

OTN Support for 100 Gb/s per lane Optical PHYs

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“Provide appropriate support for OTN” has become a key foundational objective for higher-speed optical projects

- P802.3ba (40GbE & 100GbE)
- P802.3bm (40GbE & 100GbE)
- P802.3by (25GbE)
- P802.3bs (200GbE & 400GbE)
- P802.3cc (25GbE)
- P802.3cd (50GbE, 100GbE, 200GbE)

P802.3bg – without objective

- Scope of the project (from PAR form): “The scope of this project is to add a single-mode fiber Physical Medium Dependent (PMD) option for serial 40 Gb/s operation by ...”
- Objective: “Use only existing electrical and logical interfaces from IEEE Std 802.3 as modified by IEEE P802.3ba “

Merits of OTN support objective for 100 Gb/s per lane Optical PHYs project

- The undocumented assumption is that this will be a PMD-only project
- If that intention is maintained:
 - The action taken by the P802.3bs project to meet the OTN support objective in the clause 119 PCS is maintained; and
 - The action taken by the P802.3ba and P802.3cd projects to meet their OTN support objectives is maintained;
 - and hence no additional effort is required in this project to provide appropriate support for OTN
- However:
 - There is nothing in the scope to constrain that this is a PMD-only project: “This project is to specify additions to and appropriate modifications of IEEE Std 802.3 to add Physical Layer specifications and Management Parameters for 100 Gb/s and 400 Gb/s Ethernet optical interfaces for reaches up to 10 km based on 100 Gb/s per wavelength optical signaling.”
 - Unlike P802.3bg, there are no additional objectives constraining which other interfaces or sublayers must be used without change

“Cost”, or required effort, for an OTN support objective for something that may or may not be PMD-only

- If this turns out to be a PMD only project, the effort required to meet the OTN support objective is zero, as all of the work to meet this objective was done by P802.3ba, P802.3bs, P802.3cd
- Note that other projects that turned out to be PMD only (e.g., P802.3cc) had an OTN support objective which was satisfied with zero effort
- Only in the case where some unanticipated work is needed in the PCS or FEC structure (e.g., the type of thing under discussion in P802.3ck for the 100GBASE-CR/KR interfaces to introduce a new FEC interleaving method that was not foreseen in this project) does the objective require some attention not to break the OTN mappings for these signals
- Additional thought: often, the group of foundational objectives are copied from the most recent similar scope project to the next. Keeping the full set of foundational objectives reduces the chance to “forget” an important one, even if it should be that no special work is required to meet the objective in this project.

Proposal

- Include the foundational objective:
 “Provide appropriate support for OTN”
in this project