Completing the family of TDECQ-related specifications

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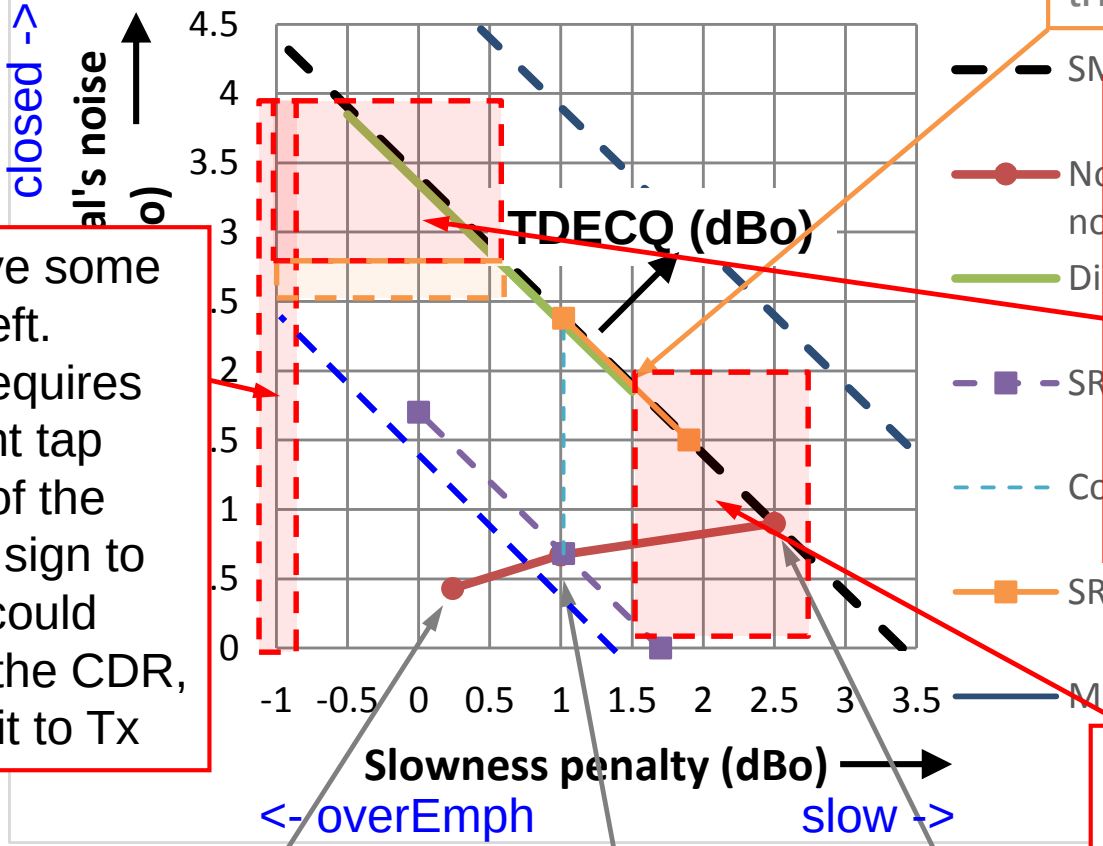
Don't support unrealistic bad scenarios

From a previous presentation



SRS signal must be in this range – see backup

Must have some limit on left.
Too far requires significant tap weights of the opposite sign to normal, could confuse the CDR, no benefit to Tx

Should be excluded because the eye after FFE is very closed, and small inaccuracies in Rx would cause big additional penalties (cliff edge)
Like VEC issue in C2M

