T on the priority resolution list and renumber list accordingly

comment #63 was not implemented
Insert as section 28D.8, with same text as 28D.6 and change references to reflect 40GBASE-T and Clause 98, including variable 40GigT

comment 80 was not implemented
Add Link Interruption Ordered_set to XLGMII in Clause 81 similar to 46.3.4 and change reference

SuggestedRemedy

editor to review approved comments and implement in next draft

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. See also comment 161

Cl **00** *SC* **0** *P* **0** *L* **0** # 162
Zimmerman, George CME Consulting Inc

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

Roll in Clause renumbering, changing Clause 98 to Clause 105 as per chief editor

SuggestedRemedy

Editor to change all references of clause 98 to clause 105

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **28B** *SC* **0** *P* **24** *L* **1** # 161
Zimmerman, George CME Consulting Inc

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

Changes to include 40GBASE-T in clause 28 Annexes B,C,and D and reflect name change to Technology message code are not made as agreed on Draft 1.0

SuggestedRemedy

Implement comments 61, 62, and 63 making changes to clauses 28B, 28C and 28D from draft 1.0 comment resolution

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement with comment 159

Cl **55** *SC* **55.6.2** *P* **51** *L* **13** # 158
McClellan, Brett Marvell

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

typo, xBASE-T should be xGBASE-T

SuggestedRemedy

change xBASE-T to xGBASE-T

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **3.4** *P* **66** *L* **10** # 156

Feyh, German — Broadcom

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

Periodically resetting the training sequence is not used by current PHYs. Exiting the resetting of the resetting of the training sequence earlier in the start-up sequences makes the mode more usable.

SuggestedRemedy

IN PMA_PBO_Exch, when the receiver detects a valid requested transmitter PBO setting (Oct7 Valid<7>), then the receiver stops reinitializing the values of its scrambler state.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Presenter to provide specific text change for the draft.

Cl **98** *SC* **98.1.5** *P* **65** *L* **3** # 145

Chalupsky, David — Intel Corp.

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

XLGMII is a logical interface. there is no physical / electrical spec.

SuggestedRemedy

replace 98.1.5 with:
All 40GBASE-T PHY implementations are compatible at the MDI and at a logical XLGMII, if implemented. Implementation of the XLGMII is optional. Designers are free to implement circuitry within the PCS and PMA in an application-dependent manner provided that the MDI and XLGMII
(if the XLGMII is implemented) specifications are met. System operation from the perspective of signals at
the MDI and management objects are identical whether the XLGMII is implemented or not.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.12.2** *P* **173** *L* **38** # 170

Zimmerman, George — CME Consulting Inc

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

Change support of loop timing to Mandatory.

SuggestedRemedy

Change support of loop timing to Mandatory.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.12.3** *P* **174** *L* **22** # 171

Zimmerman, George — CME Consulting Inc

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

CRC8 functionality has been deleted and replaced by RS-FEC coding.

SuggestedRemedy

Delete PIC PCT10 for CRC8, and insert PICS for RS-FEC as appropriate

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.2** *P* **65** *L* **28** # 146

Chalupsky, David — Intel Corp.

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

incorrect reference for XLGMII

SuggestedRemedy

replace "Clause 46" with "Clause 81"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.3.2.2.14** *P* *L* # 147

Chalupsky, David — Intel Corp.

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

legacy reference to XGSX

SuggestedRemedy

Either
delete "the XGSX and"
or
replace "XGSX" with "XLAUI"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Delete "XGXS and", so that the sentence now reads, "The /E/ allows physical sublayers such the PCS to propagate received errors."

Cl **98** *SC* **98.3.2.2.18** *P* **87** *L* **23** # 150

Chalupsky, David Intel Corp.

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

Figure 98-11, PCS Scrambler, is misplaced. the figure currently sits in the RS-FEC sublause, 98.3.2.2.20.

SuggestedRemedy

Move figure 98-11 from 98.3.2.2.20 to 98.3.2.2.18.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.3.2.2.20** *P* **87** *L* **42** # 157

Langner, Paul Aquantia

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

Current RS-FEC implmentation has correction capability of 2x 11-bit symbols. A more appropriate solution would be to correct 3x 8-bit symbols.

SuggestedRemedy

A presentation will be provided for the January meeting

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. See presentation for detail.

Cl **98** *SC* **98.3.2.2.20** *P* **87** *L* **43** # 148

Chalupsky, David Intel Corp.

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

typo in the sentence "The encoder process k message symbols to generate 2t parity symbols, which are then appended to the message to produce a codeword of n=k+2t symbols. "

SuggestedRemedy

replace "process" with "processes"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.3.2.2.20** *P* **87** *L* **45** # 149

Chalupsky, David Intel Corp.

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

RS-FEC description could be more informative by indicating what the (n,k) values are.

