Resource Allocation Scheme For IEEE802.16 Networks

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Abstract : IEEE Standard 802.16 provides QoS (Quality of Service) for the applications such as Voice over IP, video streaming and high bandwidth file transfer. With the ability of broadband wireless access of an IEEE 802.16 system, a WiMAX TDD frame contains one downlink subframe and one uplink subframe. The capacity allocated to each subframe is a system parameter that should be determined based on the expected traffic conditions. a proper resource allocation scheme for packet transmissions is imperatively needed. In this paper, we present a new resource allocation scheme, called additional bandwidth yielding (ABY), to improve transmission efficiency of an IEEE 802.16-based network. Our proposed scheme can be adopted along with the existing scheduling algorithms and the multi-priority scheme without any change. The experimental results show that by using our ABY, the packet queuing delay could be significantly improved, especially for the service flows of higher-priority classes.

Keywords : IEEE 802.16, WiMAX, OFDMA, resource allocation, uplink-downlink mapping
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