Cl **104** *SC* **104.4.1a** *P* **96** *L* **30** # r03-1

Anslow, Peter Ciena

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

In the editing instruction: "Insert new subclause 104.4.1a including Table 104-4b after 104.4.1 as follows:"
"Table 104-4b" should be "Table 104-1b"

SuggestedRemedy

Change "Table 104-4b" to "Table 104-1b"

Proposed Response *Response Status* **O**

Cl **104** *SC* **104.9.4.2** *P* **117** *L* **5** # r03-2

Anslow, Peter Ciena

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

In item PSEa "See 104-1b" should be "See Table 104-1b"

SuggestedRemedy

Change the cross-reference format to "TableNumber"

Proposed Response *Response Status* **O**

Cl **104** *SC* **104.9.4.2** *P* **117** *L* **8** # r03-3

Anslow, Peter Ciena

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

In item PSE37 the entry under Support is "SCCP:O CRM:M"
This means that if SCCP is true the function is optional, so "No [ ]" should be in the Support cell.

SuggestedRemedy

Add "No [ ]" to the Support cell.

Proposed Response *Response Status* **O**

Cl **146** *SC* **146.8.1** *P* **175** *L* **1** # r03-4

Anslow, Peter Ciena

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

"Connectors meeting the mechanical requirements of IEC 63171-1 or IEC 63171-6 may be used..." implies that IEC 63171-1 or IEC 63171-6 will be found as references. However, these have been added to Annex A as bibliography entries. In 802.3 bibliography references are distinguished by having [Bxx] after them.
Same issue in 147.9.1

SuggestedRemedy

Change: "IEC 63171-1 or IEC 63171-6 " to: "IEC 63171-1 [B39a] or IEC 63171-6 [B39b]"
Make the same change in 147.9.1

Proposed Response *Response Status* **O**

Cl **A** *SC* **A** *P* **263** *L* **17** # r03-5

Anslow, Peter Ciena

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

Reference and Bibliography entries to IEC documents in 802.3 do not include the edition number.
Also, comma missing in "[B39b] IEC 63171-6 Ed.1:20xx Connectors ..."

SuggestedRemedy

Change "[B39a] IEC 63171-1 Ed.1:20xx," to "[B39a] IEC 63171-1:20xx,"
Change "[B39b] IEC 63171-6 Ed.1:20xx" to "[B39b] IEC 63171-6:20xx,"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **12** *L* **52** # r03-6

Zimmerman, George ADI, APL Group, Aquantia, BMW, Cisco, Commscop

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

"adds 50 Gb/s 200 Gb/s, and 400 Gb/s" is missing a comma between 50 Gb/s and 200 Gb/s

SuggestedRemedy

Change "50 Gb/s 200 Gb/s" to "50 Gb/s, 200 Gb/s"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* *L* # r03-7

Berger, Catherine

Comment Type **G** *Comment Status* **X** *EZ*

This draft meets all editorial requirements.

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **98** *SC* **98.2.1.1.2** *P* **79** *L* **16** # r03-8

Graber, Steffen Pepperl+Fuchs AG

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

LSM Autoneg in the Start Delimiter has more transitions than HSM Autoneg. Thus Column T4a in Table 98-1 and text in IEEE 802.3-2018, Section 7, Page 208 (after the figure) needs to be corrected.

SuggestedRemedy

On P79, L16, Table 98-1, item T4a, low_speed, change the "Min" column value from 79 to 84 and the "Max" column value from 143 to 148.

Bring subclause 98.2.1.1 into the draft with editing instruction: "Change second paragraph of 98.2.1.1.1 as follows:

The first 26 transition positions contain the Start Delimiter, which marks the beginning of the page. The Start Delimiter contains a transition from quiet to active at position 1. <\UL>For HSM Auto-Negotiation, </UL>this is followed by transitions at positions 2, 3, 5, 7, 8, 12, 13, 14, 15, 19, 21, 24, 25, 26 and no transitions at the remaining positions.<\UL> For LSM Auto-Negotiation this is followed by transitions at positions 2, 3, 4, 5, 6, 7, 8, 9, 11, 13, 15, 16, 18, 19, 20, 22, 23, 24, 26 and no transitions at the remaining positions.</UL>"

Proposed Response *Response Status* **O**

Cl **A** *SC* **A** *P* **263** *L* **1** # r03-9

Graber, Steffen Pepperl+Fuchs AG

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

Page numbering is wrong in Annexes A, 98B, 146A, and 146B.

