Abstract

In order to support different types of multimedia applications, the IEEE 802.16 standard defines different service classes with their associated Quality of Service (QoS) parameters. The scheduling algorithm is the crucial point in QoS provisioning over such broadband wireless access (BWA) network and it is important that the scheduling algorithm have a multi-dimensional objective of satisfying QoS requirements of the users, maximizing system utilization and ensuring fairness among users. In this paper, a dynamic priority resource-allocation (DPRA) scheme is proposed for uplinks in IEEE 802.16 wireless communication systems. The DPRA scheme dynamically gives priority values to four types of
service traffic based on their urgency degrees and allocates system radio resources according to their priority values. It can maximize the system throughput and satisfy differentiated quality-of-service (QoS) requirements. Simulation results show that the proposed DPRA scheme performs very close to the optimal method, which is by exhaustive search in system throughput, and it outperforms the conventional efficient and fair scheduling (EFS) algorithm in the performance measures such as system throughput, delay, packet loss.

References

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