Channel Model Ad Hoc:
Report

IEEE Interim Task Force Meeting

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Activity overview:

4 Phone conferences

8 Presentations

4 Straw Polls

Presentations

2. Presentations by Mellitz, D'Ambrosia, Hendrick, and Krooswyk on the informative model. Showed:

- 1. Metric generated by combining many sets of simulations
- 2. Good ability to distinguish between channels which were "good" or "bad" in Abler simulations without crosstalk

Update will be shown at this meeting.

Presentations

2. Presentations by Mellitz, Hendrick, and Krooswyk on a proposed Normative model. Showed:

- Poor correlation to Abler simulations.
- No 2 sets of simulations correlated well with each other

Presentations

2. Presentations by Moore on proposed consensus Link Budget normative model:

- General consensus on model but dissatisfaction with the complete lack of filled in blanks
- Current model later in this presentation

Presentations

1. Presentations by Sawyer and Moore on effect of Transmitter duty cycle distortion. Showed that “phase noise amplification” can better be treated as baseline wander.

Presentations

1. Presentations by Healey on effect crosstalk. Showed that crosstalk calculations in the frequency domain can be equivalent to ones done in the time domain.

Straw Polls

Straw poll #1:

Should the affects of the worst case Rx and Tx return loss be included in the normative channel model?

Y: 14

N: 2

Strong Yes

Straw Polls

Straw poll #2:

Chicago rules: should Normative channel model be:

4. Full channel sim with XT, Rx, Tx, like StatEye?
5. Link Budget like Popescu_01_0205 or moore_01_1104.
6. Hybrid of 1 & 2

8. 3
9. 11
10. 10

Little interest in full channel sim

Straw Polls

Straw poll #3:

Are you interested in using an Rx normative spec instead of or in addition to a normative channel spec?

Y: 3

N: 5

A: 6

No great interest and that mostly negative.

Straw Polls:

Straw poll #4:

Use square root of Power sum of Cross talk power integrals as described in healey_c1_0505, multiplied by TBD as crosstalk penalty.

Y. 5

N. 2

A. 12

Yes wins but too many abstains for it to mean much.

Consensus

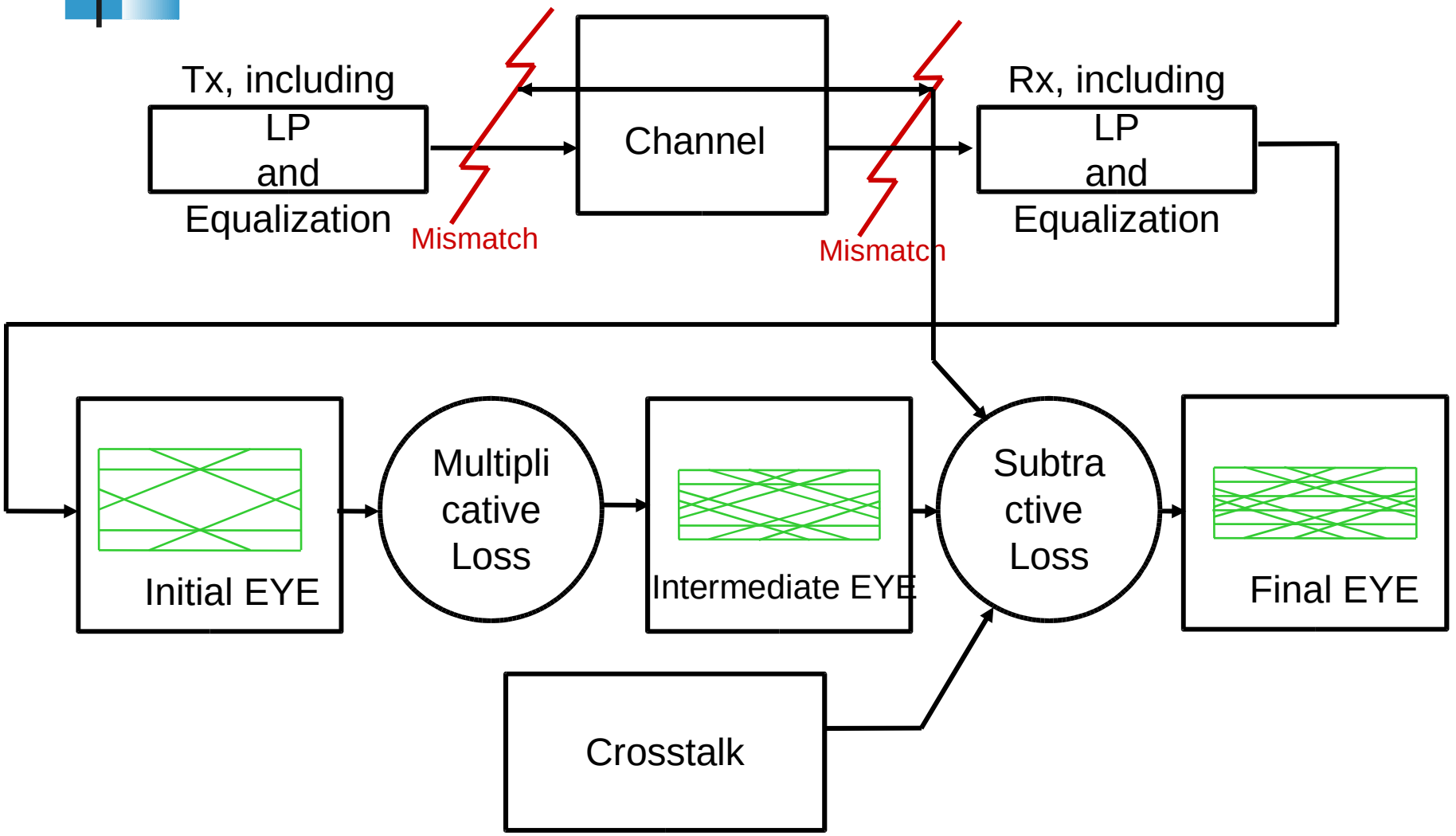
Consensus item: Agree that we are using Link Budget model as shown below.

General agreement but dissatisfaction that there are no values filled in.

Assigned Mellitz and Moore to come up with initial values.

Next slides show Link Budget as understood

Link Budget model



Link Budget Continued

Possible items in link Budget:

Multiplicative: (gain-attenuation)

1.	Tx return loss:	fixed or channel SDD11 dependent
2.	Rx return loss:	fixed or channel SDD22 dependent
3.	Channel loss:	Computed from channel
4.	Tx equalization effect:	May be positive or negative depending on how Channel loss is treated
4.	Rx equalization effect:	May be positive or negative depending on how Channel loss is treated
6.	Hybrid EYE loss:	alternative to 1-5 by hybrid computation
7.	Tx jitter other than DCD:	fixed
8.	Jitter multiplication:	One treatment of DCD
9.	Rx jitter:	fixed

Link Budget Continued

Possible items in link Budget:

Additive: (direct deduction from EYE height)

5.	Cross talk penalty:		Channel cross talk dependent, Use root power sum from healey_c1_0505?
2.	Un-equalizable ISI:	may be	covered by Hybrid model
3.	Re-reflection:	may be	covered by Hybrid model
8.	DCD penalty	fixed,	alternate treatment of DCD
9.	AC coupling Baseline wander	fixed	
5.	Receiver margin:	fixed,	consists of:

a. Noise
b. Fixed offset
c. Minimum Slice input