Closing the COM budget consensus proposal

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outline

- Close the budget “hole” by changing effective Tx/Rx/channel specs wherever we can have strong consensus.
- Engineered systems can use statistical nature of system construction to get further design flexibility.
  - Deployed transmitters, receivers and channels all have some distributions
  - Compliance of each part determines the worst case of that part
  - The worst case is assumed to be relatively infrequent (we do not specify this assumption explicitly – it is vendor dependent)
  - The combination of “all worst case” is assumed to be rare enough
  - System integrators may take means to ensure this assumption is met.

Proposal (1) for clause 111

- Tax the transmitter…
  - Change the "linear fit pulse peak" spec from $0.71 \times v_f$ to $0.75 \times v_f$
  - Editorially, add an exception in 111.8.2
- Tax the receiver…
  - Change the g_{DC} minimum from -12 dB to -13 dB
  - Editorially, change the parameter in Table 111–8
- Tax the channel…
  - Add a Gaussian filter with T_r=12 ps in COM calculation
  - Editorially… (fill in, or implement with editorial license)
  - Estimated impact on channel COM is 0.2 dB
- Pick margin off the table…
  - Change COM parameters A_v, A_{fe}, A_{ne} from current values to 0.43, 0.63, 0.63 respectively
  - Editorially, change the parameters in Table 111–8
- The estimated remaining COM deficit is ~0 dB

Proposal for clause 110

- Tax the transmitter (device + host traces)…
  - Change the "linear fit pulse peak" spec from $0.45 \times v_f$ to $0.49 \times v_f$
  - Editorially, add an exception in 110.8.3
- Tax the receiver…
  - change the g_DC minimum from -12 dB to -13 dB in CA-S and CA-L
  - Editorially, change the parameter in Table 110–11
- Tax the channel…
  - Add a Gaussian filter with T_r=8 ps in COM calculation
  - Editorially… (implement with editorial license)
- Pick margin off the table…
  - Change COM TX_{SNR} to 29 dB (without changing SNDR spec)
  - Editorially, change the parameters in Table 110–11
- The estimated remaining COM deficit is 0 dB