Ideal waveform

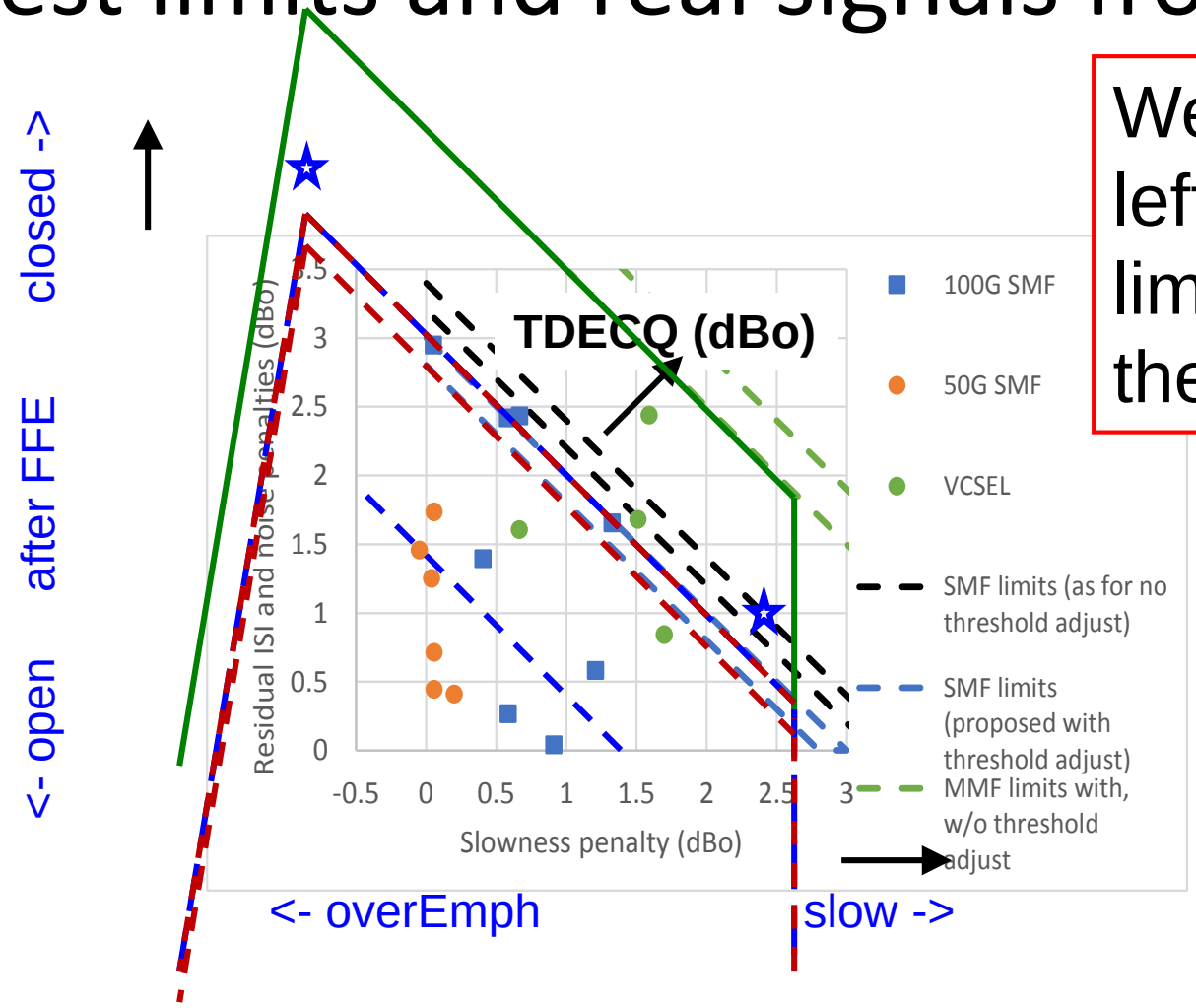
Half the SECQ from filtering

Slowest, as d slides 2 to 5

Should be excluded because it requires strong tap weights not useful in practice, for SMF would have failed T/2-spaced TDECQ

"Exclusion" could be by giving signals in the red boxes worse TDECQ scores, or by "hard" pass-fail rules

