

Technical Feasibility

10Gb/s PHY for EPON
IEEE 802.3 Study Group



Bin Yeong Yoon, ETRI
Howard Frazier, Broadcom
Dong-Soo Lee, ETRI
Hark Yoo, ETRI
Ryan Hirth, Teknovus

IT R&D Global Leader

ETRI

Technical Feasibility

- a) **Demonstrated system feasibility**
- b) **Proven technology, reasonable testing**
- c) **Confidence in reliability**

- ❑ Presentations made to the 10Gbps PHY for EPON Study Group illustrate the technical feasibility of 10Gbps EPON system. The 10Gbps EPON prototype system was implemented by adding the 10Gb/s EPON PHY to otherwise unchanged 802.3ah-compliant devices. Two options supporting 10Gb/s EPON PHY were studied: asymmetric (10Gbps downstream/ 1Gbps upstream) mode and symmetric (10Gbps downstream/ 10Gbps upstream) mode.
- ❑ This project reuses the Ethernet point-to-multipoint and point-to-point technologies that proved to be stable and credible. The only new technology to be utilized in the realization of the 10Gbps EPON PHY is a 10Gb/s burst mode interface. The reasonable throughput and latency for the 10Gb/s burst mode interface was demonstrated by using the continuous mode optics available for 10Gb/s point-to-point Ethernet devices. This study group will develop the specifications of the 10Gbps EPON PHY, considering the performances of the 10Gb/s burst mode interface and the compatibility with the 802.3 standards. The testing is expected to be straightforward, based on experience gained from testing of 1Gb/s EPON and 10Gb/s point-to-point products.
- ❑ This study group has received contributions from PHY and system vendors; end users; and industry/academic experts. The 1Gb/s point-to-multipoint and 10Gb/s point-to-point technologies are mature and reliability data exists which provides a high level of confidence in reliability of 10Gb/s EPON systems.

Motion

☐ Approve response to Technical Feasibility Criteria as shown in 5crit_tech_1_0506.pdf on page 2.

- Moved:
- Seconded:

- Y:
- N:
- A: