Proposal to resolve Comment i-336

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Summary: It is keeping Table 145-36 as is, but adding alien crosstalk requirements for Cord Midspan PSEs which were inadvertently left out.

Comment i-336 says:

"*Cl* **145** *SC* **145.4.9.2** *P* **210** *L* **19** i-336
Comment Type **T**
Support of 2.5GBASE-T with category 5e and support of 5GBASE-T with category 6 is only in the case that the cabling meets the additional requirements specified in clause 126.7 of 802.3bz.
SuggestedRemedy
Add a footnote referencing back to the 2.5GBASE-T and 5GBASE-T column rows that says, "For defined uses cases (refer to IEEE Std 802.3bz(TM)-2016). Category 6A cord in ISO/IEC 11801-1 or ANSI/TIA-568-C.2 recommended."

The proposed resolution suggests 145.4.9.2 is about what cords too use. However, 145.4.9.2 isn't about using a cord – it is reference to requirements for the midspan which replaces a cord to meet. Meeting all the requirements for a cat6a cord would be overkill for a 2.5G or 5G midspan (lots more bandwidth in the transformers, less insertion loss, etc.)

145.4.9.2 says:
A Midspan PSE replaces an element in a link segment and shall meet or exceed the insertion loss, NEXT, and return loss values specified Table 145–36 for all data transmitting pairs.

Table 145–36—Cord specifications for use with Midspan PSEs

Highest PHY rate supported	Cord specification	Frequency range
Up to 1000BASE-T	Category 5 cord in ISO/IEC 11801:2002 or ANSI/TIA-568-A:1995	1 MHz ≤ f ≤ 100 MHz
Up to 2.5GBASE-T	Category 5e cord in ISO/IEC 11801:2002 or ANSI/TIA-568-C.2	1 MHz ≤ f ≤ 100 MHz
Up to 5GBASE-T	Category 6 cord in ISO/IEC 11801:2002 or ANSI/TIA-568-C.2	1 MHz ≤ f ≤ 250 MHz
Up to 10GBASE-T	Category 6A cord in ISO/IEC 11801-1 or ANSI/TIA-568-C.2	1 MHz ≤ f ≤ 500 MHz

So, my summary – we are OK in terms of the transmission parameters (since 5G references Cat 6 requirements, it doesn't need frequency extensions, like it would if it were aligned to Cat 5e). BUT, we need something for alien crosstalk. That is, however, supposed to be covered in a subsequent section – except that the moron who did it (me), forgot to include a reference to "cord midspans" and only did it for "connector midspans".

PROPOSED RESOLUTION: ACCEPT IN PRINCIPLE

Add the cord midspan types so they are covered by the specifications for Coupling parameters between link segments (also known as alien crosstalk). Additionally, 145.4.9.2.3 should be moved up to the 145.4.9.x level (as 145.4.9.4) and retitled as shown, and 145.4.9.2.4 (PSANEXT) and 145.4.9.2.5 (PSAFEXT) should be moved as well to be subordinate to the new 145.4.9.4 as clauses 145.4.9.4.1 and 145.4.9.4.2. Align text with any changes from other comments.

Change 145.4.9.2.3 to be 145.4.9.4 and change title and first paragraph as shown:

~~145.4.9.2.3~~ 145.4.9.4 Coupling parameters between link segments with Midspan PSEs

Midspan PSEs intended for operation with 2.5G/5G/10GBASE-T (variants 5 through 10 in 145.4.9.1 and variants 3 through 5 in 145.4.9.2) are additionally required to meet the following parameters for coupling signals between ports relating to different link segments. Noise coupled between the disturbed duplex channel in a link segment and the disturbing duplex channels in other link segments is referred to as alien crosstalk noise. To bound the total alien NEXT loss and alien FEXT loss coupled between link segments is limited, multiple disturber alien near-end crosstalk (MDANEXT) loss and multiple disturber alien FEXT (MDAFEXT) loss is specified.

Change 145.4.9.2.4 to 145.4.9.4.1
Change 145.4.9.2.5 to 145.4.9.4.2

The same change should be made to 33.4.9.2.3, 33.4.9.2.4 and 33.4.9.2.5.