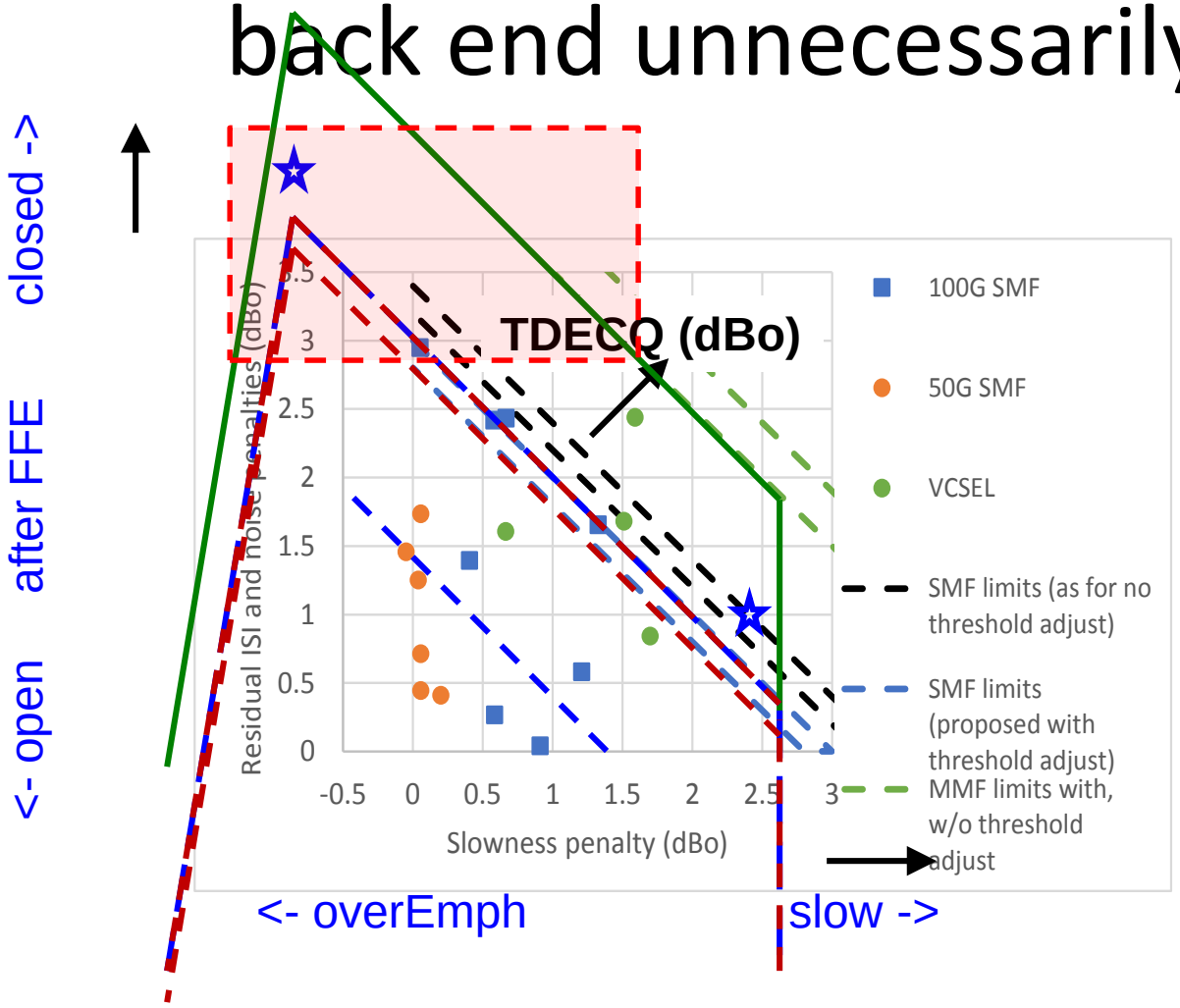
Latest limits and real signals from survey



We now have left and right limits but not the "top" limit

❖Blue stars investigated in later slides

The region in red burdens the receiver back end unnecessarily



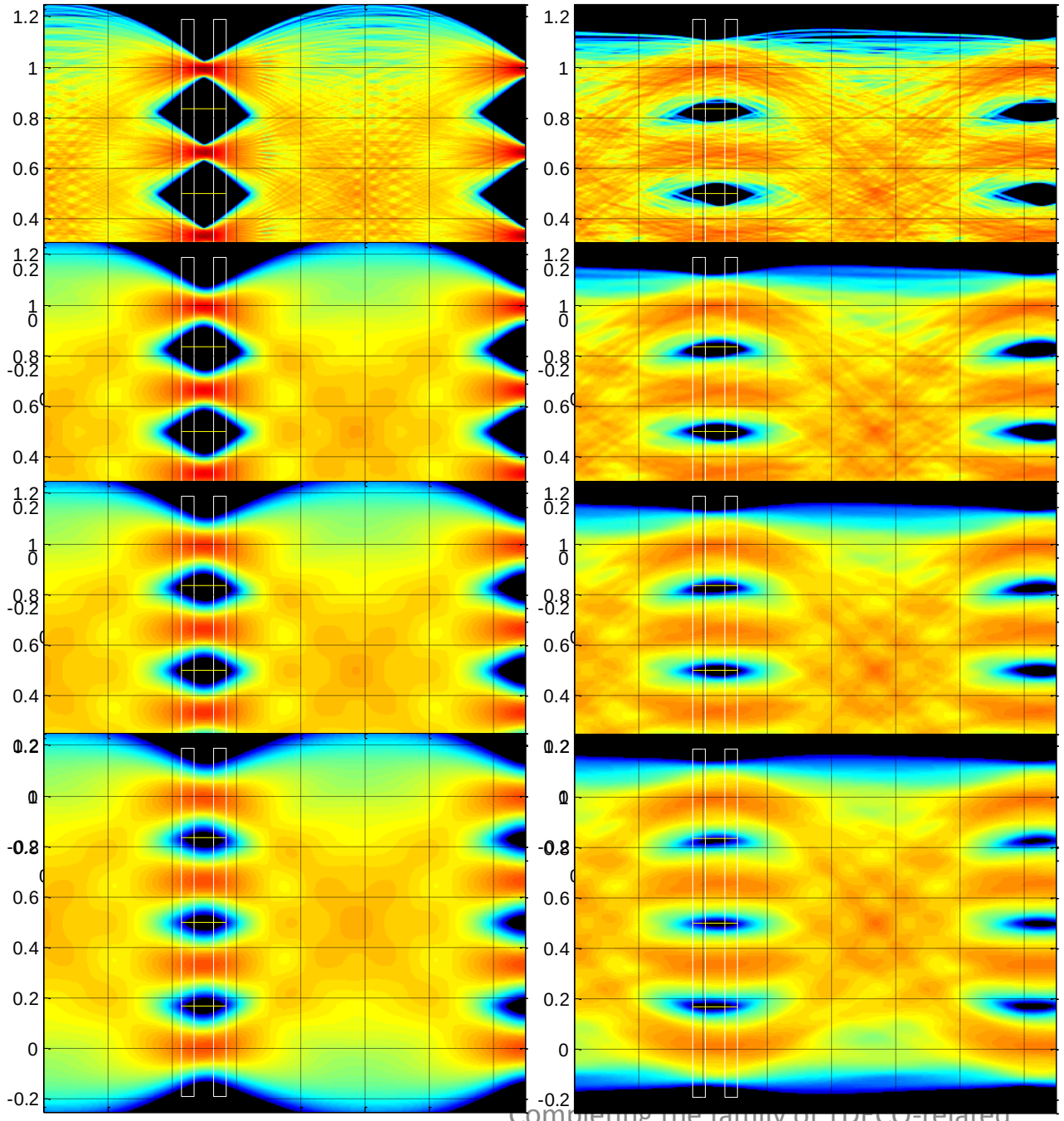
Green, brown, blue: latest limits for:

MMF,

50G SMF,

100G SMF

❖Blue stars investigated in later slides



Two signals with same TDCEQ

From top:

