Ultra-Low Latency Optical Bus Platform

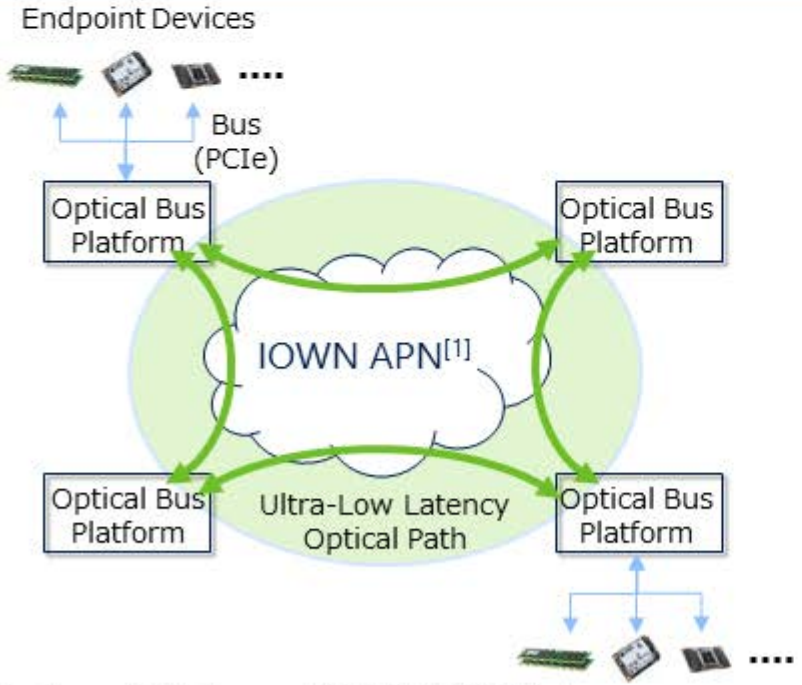
NTT

■ Our goal

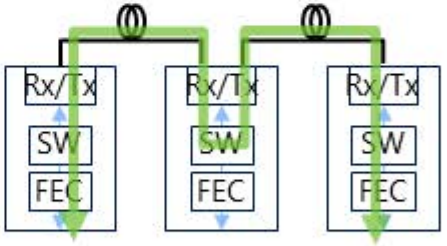
An optical bus platform providing ultra-low latency optical paths for burst short traffic, e.g. commands and control signals, between remote devices across several tens of kilometers, and which will suppress network latency increases to 1% or less of light propagation

■ Our approaches

- **Directly optical conversion of bus signals to simplify the layer structure**
- **Optimized forward error correction (FEC) separated from transmission frames to minimize signal processing**
- **Transaction layer packets (TLPs) set to the same length as fixed short size physical layer packets (PLPs) to minimize packet processing and buffering in switches (SWs)**

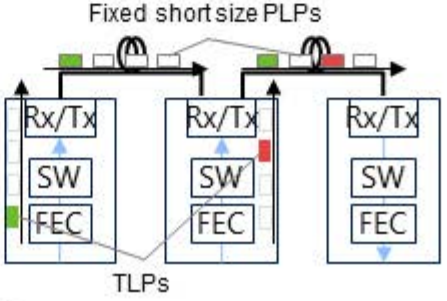


- **Optimized FEC separated from transmission frames**



Separation of FEC from transmission frames enables the FEC signal processing to be optimized to the distance, and the intermediate FEC to be skipped.

- **TLP set to the same length as fixed size short PLP**



Burst traffic TLPs are set to the same length as fixed short size PLPs to minimize packet processing and buffering in SWs.

[1] https://www.rd.ntt/e/research/JN202008_5963.html