Adaptive Q-aware Scheduling Algorithm for Multi-Service Flows in 802.16j Networks

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Authors:

Rama Reddy T., Satya Prasad R., Prasad Reddy, Pallamsetty S.

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Abstract

The IEEE 802.16j standard defines Mobile Multi-hop Relay Wireless Cellular Networks. Introduction of Relays in WiMAX networks pose new challenges along with the advantages of High Throughput and Improved Coverage Area. Thus Scheduling plays a crucial role in Mobile Multi-hop Relay(MMR) Wireless Networks. The Queue aware scheduling algorithm [1] maximizes the throughput by considering Queues at Base Station(BS) and Relay Station(RS) as well along with Concurrent Transmission Technique. In Queue aware scheduling, as all the arrived packets are queued up in FCFS manner, the high priority packets are obviously delayed. In this paper, QOS guarantee is incorporated by considering multiple Queues for different service flows at Base Station for Queue aware scheduling algorithm. Real Time Adaptive Scheme (RTAS) [2] is modified to improve throughput and used for picking the packets from service class sub queues(SCSQ) to include them in BS input queue. The results show that high priority packets are given proper importance while considering low priority packets as well. Throughput is also increased because of Modified RTAS and Concurrent Transmission
Technique of Queue aware scheduling.

References

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Index Terms

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Keywords

IEEE 802.16j, Base Station, Mobile Stations, Relay Stations, QOS, RTAS, MRTAS, Packet Delay