SuggestedRemedy

Replace
"For the purposes of this clause, the particular Reed-Solomon code is denoted RS-FEC(n,k)."
with
"For the purposes of this clause, the particular Reed-Solomon code in the form RS-FEC(n,k)is denoted RS-FEC(140,136)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.3.2.2.6** *P* **82** *L* **1** # 169

Zimmerman, George CME Consulting Inc

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

Figure 98-9 shows control code alignments for a 32-bit wide MII, such as XGMII. 40GBASE-T will use the XLGMII which is 64-bits wide, eliminating many of these possibilities, and is shown in Figure 82-5. The invalid block formats (with a start (S) or ordered set (O) character at position 4 are not allowed in the 64 bit format and should be eliminated.

SuggestedRemedy

Align Figure 98-9 with 64 bit format as in Figure 82-5.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.4.6.4** *P* **137** *L* **31** # 152

Cibula, Peter Intel Corporation

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

Subclause 98.4.6.4 EEE Refresh monitor state diagram is missing the associated figure. The corresponding state diagram, Figure 98-33 - EEE Refresh monitor state diagram, is incorrectly located in the middle of Subclause 98.5.1 Isolation Requirement (Page 137, Line 44).

SuggestedRemedy

Appears to be a formatting issue. Move Figure 98-33 to Subclause 98.4.6.4.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.4.6.5** *P* **138** *L* **36** # 151

Cibula, Peter — Intel Corporation

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

Subclause 98.4.6.5 Fast retrain state diagram is missing the associated figure. The corresponding state diagram, Figure 98-34 - Fast retrain control state diagram, is incorrectly located in the middle of Subclause 98.5.2 Test Modes (Page 138, Line 34).

SuggestedRemedy

Appears to be a formatting issue. Move Figure 98-34 to Subclause 98.4.6.5.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.5.2** *P* **139** *L* **42** # 153

Cibula, Peter — Intel Corporation

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

Table 98–13 — MDIO management register settings for test modes identifies Test mode 4 as being used for a transmit distortion test. The subsequent description of Test mode 4 (Page 140, Line 13) identifies Test mode 4 as being used for transmitter linearity testing. The test mode description in the table should be aligned with the description in the body of the subclause. (Note: The text appears to be directly carried over from Clause 40, Table 40-7.)

SuggestedRemedy

Change the text in Table 98-13 for Test mode 4 from "Test mode 4 - Transmit distortion test." to "Test mode 4 - Transmit linearity test."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change references to "transmitter linearity" to read "transmitter nonlinear distortion" - it is the more general term for what is measured. Request commenter to submit a maintenace request on Clause 55 which follows the same nomenclature.

Cl **98** *SC* **98.5.4.3** *P* **145** *L* **10** # 160

Zimmerman, George — CME Consulting Inc

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

Common mode noise rejection test has no requirements, and is purely informative.

SuggestedRemedy

Move clause 98.5.4.3 and any extensions which are not normative requirements to an informative annex.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Review with ad hoc's recommendations

Cl **98** *SC* **98.5.4.5.1** *P* **146** *L* **20** # 163

Zimmerman, George — CME Consulting Inc

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

IEEE style guidelines allow no more than 5 levels of numbering, organization of this subclause goes to 6 levels

SuggestedRemedy

Reorganize parameters of short reach test channel to conform to IEEE 5-level numbering. Recommend separating the direct attach channel parameters to a new normative annex and referencing it on line 23.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Reorganize this subclause to conform to IEEE 5-level numbering. Rather than duplicate, provide references for definitional subclauses already specified in 98.7 such as 98.7.2.4.3 Multiple disturber power sum near-end crosstalk i.e., replace [98.5.4.5.1.7 Multiple disturber power sum near-end crosstalk (PSNEXT) loss] with reference to [98.7.2.4.3].

Cl **98** *SC* **98.5.4.5.1** *P* **146** *L* **23** # 168

Zimmerman, George — CME Consulting Inc

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

Remove TBD next to 5 meters. TIA direct attach channel is currently 5 meters in Cat 8 draft out for ballot.

SuggestedRemedy

Remove (TBD) from 5 meter length.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.5.4.5.1.10** *P* **150** *L* **47** # 131

Shariff, Masood — CommScope

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

This section is theoretical and should come before the practical specifications in 98.5.4.5.1.9

SuggestedRemedy

Move entire section before section 98.5.4.5.1.9. Also make it clear that PS ACRF (cabling standards terminology) is the same as MDACRF (IEEE termonology)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See resolution to comment #163.

