

Constructing routing tree centralized scheduling using multi-channel system in 802.16

ABSTRACT

The IEEE 802.16 standard defines WiMax (worldwide interoperability for microwave access) mesh network, using the base station (BS) as a coordinator for centralized scheduling. This paper proposes a centralized scheduling algorithm by constructing routing tree in WiMax mesh network, which introduces the cross-layer concept between the media access controller (MAC) and the network layers. The interference, hop-count, spatial reuse and quality of services (QoS) guarantee are considered. In our scheme, each node has one transceiver and can be tuned between multiple channels, intending to eliminate the secondary interference. The result of analysis shows this algorithm greatly improves the length of scheduling, channel utilization ratio (CUR) and average transmission scheduling.

Keyword: 802.16; Routing tree; Scheduling; Multi-channel