SuggestedRemedy

Correct page numbering

Proposed Response *Response Status* **O**

Cl **146** *SC* **146.7.1** *P* **169** *L* **42** # r03-10

Hess, Dave

Comment Type **T** *Comment Status* **X** *Link Segment*

To take into consideration, per the editor's note in cg d2.0 clause 146.7.1, that ISO/IEC JTC1 SC25/WG3 has approved ISO/IEC TR 11801-9906 for publication, in support of 10BASE-T1L over application specific balanced single-pair cabling.
To make an informative reference to ISO/IEC TR 11801-9906, at the location of the editor's note.
To inform the user that TR 11801-9906 provides guidance on the selection of cabling in support of 10GBASE-T1L, such as choosing cable size per the desired reach.

SuggestedRemedy

Add a sentence at the end of the paragraph;
to include the proposed text:
"It is recommended that the informative cabling specifications in ISO/IEC TR 11801-9906 be considered for guidance on the selection of cabling in support of 10BASE-T1L, such as choosing cable size per the desired reach."

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.7** *P* **223** *L* **8** # r03-11

Hess, Dave

Comment Type **T** *Comment Status* **X** *Link Segment*

To take into consideration, per the editor's note in cg d2.0 clause 146.7.1, that ISO/IEC JTC1 SC25/WG3 has approved ISO/IEC TR 11801-9906 for publication, in support of 10BASE-T1S over application specific balanced single-pair cabling.
To make an informative reference to ISO/IEC TR 11801-9906, at the location of the editor's note.
To inform the user that TR 11801-9906 provides guidance on the selection of cabling in support of 10GBASE-T1S, such as choosing cable size per the desired reach.

SuggestedRemedy

Add a sentence at the end of the paragraph;
to include the proposed text:
"It is recommended that the informative cabling specifications in ISO/IEC TR 11801-9906 be considered for guidance on the selection of cabling in support of 10BASE-T1S, such as choosing cable size per the desired reach."

Proposed Response *Response Status* **O**

Cl **A** *SC* **A** *P* **195** *L* **1** # r03-12

Hess, Dave

Comment Type **T** *Comment Status* **X** *Link Segment*

Add a Bibliography entry for ISO/IEC TR 11801-9906

SuggestedRemedy

Add the Bibliography entry:
ISO/IEC TR 11801-9906 Ed.1:20xx, Information technology - Generic cabling for customer premises - Part 9906 - Balanced 1-pair cabling channels up to 600 MHz for single pair Ethernet (SPE)

Proposed Response *Response Status* **O**

Cl **146** *SC* **146.8.1** *P* **174** *L* **45** # r03-13

Horrmeyer, Bernd

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

IEEE 802.3 standards exist with and without definitions of connectors. Therefore, there is obviously no technical necessity to define certain connectors.
The focus here is on connecting IoT devices which usually have no connection with the generic cabling but follow their own installation rules depending on the area of application and expectations of the user groups. Within these application areas, manufacturer-independent interoperability and thus the basis for market success is always given. Therefore, the example with the RJ45 for generic cabling in office buildings is not suitable for advertising a uniform connector.
It must also be questioned to what extent the plugs in question can be regarded as uniform MDI plugs at all. There is no interoperability between the connectors of standards 63171-1 and 63171-6. The goal of a uniform MDI connector is therefore missed anyway. In addition, 63171-6 describes several connectors that are incompatible with each other. Here the goal of a uniform MDI connector is violated within just one standard.
The question also arises as to whether the connectors are technically suitable at all. Standards 63171-1 and 63171-6 only require a dielectric strength of 1000V, although IEEE 802.3 requires a dielectric strength of 2250V.
The selection of these connectors by the cabling committees TIA and ISO/IEC took place at an early stage when these aspects were only insufficiently known. Therefore, their recommendations can no longer be used as an argument for selecting an MDI connector. Moreover, these committees represent only the world of generic cabling and not the applications in which IEEE 802.3cg is likely to become most popular.
In summary, this means that the referencing of certain connectors is unnecessary, the proposed connectors are currently technically unsuitable and do not achieve interoperability, and the market does not benefit from referencing these connectors.

