Cl **149** *SC* **149.3.9.3** *P* **135** *L* **32** # i-92

Tu, Mike

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

The variable "mr_rx_message" does not exist. Its name should be "mr_rx_lp_message".

SuggestedRemedy

Within Table 149-9, on line 32, 34, 37, and 39, replace "mr_rx_message" by "mr_rx_lp_message".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **149** *SC* **149.3.9.3** *P* **135** *L* **27** # i-93

Tu, Mike

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

The register bit mappings for OAM status messages are inconsistent with the definition given in Figure 149-25 (line 30 and line 34 on page 142).

SuggestedRemedy

In Table 149-9, the last column: 1. On line 27, change from "mr_tx_message[95:88]" to "mr_tx_message[87:80]". 2. On line 29, change from "mr_tx_message[87:80]" to "mr_tx_message[95:88]". 3. On line 36, change from "mr_rx_message[95:88]" to "mr_rx_lp_message[87:80]". 4. On line 39, change from "mr_rx_message[87:80]" to "mr_rx_lp_message[95:88]".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **149** *SC* **149.1** *P* **77** *L* **17** # i-94

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

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

The overview and the draft indicate that clause 149 operates over a single balanced pair of conductors. As in other standards, this may include either cabling or a backplane link segment. However, in several portions of the link segment specification, the requirements are written so that ONLY a separate cabling link segment can be used. this is in conflict with the overview and purpose. A slight adjustment to the wording, and a conditional on the PICS will make it clear that requirements such as coupling attenuation and shielding attenuation are only intended to apply to cabling link segments.

SuggestedRemedy

page 167 line 10 : At 149.7, change the last sentence of the first paragraph from "The term link segment used in this clause refers to a single shielded balanced pair of conductors operating in full duplex. " to "The term link segment used in this clause refers to a single balanced pair of conductors (cable or backplane) operating in full duplex. "; Page 171 line 31: at 149.7.1.4, change the first sentence from "when tested using the IEC 62153-4-7 triaxial tube in tube method as specified in Annex 149A, the MultiGBASE-T1 link segment shall meet the coupling attenuation values " to "when tested using the IEC 62153-4-7 triaxial tube in tube method as specified in Annex 149A, where shielded balanced pair cabling is used, the MultiGBASE-T1 link segment shall meet the coupling attenuation values" ; Page 172 line 27: Change the first sentence of 149.7.1.5 for "The minimum screening attenuation..." to read "Where shielded balanced pair cabling is used, the minimum screening attenuation..."; Page 174 line 36: Change the first sentence of 149.8.1 from "The mechanical interface to the shielded balanced cabling " to "Where shielded balanced pair cabling is used, the mechanical interface to the shielded balanced cabling"; Page 179 line 10, 149.11.3, insert row for *INS after row for *EEE, reading "*INS | Installation / cabling | 149.7 | Items marked with INS include installation practices and cabling specifications applicable when the link segment is balanced pair cabling, and not applicable to backplane link segments | O | Yes []<cr> No []" ; on page 193 line 12, Change status of row for LSC5 to "M:INS"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **149** *SC* **149.4.4.1** *P* **156** *L* **51** # i-95

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

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

The Link Monitor state diagram (Figure 149-33) uses the variable PMA_refresh_status for one of its transitions but the behavior is not defined anywhere.
Section 149.4.4.1 indicates that it indicates the status of the Refresh Monitor and is described in 149.4.2.7, but there isn't any definition there.
The Refresh Monitor (Figure 149-34) sets loc_rcvr_status to NOT_OK upon failure, which causes the same transition in the Link Monitor state diagram as PMA_refresh_status=FAIL, so I suspect that a change was made and some of the references to PMA_refresh_status were not removed. Further, the definition of loc_rcvr_status elsewhere is listed as 'implementation dependent' and the result of monitoring the receiver performance (149.2.2.7 and 149.4.2.3) - having behavior defined in a state diagram contradicts these statements.

SuggestedRemedy

In Figure 149-33, add PMA_refresh_status <= OK to state LPI_OK and add PMA_refresh_status <= FAIL to state LPI_REFRESH_TIMEOUT. (<= is used here to indicate the assignment operator). Change the fourth sentence of 149.4.2.7 from "The function forces a link retrain" to "The refresh monitor sets the PMA_refresh_status variable, which forces a link retrain"...

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The incorrect figure was referenced in the suggested remedy.

In Figure 149-34 (EEE Refresh monitor state diagram), add PMA_refresh_status <= OK to state LPI_OK and add PMA_refresh_status <= FAIL to state LPI_REFRESH_TIMEOUT. (<= is used here to indicate the assignment operator).

Change the fourth sentence of 149.4.2.7 from "The function forces a link retrain" to "The refresh monitor sets the PMA_refresh_status variable, which forces a link retrain"…

Cl **149** *SC* **149.2.2.6** *P* **88** *L* **4** # i-96

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

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

The parameter pcs_status is passed to the PMA from the PCS, but other than showing it is being passed in figure 149-26 to PMA_Receive and PHY_Control, there is no mention of this parameter's effect on behavior. It appears that pcs_status may be used in the determination of loc_rcvr_status, because it indicates block lock in the PCS and RS-FEC behavior. Additionally, neither pcs_status nor scr_status are used in the PHY Control state diagram as indicated in Figure 149-26.
In draft 2.0, pcs_status was in the link monitor state diagram, but in the current draft this has been replaced by pcs_data_mode. pcs_status = OK requires the hi_rfer indication to be false, but pcs_data mode doesn't - it just requires PHY Control to have progressed to data mode, which initially requires hi_rfer to be false, but not continually.
If the link_monitor goes to fail, the link goes down and pcs_data_mode is set false by the link_synchronization state diagram (or autoneg) reseting the phy control.
Reading through this, it looks to me like the new state diagrams can operate in a perpetual state of hi_rfer or even loss of pcs block lock. That could be a problem, but can be remedied if loc_rcvr_status may be set with the information from pcs_status.

SuggestedRemedy

Change Figure 149-26 to delete connection of pcs_status to PHY Control, and change the first sentence of the third paragraph of 149.4.2.3 (P145 L5) from "The PMA Receive function uses the scr_status parameter and the state of the equalization, cancellation, and estimation functions to determine the quality of the receiver performance, and generates the loc_rcvr_status variable accordingly." to "The PMA Receive function uses the parameters pcs_status and scr_status, and the state of the equalization, cancellation, and estimation functions to determine the quality of the receiver performance, and generates the loc_rcvr_status variable accordingly."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The actual signal line into "PHY CONTROL" is "scr_status / pcs_status".

Change Figure 149-26 to delete connection of "scr_status / pcs_status" to PHY CONTROL, and change the first sentence of the third paragraph of 149.4.2.3 (P145 L5) from "The PMA Receive function uses the scr_status parameter and the state of the equalization, cancellation, and estimation functions to determine the quality of the receiver performance, and generates the loc_rcvr_status variable accordingly." to "The PMA Receive function uses the parameters pcs_status and scr_status, and the state of the equalization, cancellation, and estimation functions to determine the quality of the receiver performance, and generates the loc_rcvr_status variable accordingly."