Cl **98** *SC* **98.5.4.5.1.2** *P* **146** *L* **36** # 134

Shariff, Masood — CommScope

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

Equation 98-13 is not correct

SuggestedRemedy

Change the x after B to a +
ILD is an additional term following the contribution of IL by two connectors

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.5.4.5.1.2** *P* **146** *L* **47** # 164

Zimmerman, George — CME Consulting Inc

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

Equation 98-4 equation and frequency ranges run together on second line, making it difficult to read

SuggestedRemedy

Increase spacing between equation and frequency range for Equation 98-14.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.5.4.5.1.3** *P* **147** *L* **9** # 165

Zimmerman, George — CME Consulting Inc

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

Equation 98-15 log10 should have 10 subscripted. It is not.
Also, equation 98-25 and 98-26 have this problem

SuggestedRemedy

Subscript the 10 in the log10 on first 2 lines of Equation 98-15, and in equations 98-25 and 98-26.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.5.4.5.1.4** *P* **147** *L* **21** # 130

Shariff, Masood — CommScope

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

Typo

SuggestedRemedy

Remove \ at the beginning of the section

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.6.2** *P* **156** *L* **35** # 166

Zimmerman, George — CME Consulting Inc

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

Implement editors note and remove note

SuggestedRemedy

Implement editors note and remove note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.7.2.4.4** *P* **163** *L* **16** # 135

Shariff, Masood — CommScope

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

Equatin 98-43 is about FEXT not MDNEXT

SuggestedRemedy

Change MDNEXT to FEXT

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
In 98-43 change MDNEXT loss to ACRF

Cl **98** *SC* **98.7.2.4.5** *P* **164** *L* **29** # 133

Shariff, Masood — CommScope

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

Missing equation for PSACRF including length dependency

SuggestedRemedy

Add PSACRF equation similar to equation 98-44 anchored at 64.8 instead of 67.8

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Page 163 delete informative text from line 28-40.

Cl **98** *SC* **98.7.2.4.5** *P* **164** *L* **3** # 132

Shariff, Masood — CommScope

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

Equation 98-45 is about MDFEXT, not MDACRF

SuggestedRemedy

Change MDACRF to MDFEXT

Proposed Response *Response Status* **W**

PROPOSED REJECT.
To ensure the total FEXT coupled
into a duplex channel is limited, multiple disturber ACRF is specified as the power sum of the individual ACRF disturbers.
98-45 corresponds to Category 8 Cabling D2.0.

Cl **98** *SC* **98.8.2.2** *P* **168** *L* **44** # 155

Cibula, Peter — Intel Corporation

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

Subclause 98.8.2.2 describes two approaches to measure MDI impedance balance, one using a time-domain technique described on Page 169, Line 8 through Line 38, and a second using a frequency-domain technique described in Page 169, Line 39 through Line 49.
The time-domain technique is implied as a primary approach ("... impedance balance is measured..." on Page 169, Line 28) and the frequency-domain technique is implied as an alternative method ("... may also be measured..." on Page 169, Line 39).

SuggestedRemedy

For discussion. It is believed that the frequency-domain approach may be more reproducible than the time-domain approach. It is suggested that the Task Force review both measurement approaches and the associated test and calibration circuits for each, and (if supported by such a review) update the text to identify the frequency-domain technique as a primary approach to making the measurement - basically flipping the order of the two approaches.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. - Editor's inclination is to implement the proposed change as a PROPOSED ACCEPT, but the commenter asked for committee discussion so it is "in principle"

Cl **98** *SC* **98.8.2.2** *P* **169** *L* **7** # 154

Cibula, Peter — Intel Corporation

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

Subclause 98.8.2.2 states that the impedance balance of the MDI shall meet the relationship defined in Equation (98-53) when the transmitter is transmitting random or pseudo-random data, and that Test-mode 4 may be used to generate an appropriate transmitter output. However, Subclause 98.5.2, Table 98-14 defines Test mode 4 as a set of two-tone frequency pairs used for transmitter linearity testing. A more appropriate test mode for Subclause 98.8.2.2 would be Test Mode 5 (Normal operation with no power backoff.).

SuggestedRemedy

For discussion. While Test mode 5 seems to be an appropriate way for the 40GBASE-T transmitter to emulate random or pseudo-random data, it is possible that other defined test modes could be used for the impedance balance measurement. If Test mode 5 is in fact appropriate, change the text in Subclause 98.8.2.2, Page 169, Line 7 from "Test mode 4 may be used to generate an appropriate transmitter output." to "Test mode 5 may be used to generate an appropriate transmitter output."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. See editors response on comment 155.

Cl **98** *SC* **98.8.2.3** *P* **170** *L* **46** # 167

Zimmerman, George — CME Consulting Inc

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

Editors note has been considered in last comment cycle - remove

SuggestedRemedy

Remove editors note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **99** *SC* *P* **2** *L* **6** # 142

Chalupsky, David — Intel Corp.

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

leftover 10G reference

SuggestedRemedy

replace "XAUI" with "XLAUI" replace "XGMII" with "XLGMII"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.