8*100G&16*100G PCS/FEC/PMA baseline proposal

Leon Bruckman (Huawei), Yan Zhuang (Huawei)

Purpose

- Present our view on the status of discussions regarding Option 1 versus Option 2
- Our preference
- How to continue from here

Option 1 versus Option 2

- During the last ad-hoc meetings different technical issues related with 800G using 8x100G were discussed
- There are two main options on the table:
  - Option 1: 2 x Clause 119
  - Option 2: Speed up Clause 119
  - Each has a couple of possible sub-divisions, but the key is deciding between these two
- Both options can comply with the requirements, while Option 2 has some performance advantages (wang_3df_logic_220630.pdf, opsasnick_3df_logic_220630a.pdf, wong_3df_logic_220630.pdf, lu_3df_logic_220623.pdf):
  - Lower latency
  - Better BER performance
  - These technical advantages are agreed
- Regarding implementation:
  - Option 1:
    - Advantage – Duplicate Clause 119 design
    - Disadvantage – Larger area
  - Option 2:
    - Advantage: smaller area
    - Disadvantage: Depends on the capability to speed up the design without penalty
- Editorial work:
  - Option 1 more work than Option 2 (same Clause 119 just higher speed defined)

Other observations

- 800G over 100G/lanes is not the main market. It is an interim solution until 200G/lane technology is available
  - We want to provide a solution soon (minimum effort, minimum risk)
  - But we still want to provide the best technical option
- ETC has already defined an 800G Specification based on Option 1
- 802.3df 1.6T objective: Support optional sixteen-lane 1.6 Tb/s attachment unit interfaces for chip-to-module and chip-to-chip applications
  - Some discussions regarding the use case, but the objective remains
  - Following the architecture of Option 1 this will become 4xClause 119, while Option 2 will become similar to 800G Option 1

Our preference

- We shall select the best solution, even if it presents only small advantages.
  - Any additional margin may prove useful in some extreme cases
- Option 1 is already defined in ETC. Whoever wants to implement it does not have to (and probably is not) wait for IEEE
- Editorial work involved in specifying Option 2 is trivial
  - We are ready to take the task
- Select Option 2 for 800G 8x100G

How to continue from here

- It doesn’t seem to be a strong argument in favor of any option that can convince the whole group to consent on one option
  - If we can agree on Option 2 – Great !
- To make progress we propose:
  - Start working on the very small editorial work needed for Option 2
  - Wait from field feedback regarding the 800G ETC acceptance and need for an IEEE standard, if yes add it also.

Thanks!