

## ABSTRACT

IEEE 802.16 network or well-known as WiMAX is a wireless-based access network system with broadband capability. Designed to accommodate various kind of data traffic through certain Quality of Service (QoS) assurance mechanism. One of the important component in QoS assurance is bandwidth allocation and scheduling mechanism. It doesn't clearly defined in the standard and become specific feature from it's manufacture. A good bandwidth allocation and scheduling mechanism will be able to give different treatment to data traffics according to their priority, giving fair treatment among traffics, and able to maintain real-time traffic in good quality.

On this Thesis, we propose an allocation and scheduling mechanism which we hope capable to fulfill those requirements. The mechanism proposed are based on maximum-minimum fair allocation, combined with weighted fair queuing (WFQ) and priority queuing (PQ).

Through series of simulation and test, the result shows that the system has fulfill some of the requirement stated, but it still short of fairness and lack of guarantee for real-time critical traffics.

**Keyword** : IEEE 802.16, QoS, bandwidth allocation, WFQ, PQ, Maximum-Minimum Fair Criterion.