

# Super-PON PCS Options

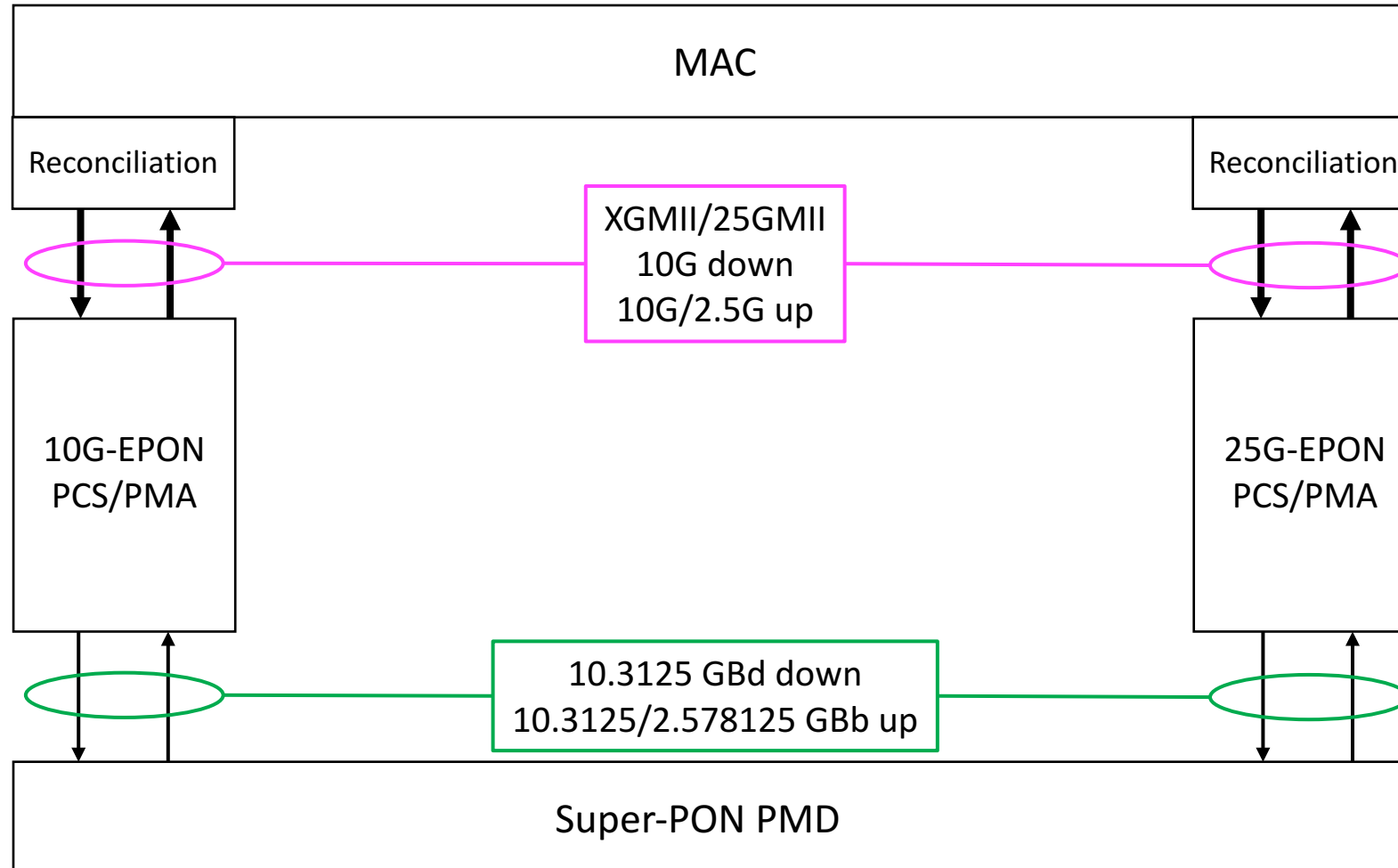
IEEE P802.3cs – November 12, 2019

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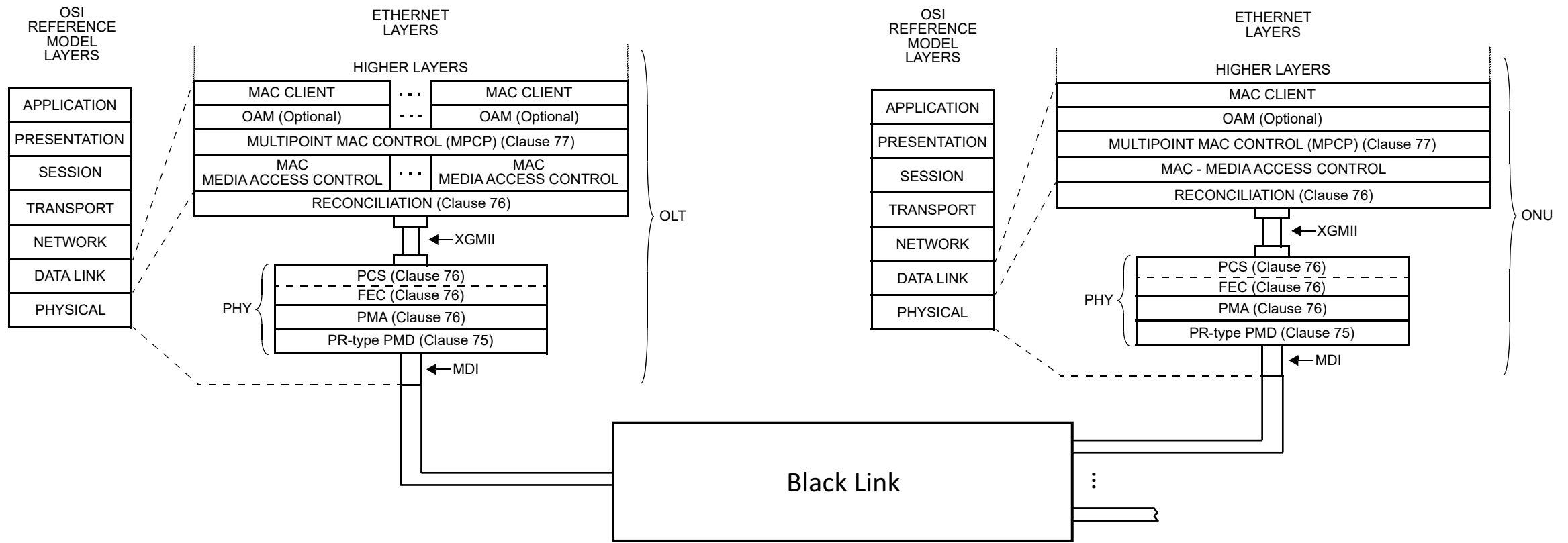
# Summary from Last Meeting

- Two PCS options are possible to support Super-PON:
  - Leverage the 10G-EPON PCS
  - Leverage the 25G-EPON PCS
- The changes to the discovery protocols are straightforward
- A proposal was made to base Super-PON on the 10G-EPON PCS and allow the option to leverage the improved margin of the 25G-EPON PCS for the 10G/10G symmetric mode of operation
  - The task force prefers to pick a single option