SuggestedRemedy

Complete IEEE 802.3cg without referencing certain connectors

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.9.1** *P* **225** *L* **43** # r03-14

Horrmeyer, Bernd

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

IEEE 802.3 standards exist with and without definitions of connectors. Therefore, there is obviously no technical necessity to define certain connectors.
The focus here is on connecting IoT devices which usually have no connection with the generic cabling but follow their own installation rules depending on the area of application and expectations of the user groups. Within these application areas, manufacturer-independent interoperability and thus the basis for market success is always given. Therefore, the example with the RJ45 for generic cabling in office buildings is not suitable for advertising a uniform connector.
It must also be questioned to what extent the plugs in question can be regarded as uniform MDI plugs at all. There is no interoperability between the connectors of standards 63171-1 and 63171-6. The goal of a uniform MDI connector is therefore missed anyway. In addition, 63171-6 describes several connectors that are incompatible with each other. Here the goal of a uniform MDI connector is violated within just one standard.
The question also arises as to whether the connectors are technically suitable at all. Standards 63171-1 and 63171-6 only require a dielectric strength of 1000V, although IEEE 802.3 requires a dielectric strength of 2250V.
The selection of these connectors by the cabling committees TIA and ISO/IEC took place at an early stage when these aspects were only insufficiently known. Therefore, their recommendations can no longer be used as an argument for selecting an MDI connector. Moreover, these committees represent only the world of generic cabling and not the applications in which IEEE 802.3cg is likely to become most popular.
In summary, this means that the referencing of certain connectors is unnecessary, the proposed connectors are currently technically unsuitable and do not achieve interoperability, and the market does not benefit from referencing these connectors.

SuggestedRemedy

Complete IEEE 802.3cg without referencing certain connectors

Proposed Response *Response Status* **O**

Cl **146** *SC* **146.8** *P* **175** *L* **1** # r03-15

Lewis, Jon Dell EMC

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

Changes from D3.2 to D3.3 included connector information that is not a requirement and is thus a type of marketing information. As I believe that a defined MDI is in the best interest of the standard I believe that changes are required to both Clause 146 and 147 to create a requirement for the MDI with a single connector per ISO/IEC and TIA recommendations. IEEE 802.3 should be following the recommendations of the connector standards organization which have both identified the same recommendation: See http://www.ieee802.org/3/minutes/sep18/incoming/SC25_WG3_to_IEEE_802d3_1_pair_Aug_2018.pdf and http://www.ieee802.org/3/minutes/nov18/incoming/TR42-2018-10-152a_to_IEEE_802d3.pdf for the recommendations sent to IEEE 802.3 from both organizations.

