Ahmed Helmy

Taking Turns with Adaptive Cycle Time

Decentralized Media Access for Long-Reach Passive Optical Networks

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Taking Turns with Adaptive Cycle Time: Decentralized Media Access for Long-Reach Passive Optical Networks

The extended network spans of next generation long-reach passive optical networks (LR-PONs) result in extremely long propagation delays that severely degrade the performance of presently adopted upstream bandwidth-allocation algorithms. Through comprehensive simulation, the performance of the decentralized scheme is usually evaluated on the other hand with centralized schemes. This makes the upstream bandwidth-allocation performance independent of the network reach and allows sooner transmission of upstream packets. This reserve addresses this issue by proposing decentralized media gain access to for these emerging systems, allowing the network devices to communicate with one another and consider turns accessing the upstream channel. The book also reviews a few of the main contributions in this field, and studies many difficulties facing the decentralized scheme. It is because these algorithms are based on bandwidth negotiation messages, regularly exchanged between the central workplace and distant network devices, which become seriously delayed when the network can be possibly extended to a huge selection of kilometers. In addition, various improvement methods are explored and additional research factors are highlighted.