OTN Support for 50GbE, next generation 100GbE, and 200 GbE

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Recap – What is implied by "Appropriate Support for OTN"

- See presentation "OTN Support – What is it and why is it important?"
- Key elements:
  - Clarity that line code is not a playground for proprietary extensions, creating confidence in transcoding implementations if necessary to get the signal to fit (unlisted control block types shall not be transmitted and shall be considered an error if received)
  - Single PCS or OTN mapping reference point for mapping a given rate of Ethernet into OTN
  - Mapped Ethernet signal FITS into the expected capacity within an optical transport network
  - Ethernet Optics can be reused for OTN client interfaces at the same rate

OTN support by rate

- Next generation 100GbE PMDs are expected to reuse the P802.3ba (clause 82) PCS, which satisfies the OTN support objective
- 200GbE PMDs developed by P802.3cd are expected to reuse the 200GbE PCS from P802.3bs (clause 119), which satisfies the OTN support objective
- 50GbE is the place we will need attention to not create OTN-related issues

Line code not a playground for proprietary extensions

- Assuming that 50GbE reuses clause 91 FEC (or something similar) with transcoding, 50GbE will have to restrict the control block types that are used so they don’t break its own transcoding. No real danger that this won’t be met.

OTN Reference Point

- There should be a point in the stack common to all 50GbE PMDs that can be used for the mapping format of 50GbE into OTN. The same PMD need not be used at the OTN ingress and egress.
- What creates awkwardness for 25GbE is that some operational modes have CWM and others do not, so idle insertion/deletion is required to interconnect PMDs with and without CWM across an OTN
- Current 50G PCS proposals are that all 50GbE PMDs have FEC and all 50GbE PMDs have CWM, so this should not be a problem based on current proposals
- Client FEC is not normally carried over the OTN, so no requirement that all 50GbE use the same FEC, as long as the information content exclusive of FEC parity is the same. For example, if some PMDs use RS(528,514) and others use RS(544,514), this is not a problem.

Does the format fit the expected capacity in OTN networks?

- Mapping 50GbE into 40 tributary slots of OPU4 is straightforward as long as the encoded bit-rate of 50GbE without FEC does not exceed 52.066 Gb/s. What is likely to be mapped over OTN (64B/66B with or without a marker) have a bit-rate of 51.5625 Gb/s which does not exceed this limit
- It would be an issue if two 50GbE would not fit into OPU4
- If two 50GbE fit into OPU4, then 2n 50GbE fit into OPUCn (the “beyond 100G” OTN container)

Reuse of 50G Ethernet interfaces for 50G OTN interfaces

- Not applicable, since there is no standardized 50G OTN physical interface

THANKS!