SuggestedRemedy

Change Clause 147 to specify IEC 63171-1 CD for M1I1C1E1 environments (e.g. commercial enterprise buildings) and IEC 63171-6 (formally IEC 61076-3-125) for M2I2C2E2/M3I3C3E3 and other non M1I1C1E1 environments (e.g. industrial) using the following modifications to the draft.
Clause 146 Changes:
Page 175/Line1: Change:
"Connectors meeting the mechanical requirements of IEC 63171-1 or IEC 63171-6 may be used as the mechanical interface to the balanced cabling. The plug connector is used on the balanced cabling and the MDI jack connector on the PHY. The IEC 63171-1 plug and jack are depicted (for informational use only) in Figure 146-29 and Figure 146-30 respectively, and the mating interface is depicted in Figure 146-31. The IEC 63171-6 plug and jack are depicted (for informational use only) in Figure 146-32 and Figure 146- 33 respectively, and the mating interface is depicted in Figure 146-34. These connectors should support link segment DCR characteristics for 1.02 mm (18 AWG) to 0.40 mm (26 AWG) in Table 146B-1."
To:
"Connectors meeting the mechanical requirements of IEC 63171-6 shall be used as the mechanical interface to the balanced cabling. The plug connector is used on the balanced cabling and the MDI jack connector on the PHY. The IEC 63171-6 plug and jack are depicted (for informational use only) in Figure 146-29 and Figure 146- 30 respectively, and the mating interface is depicted in Figure 146-31. This connector should support link segment DCR characteristics for 1.02 mm (18 AWG) to 0.40 mm (26 AWG) in Table 146B-1."
Remove Figures 146-29, 146-30, and 146-31. Renumber subsequent figures accordingly.
Clause 147 Changes:
Page 225/Line 53: Change:
"Connectors meeting the mechanical requirements of IEC 63171-1 or IEC 63171-6 may be used as the mechanical interface to the balanced cabling. The plug connector is used on the balanced cabling and the MDI jack connector on the PHY. The IEC 63171-1 plug and jack are depicted (for informational use only) in Figure 147-21 and Figure 147-22 respectively, and the mating interface is depicted in Figure 147-23. The IEC 63171-6 plug and jack are depicted (for informational use only) in Figure 147-24 and Figure 147-25 respectively, and the mating interface is depicted in Figure 147-26. These connectors should support link segment DCR characteristics for 1.02 mm (18 AWG) to 0.40 mm (26 AWG) in Table 146B-1."
To:
"Connectors meeting the mechanical requirements of IEC 63171-1 shall be used as the mechanical interface to the balanced cabling. The plug connector is used on the balanced cabling and the MDI jack connector on the PHY. The IEC 63171-1 plug and jack are depicted (for informational use only) in Figure 147-21 and Figure 147-22 respectively, and the mating interface is depicted in Figure 147-23. This connector should support link segment DCR characteristics for 1.02 mm (18 AWG) to 0.40 mm (26 AWG) in Table 146B-1."
Remove Figures 147-24, 147-25, and 147-26. Renumber subsequent figures accordingly

Proposed Response *Response Status* **O**

Cl **148** *SC* **148.4.5.4** *P* **249** *L* **29** # r03-16

Beruto, Piergiorgio Canova Tech S.r.l.

Comment Type **T** *Comment Status* **X** *State diagrams*

The to_timer tolerance is too permissive. If two stations have a to_timer difference of +/- 1/4 bit time, and the number of nodes is high enough, the transmit opportunity skew could lead to misaligned curID values, degrading the PLCA performance. Nevertheless, reasonable implementations would likely derive the to_timer from the MII TX clock, which precision is 100 ppm. Therefore decreasing the tolerance does not result in any additional complexity.

SuggestedRemedy

Change timer tolerance from "+/- 1/4 bit time" to "100 ppm"

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.4.3** *P* **217** *L* **1** # r03-17

Beruto, Piergiorgio Canova Tech S.r.l.

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

The note is not consistent with the PCS Receive state diagram WRT the required locking time. The maximum number of bit that the PHY is allowed to miss at the beginning of a packet is 8, not 12. Besides, the "should" expression is not appropriate to indicate unavoidable situations. If you don't achieve synchronization within the specified time, the system will not work. The use of "Must" is more appropriate. See IEEE Style guidelines Clause 10.2.2 "Must is only used to describe unavoidable situations"

SuggestedRemedy

[1] Change " the PMA Receive function should achieve proper synchronization" to "the PMA Receive function must achieve proper synchronization"
[2] Change "1.2 us" to "800 ns"

Proposed Response *Response Status* **O**

Cl **148** *SC* **148.4.6.7** *P* **257** *L* **13** # r03-18

Beruto, Piergiorgio Canova Tech S.r.l.

Comment Type **E** *Comment Status* **X** *State diagrams*

The "start pending_timer" statement is executed forever, resetting the timer, because of the recirculating "ELSE" arc. This is obviously not the intended behavior as it would result into an infinite loop. The intended behavior is that the timer is started once when entering the DELAY_PENDING state. In fact, the expiration of such timer is the only way out DELAY_PENDING.
Moving the "start pending_timer" statement to COLLIDE solves the problem because the timer is restarted by the recirculating arc of the COLLIDE state until it's the time to enter DELAY_PENDING. See also http://www.ieee802.org/3/cg/email/msg01056.html

The "start commit timer" statement in the WAIT_MAC state is affected by the very same problem and can be fixed likewise.