Very little Rx noise

3 dB above sensitivity

1 dB above sensitivity

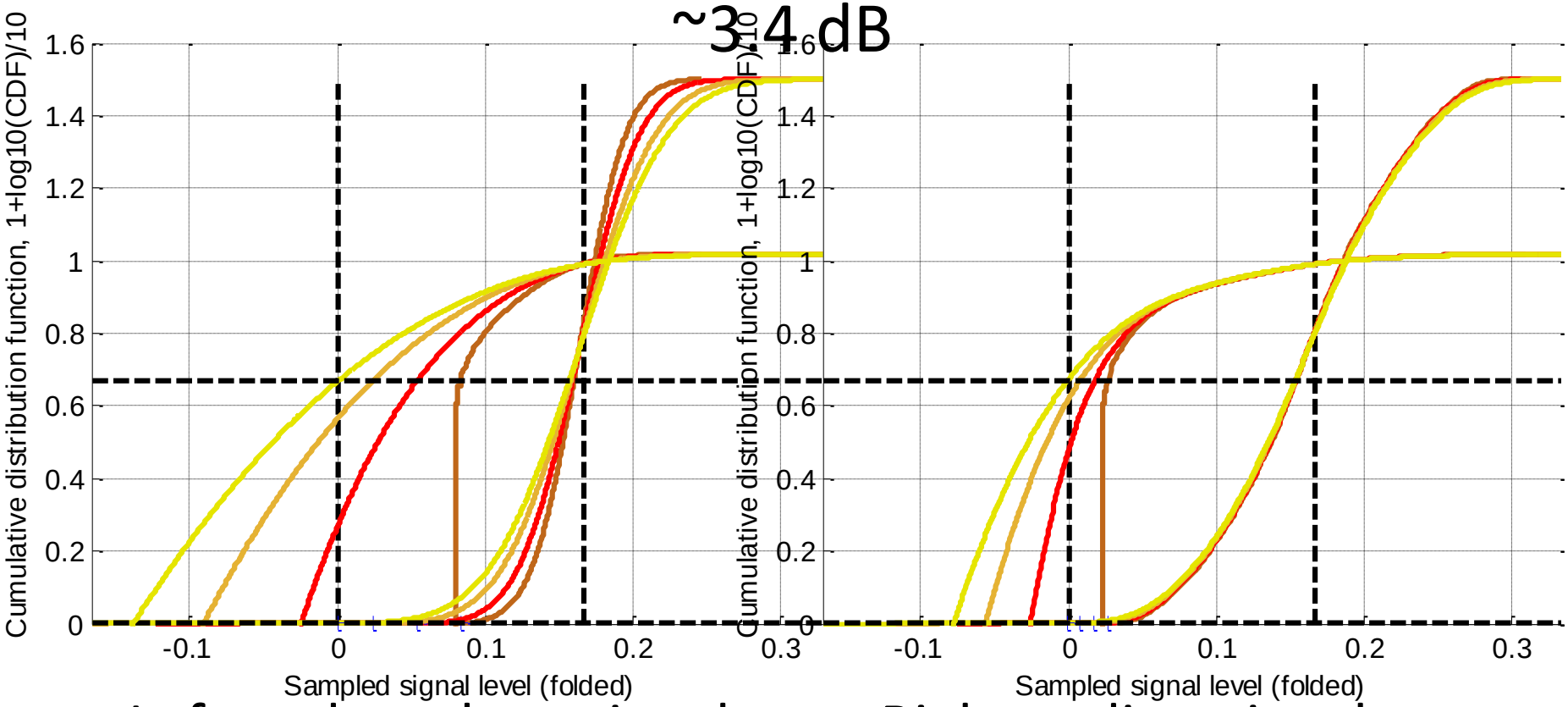
At sensitivity

Left: a slow clean signal

Right: a dirty signal

(opposite way to slides 3, 4)

Histograms of two signals with very similar TDCEQ ~3.4 dB



- Left: a slow clean signal Right: a dirty signal
  - Almost no Rx noise, 3, 1, 0 dB above sensitivity
  - The eyes are folded: threshold at 0, nominal signals at 1/6

BER = 0 2.3e-8 2.1e-5 2.3e-4
eye Opening / OMA =
0.1673 0.1080 0.0483 0.0013

BER = 0 2.6e-6 7.4e-5 2.6e-4
eye opening / OMA=
0.0530 0.0351 0.0146 -0.0021