# IEEE 802.3 Ethernet Working Group
# DRAFT Liaison Communication

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Subject: Liaison reply to ITU-T SG15 on coordination of bidirectional optical for access

Approval: Agreed to at IEEE 802.3 plenary meeting, Vancouver, Canada, 14th Mar 2019

Dear Dr. Effenberger,
Thank you very much for your communication.
We appreciate the draft document.

We want to inform you that the IEEE P802.3cp 10, 25, & 50G Bidirectional optical access PHYs project is currently in the process of selecting baselines. At our March meeting, we selected various existing clauses as the basis for the various speed and distances, as shown in the table below. (The PMA, PCS, FEC, and RS do not depend on distance or bidirectional PMD usage, so are expected to be reused as-is.)

[1] This document solely represents the views of the IEEE 802.3 Working Group, and does not necessarily represent a position of the IEEE, the IEEE Standards Association, or IEEE 802.

| Speed | 10 km | 20 km | 40 km |
|---|---|---|---|
| 10 Gb/s | Cl. 46: RS and XGMII, Cl. 49: PCS 10GBASE-R, Cl. 51: PMA | | |
| | Cl. 52: 10GBASE-LR* | TBD | Cl. 52: 10GBASE-ER* |
| 25 Gb/s | Cl. 106: RS and 25GMII, Cl. 107: PCS 25GBASE-R, Cl. 108: FEC, Cl. 109: PMA | | |
| | Cl. 114: 25GBASE-LR* | TBD | Cl. 114: 25GBASE-ER* |
| 50 Gb/s | Cl. 132: RS and 50GMII, Cl. 133: PCS 50GBASE-R, Cl. 134: FEC, Cl. 135: PMA | | |
| | Cl. 139: 50GBASE-LR* | TBD | Draft P802.3cn: 50GBASE-ER* |

* New PMD clauses that support BiDi operation will be based on these clauses.

We considered your draft outline. Some comments on the key sections are given below.

5. Configuration of an OAN.

The major items here are the wavelength plan and the loss budget. In the existing PMD specifications, the link loss is estimated using a combination of fiber and connector loss, resulting in values of about 7 dB for a 10 km link, and about 15 dB for a 40 km link. These are quite different from those specified in your document (15, 20, and 25 dB). This needs careful attention to determine the actual requirements and values.

As for wavelength, our group views 1260 to 1280 nm as the good initial choice for upstream transmission (all speeds and all distances). For the downstream, several options are being discussed (1320 to 1340, 1300 to 1320, and 1290 to 1310). The longer options will have easier diplexer filters, while the shorter options will have less dispersion penalty. For the 10G link, 1320 to 1340 nm seems most popular. The higher speeds need more study.

6. Physical layer specifications.

This section covers all the same topics as our PMD clauses. To avoid repetition and possible misalignment, we would suggest that section 6 refer to the clauses that we have under development for the PMDs.

7. TC layer and ONU management.

By its name, this section would correspond to the PMA, PCS, and OAM layers, but in addition contains many ONU management details that are out of our scope. We would suggest that the TC layer aspects of this section refer to the PMA and PCS clauses that are already present in the existing IEEE 802.3 standard.

All of the other sections of your draft are on topics that are out of our scope. We may informatively refer to your document for these topics.

For future communications, please note that our next face to face meeting will be 20 May 2019. We also plan to have a conference call on 18 April 2019. Please monitor our Email reflector. The reflector subscription information can be found at http://www.ieee802.org/3/cp/reflector.html. We note you have a meeting April 11 to 12, and then a phone call on May 14.

We appreciate your review and look forward to continued coordination on the development of bidirectional optical access PHYs.

Sincerely,
David Law
Chair, IEEE 802.3 Ethernet Working Group