SuggestedRemedy

[1] Move the "start pending_timer" statement from the DELAY_PENDING state to the COLLIDE state

[2] Move the "start commit_timer" statement from the WAIT_MAC state to the PENDING state

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.11** *P* **230** *L* **48** # r03-19

Beruto, Piergiorgio Canova Tech S.r.l.

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

The "MDI input to RX_DV/RX_ER de-asserted" delay constraint is redundant as the assert delay (specified on the line above) implies a fixed de-assert time because of how the PCS Receive State Diagram works when receiving a packet. On the other hand, the RX_ER assertion delay needs to be different from the RX_DV time, again because of how the PCS Receive State diagram deals with COMMIT and BEACON indications.

SuggestedRemedy

In Table 147-6 do the following:

[1] Change "MDI input to RX_DV/RX_ER asserted" to "MDI input to RX_DV asserted" in the "Event" column.

[2] Change "Rising edge of RX_DV/RX_ER" to "Rising edge of RX_DV" on the same row as [1].

[3] Change the last row "MDI input to RX_DV/RX_ER deasserted" to
MDI input to RX_ER asserted | 1.6 | 4 | us | Last DME encoded zero clock trnasition at the MDI | Rising edge of TX_ER

Proposed Response *Response Status* **O**

Cl **148** *SC* **148.4.6.2** *P* **253** *L* **42** # r03-20

Beruto, Piergiorgio Canova Tech S.r.l.

Comment Type **T** *Comment Status* **X** *State diagrams*

According to the "tx_cmd_sync" variable definition, its value is updated on the falling edge of MII TX_CLK. This variable drives the MII signals in figure 148-4. According to Clause 22 the MII clock has setup/hold requirements defined which because of this may be violated (depending on the implementation).

SuggestedRemedy

[1] Change the definition of tx_cmd_sync variable from "The value of the tx_cmd variable sampled on the falling edge of the MII TX_CLK" to "The value of the tx_cmd variable sampled on the rising edge of the MII TX_CLK"

[2] In 148.4.5.3 replace existing text with "
PMCD
Prescient mii_clock_done function. This function becomes done exactly 1 +/- 1/2 bit times earlier than mii_clock_done."

[3] In figure 148-3 in the transition from RESYNC to SEND_BEACON change "MCD" to "PMCD"

Proposed Response *Response Status* **O**

Cl **148** *SC* **148.4.5.6** *P* **251** *L* **35** # r03-21

Beruto, Piergiorgio Canova Tech S.r.l.

Comment Type **T** *Comment Status* **X** *State diagrams*

In figure 148-3 in the TRANSMIT state, setting the "committed" variable to FALSE unconditionally may prevent the PLCA Data State Diagram from bursting.

SuggestedRemedy

In Figure 148-3, in the TRANSMIT state, change "committed <= FALSE" to "
IF bc >= max_bc" THEN
committed <= FALSE
END"

Proposed Response *Response Status* **O**

Cl **148** *SC* **148.4.6.7** *P* **256** *L* **19** # r03-22

Beruto, Piergiorgio Canova Tech S.r.l.

Comment Type **T** *Comment Status* **X** *State diagrams*

According to Clause 147 PCS Receive State Diagram the COMMIT request is looped back into a COMMIT indication above the MII. If the implementation does not handle this correctly, the burst mode may not work (always trigger a collision). An additional state is required to clarify the behavior of the state diagram when bursting.

SuggestedRemedy

In Figure 148-4 do the following:
[1] Add a state WAIT_IDLE which content is the same as IDLE.
[2] Add a transition from WAIT_IDLE to IDLE on "MCD * !CRS"
[3] Have the "C" connector pointing towards WAIT_IDLE instead of IDLE.
[4] Add a transition from WAIT_IDLE to TRANSMIT on "MCD * CRS * plca_txen"
[5] Add a recirculating arc on the WAIT_IDLE state with an "ELSE" condition

Proposed Response *Response Status* **O**

Cl **148** *SC* **148.4.5.6** *P* **250** *L* **1** # r03-23

Beruto, Piergiorgio Canova Tech S.r.l.