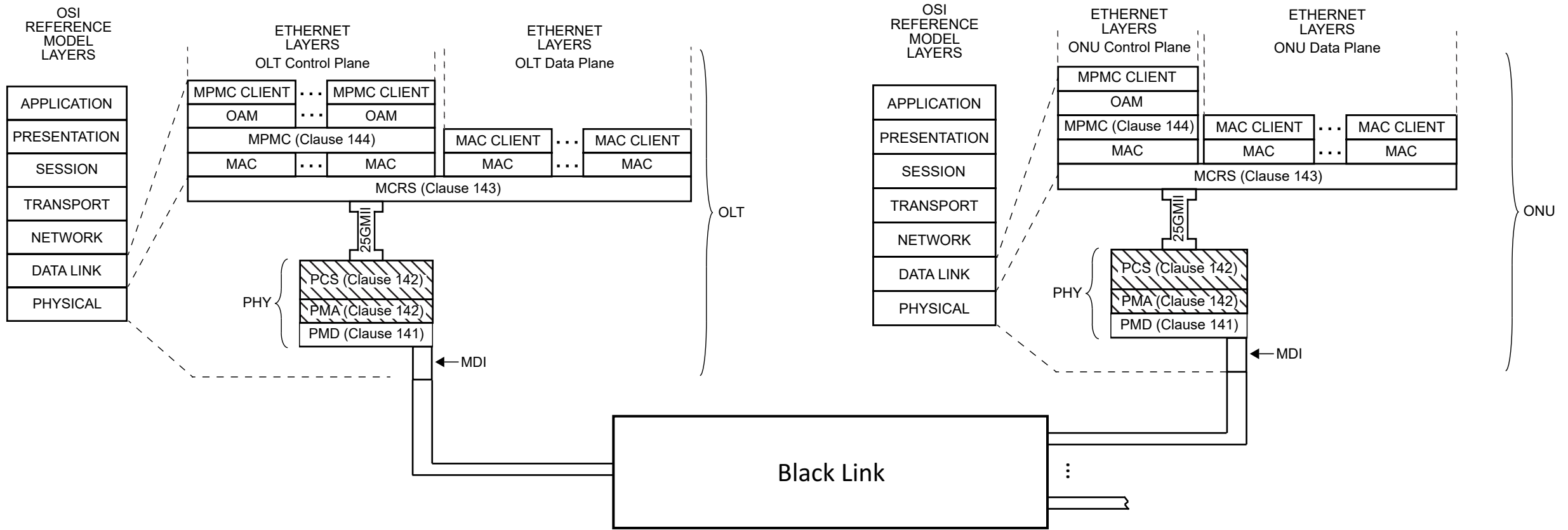
# PCS Options



# Super-PON PCS from 10G-EPON



# Super-PON PCS from 25G-EPON



# Options Comparison

Property	10G-EPON PCS	25G-EPON PCS
Implementation effort	<ul style="list-style-type: none"> <li>- Existing implementations are able to support the 10G/10G symmetric mode of operation with just discovery updates</li> <li>- A silicon respin may be required to support the 2.5G upstream speed</li> </ul>	<ul style="list-style-type: none"> <li>- No commercial implementations available yet</li> <li>- Silicon updates required to support both the 10G downstream speed and the 2.5G upstream speed</li> </ul>
FEC	<ul style="list-style-type: none"> <li>- Same FEC of XGS-PON</li> <li>- Straightforward sharing of PMDs between IEEE P802.3cs and ITU-T G.9807.3</li> <li>- Tighter link budget</li> </ul>	<ul style="list-style-type: none"> <li>- Improved FEC (1 to 2 dB more margin)</li> <li>- Helps to close the link budget</li> <li>- An IEEE P802.3cs PMD might not work as well with ITU-T G.9807.3</li> </ul>
Framing	<ul style="list-style-type: none"> <li>- Frame based (no fragmentation)</li> </ul>	<ul style="list-style-type: none"> <li>- Envelope based (supports fragmentation)</li> </ul>
Encoding/bandwidth	<ul style="list-style-type: none"> <li>- 64B/66B based</li> </ul>	<ul style="list-style-type: none"> <li>- 256B/257B based</li> <li>- Same effective bandwidth (the more efficient encoding compensates the additional FEC overhead)</li> </ul>
Identifiers	<ul style="list-style-type: none"> <li>- LLIDs</li> </ul>	<ul style="list-style-type: none"> <li>- LLIDs, MLIDs, ULIDs, PLIDs</li> </ul>

# Comments?

Thank you!