Summary of Error Propagation for 100GBASE-KR1/CR1

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Consensuses on Error Propagation for 100GBASE-KR1/CR1

- No FEC performance concern for 1-tap DFE receiver, which is considered to be the mainstream receiver for 100GE CR/KR (anslow_3ck_01_0918 page 5).

- No FEC performance concern for realistic channels with multi-tap DFE receiver found yet.

- Precoding is essential to guarantee the post-FEC performance due to the DFE based reference receiver (1-tap/multi-tap) (healey_100GEL_01_0318).

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Necessity of "Interleaved FEC" is questioned for host ASIC

- The FEC performance for multi-tap DFE is only a "maybe", but not a proven "issue".
- While the "latency/power" of "Interleaved FEC" is not only a "concern" but a proven "issue" :
  - latency concerns was raised in lyubomirsky_3ck_01a_0119.
  - System Impacts including more latency and complicate CDR were discussed in lu_3ck_adhoc_01_022719.
- Performance & cost comparison of solutions are summarized in lu_3ck_01_0519.pdf (including constraining DFE weights/PMA remapping/EoBD and interleaved FEC)

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Summary

We haven't found issue channel yet (no FEC performance concern for realistic channels with multi-tap DFE receiver are found yet).

However,

We might go for a most costly solution (interleaved FEC) for a "maybe".

Anyhow:

We would hope to use interleaved FEC only when necessary as suggested in lu_3ck_02_0719.pdf and zhuang_3ck_02_0919.pdf.

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Thank you !

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