Comment Type **T** *Comment Status* **X** *State diagrams*

After the latest clarification changes in the previous recirculation, some fixes were left over. The new proposed changes fix three issues simultaneously:
[1] The node with local_nodeID = 0 may not be able to send a BEACON in the unlikely situation that non-PLCA enabled nodes keep sending packets at a rate higher than the recv_beacon_timer expiration. In such case the PLCA Control State diagram would be stuck in the recover state.
[2] The Control state diagram may loop from EARLY_RECEIVE and RESYNC state because of CRS being continuously asserted. This may cause a false detection of the BEACON if the recv_timer elapses when CRS=TRUE at the end of a packet where the length of the CRS is compatible with the length of a BEACON.
[3] The BEACON may not be sent when PLCA is first enabled due to the Data state diagram being in normal state with plca_status = FAIL, preventing this one to become OK.

The proposed changes also get rid of the recv_timer and the recv_beacon_timer description achieving the very same functionality in a much simpler way, for the reader's benefit.

SuggestedRemedy

Perform the following text changes:

[1] p245, L51 change "waits for all other nodes to be silent for at least recv_beacon_timer" to "waits one cycle of transmit opportunities"

[2] p246, L35 change "switch to RECOVER state if recv_timer elapses and local_nodeID = 0. In RECOVER state, since the curID variable might be out of synchronization, this node waits for all other nodes to be silent for at least recv_beacon_timer before sending a new BEACON" to "
switch to RECOVER state if local_nodeID is 0 and CRS is de-asserted but no packet is being received. In RECOVER state, since the curID variable might be out of synchronization, this node waits for the end of the current cycle of transmit opportunities before sending a new BEACON"

[3] p246, L31 change "switch to RESYNC state also if recv_timer elapses" to "switch to RESYNC state if CRS is not followed by the reception of a packet"

[4] p244, L20 remove the phrase beginning with "In any case" and ending with "possibility."

In Figure 148-4 do the following:
[1] In the transition from HOLD to 'A' remove "recv_timer_done +" from the condition.

[2] In the transition from HOLD to 'B' remove "recv_timer_not_done *" from the condition

[3] In the condition of the recirculating arc on HOLD state, remove "recv_timer_not_done *"

In Figure 148-3 do the following:

[1] In the RECOVER state, remove the recirculating arc along with its condition.

[2] Add an unconditional jump from the RECOVER state to the 'A' connector (WAIT_TO).

[3] Remove the transition between the RECOVER state to the SEND_BEACON state.

[4] from the RECOVER state box, remove "start recv_beacon_timer"

[5] In the transition between RESYNC and SEND_BEACON add "* (!CRS)" to the condition.

[6] In the SEND_BEACON state box, add "plca_active <= TRUE".

[7] In the transition from WAIT_TO to YIELD change the condition to read "
(curID = local_nodeID) *
((!packetPending) + (!plca_active)) *
(!CRS)"

[8] In the transition from WAIT_TO to COMMIT change the condition to read "
plca_active *
(curID = local_nodeID) *
packetPending *
(!CRS)"

[9] from the EARLY_RECEIVE state box, remove "start recv_timer"

[10] In the transition from EARLY_RECEIVE to "C" (RECOVER) change the condition to read "
(!CRS) * (local_nodeID = 0)

[11] In the transition from EARLY_RECEIVE to "B" (RESYNC) change the condition to read "
(!CRS) *
(local_nodeID != 0) *
(rx_cmd != BEACON) *
beacon_det_timer_done"

[12] In the transition from EARLY_RECEIVE to RECEIVE, change the condition to read "receiving * CRS"

[13] from RECEIVE state, remove "stop recv_timer"

[14] from 148.4.5.4 delete the recv_beacon_timer and the recv_timer along with their description. Remove also the reference ro recv_timer in 148.4.6.4.

Proposed Response *Response Status* **O**

Cl **148** *SC* **148.4.5.1** *P* **246** *L* **33** # r03-24

Beruto, Piergiorgio Canova Tech S.r.l.

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

Missing "the"

SuggestedRemedy

Add "the" between "disrupt" and "current", to read "in order not to disrupt the current cycle of transmit opportunities"

Proposed Response *Response Status* **O**

Cl **146** *SC* **146.8.1** *P* **174** *L* **40** # r03-25

Yseboodt, Lennart Signify

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

Comment r01-88 provided a rationale to remove the descriptive language used in 146.8.1 that points to connectors based on IEC 63171-1 and IEC 63171-6.

This comment, after substantial discussion, was accepted in principle and the CRG chose to remove the connector descriptions.

This change was reverted at the next meeting.

This group has chosen NOT to mandate a specific connector in order to comply with 802.3cg. This allows system vendors to make the appropriate choice for their applications. It also allows other SDO's to create interoperability standards around 802.3cg where choices are made for specific application (eg. connectors chosen.)

There is no justification for an 802.3 standard to choose NOT to madate a connector, but at the same time make a soft recommendation for TWO connectors.
Either the group chooses to define MDI interoperability, and mandate a connector, or we leave that choice to vendors/other SDO's and only specify connector requirements.

802.3 is no place for advertisements.

The new SPMD group is going to define a powering system for use with an (enhanced) part of
802.3cg. Because power is involved, the issue of connectors will also play there.
It complicates the work of that group if there is market confusion around connectors.
Recommendations for connectors create that confusion.
The group needs time to figure out how to enable interoperability and co-existence between all of the different 802.3cg data modes and the two powering schemes.

It is key that 802.3cg makes no mention of connectors and leaves a green field for SPMD to figure this out.

SuggestedRemedy

Re-adopt the resolution of r01-88.

Proposed Response *Response Status* **O**

Cl **146** *SC* **146.8.1** *P* **174** *L* **44** # r03-26

Jones, Chad — Cisco Systems, Inc.

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

The standard offers two options for a connector - and optional options. While some think this is a service to the reader, I view this as a disservice. It is my opinion that a connector should be mandatory or not included. Since this standard attempts to cover a great many use cases, many that do not need a connector, I feel the connector references should be deleted.

802.3 is not Craigslist. It should not be a place for advertisements.

SuggestedRemedy

revert to the resolution of r01-88

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.9.1** *P* **225** *L* **43** # r03-27

Jones, Chad — Cisco Systems, Inc.

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

The standard offers two options for a connector - and optional options. While some think this is a service to the reader, I view this as a disservice. It is my opinion that a connector should be mandatory or not included. Since this standard attempts to cover a great many use cases, many that do not need a connector, I feel the connector references should be deleted.

802.3 is not Craigslist. It should not be a place for advertisements.

SuggestedRemedy

revert to the resolution of r01-88

Proposed Response *Response Status* **O**

Cl **146** *SC* **146.8.1** *P* **174** *L* **44** # r03-28

Kim, Yongbum — NIO

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

While heading is editorial, this comment is on the use of the terminology MDI - a mandatory conformance test point and interoperability interface -- inappropriately to refer to a connector reference that *may be* used as "MDI connectors". There may be only one MDI connector, unless there is no connector at all at the MDI (as is the case with Backplane Ethernet, automotive Ethernet PHYs, chip to module interfaces, all to do with undefiniable or undesirable (for the served application) connector at the MDI). This project clearly has a need for a medium attachment unit (MAU), Medium, and means of connecting tyhe two (THE MDI connector). Either pick one of the two illustrated referenced connector as the MDI (only one), or do not refer to either one as MDI connectors. Doing so would only serve marketing purposes without serving any normative conformance purposes.
Reminder -- we do standard to achieve industry-wide multi-vendor interoperability. We don't do standards for standards sake. MDI, including a single chosen connector, serves a way to ensure interoperability while also serving as the exposed test point. Unless there is no selectable connector system to reference, there should be one and only one MDI connector.

