Dual Feedback Architecture with UL Connector for Achieving Efficient Bandwidth Allocation in WiMAX Networks


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Abstract

WiMAX (Worldwide Interoperability for Microwave Access) has been developed with advantages such as high transmission rate and predefined quality of service (QoS) framework, enabling efficient and scalable networks for data, video and voice. WiMAX networks were expected to be the main Broadband Wireless Access (BWA) technology that provided several services such as data, voice, and video services including different classes of Quality of Services (QoS), which in turn were defined by IEEE 802. 16 standard. Scheduling in WiMAX became one of the most challenging issues, since it was responsible for distributing available resources of the network among all users; this leaded to the demand of constructing and
designing high efficient scheduling algorithms in order to improve the network utilization, to increase the network throughput, and to minimize the end-to-end delay. In this paper, we have presented Quality of Service architecture for Base Station that fully utilizes the available bandwidth that is left unused or wasted. For different service classes combined approach of UL connector is proposed. The proposed system is designed to be completely dynamic that ensures good bandwidth utilization, maintain the fairness between users and respond to the constraints of some applications (i.e. video, voice).

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