Dynamic Bandwidth Allocation with High Utilization for XG-PON

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Abstract— **In this paper, we propose a dynamic bandwidth allocation with high utilization (DBAHU) algorithm in order to utilize the unused bandwidth of a service class. DBAHU is based on a simple and feasible dynamic bandwidth allocation (SFDBA) algorithm. Like SFDBA, DBAHU uses a common available byte counter and a common down counter for multiple queues of a service class. However, to utilize the unused bandwidth of a service class, an available byte counter can be negative unlike SFDBA. Also, the unused remainder of an available byte counter of a service class is added to available byte counters of other service classes who require more bandwidth. Using simulations, we show that DBAHU is superior to SFDBA in mean delay and frame delay variance.**

Keyword— **Passive Optical Network, Dynamic Bandwidth Allocation, XGPON.**

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