SuggestedRemedy

Change the clause title to "Reference Connectors";
Change "MDI jack connector" line 3, pg 175 to "jack connector";
Change Table 146-8 "MDI contacts" to "contacts"

Proposed Response *Response Status* **O**

Cl **146** *SC* **146.8.2** *P* **176** *L* **3** # r03-29

Kim, Yongbum NIO

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

"The electrical requirements specified in 146.5.4 and 146.5.5 shall be met when the PHY is connected to the MDI connector mated with the specified plug connector." This statement is in error. There is a "shall" statement but there is NO specified plug connector in the draft at present. Either specify one (and only one) specified connector (which would make this statement true), or revise the statement to eliminate the referece to the "specified connector".

SuggestedRemedy

If CRG selects one and only one MDI connector as the MDI, then this comment is withdrawn. Otherwise, change the text to read
"The electrical requirements specified in 146.5.4 and 146.5.5 shall be met when the PHY is connected to a connector mated with a plug connector, measured at the mated contacts as the measurement interface." or technically equvalent statement that recognizes that there is no specified MDI connector while preserving the nomative statement. FYI - CL147 uses the "MDI attachment point" phase, which does not clearly specify where the test proble should be attached.

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.9.1** *P* **226** *L* **43** # r03-30

Kim, Yongbum NIO

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

While heading is editorial, this comment is on the use of the terminology MDI - a mandatory conformance test point and interoperability interface -- inappropriately to refer to a connector reference that *may be* used as "MDI connectors". There may be only one MDI connector, unless there is no connector at all at the MDI (as is the case with Backplane Ethernet, automotive Ethernet PHYs, chip to module interfaces, all to do with undefiniable or undesirable (for the served application) connector at the MDI). This project clearly has a need for a medium attachment unit (MAU), Medium, and means of connecting tyhe two (THE MDI connector). Either pick one of the two illustrated referenced connector as the MDI (only one), or do not refer to either one as MDI connectors. Doing so would only serve marketing purposes without serving any normative conformance purposes. Recongizing that 10BASE-T1S serves automotive and backplane (non-exposed and undesirable-to-define connector systems) as well as industrial (exposed medium connection), it would be appropriate to specify the MDI as optional mandatory, i.e. use of the MDI connector is optional, but if one were to be used then it shall be the one..

SuggestedRemedy

If CRG decides to select one and only one MDI connector as the optional mandatory (e.g. use is optional, but if used then it shall be the one) then this comment is withdrawn. Otherwise,
Change the clause title to "Reference Connectors";
Change "MDI jack connector" line 3, pg 175 to "jack connector";
Change Table 147-3 "MDI contacts" to "contacts".

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.12.3** *P* **232** *L* **11** # r03-31

Kim, Yongbum NIO

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

*INS "Installation/Cabling" "Items marked with INS include installation practices and cabling specifications not applicable to a PHY manufacturer."
Comment 1: INS as used in 147.12.4.7 and 147.12.4.8 do not seem right. PICS statement test for the conditional *INS. And if true, then :M (mandatory) kicks in. Two separate media, and they cannot be simulanouysly true at the same time. At best, INS should be split for P2P and Mixing, such as INS-P2P and INS-MIX, or equivalent.

SuggestedRemedy

Define INS-P2P and INS-MIX and use them in 147.12.4.7 and 147.12.4.8 respectively.

Proposed Response *Response Status* **O**

Cl **147** *SC* **147.12.3** *P* **232** *L* **11** # r03-32

Kim, Yongbum NIO

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

*INS "Installation/Cabling" "Items marked with INS include installation practices and cabling specifications not applicable to a PHY manufacturer."
Comment 2: 10BASE-T1S PHY operating in P2P has termination in the PHY, while 10BASE-T1S PHY operating in the Mixing Segment has termination on the medium (PHY being high-impedance tap connection), and 10BASE-T1S operating in half-duplex P2P has termination in TBD places. And in the cases where the high impedance tap is used, the internal trace length (from the connector) may/may not effect compliance to the conformance spec. So this part of the PICS seems to have dependancy to PHY as well as installation.

SuggestedRemedy

Change "... installation practices and cabling specifications not applicable to a PHY manufacturer." to "... installation practices and cabling specifications and may be applicable to a PHY manufacturer."

Proposed Response *Response Status* **O**