

Abstract

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Optimized Dual Uplink and Downlink Resource Allocation for Multiple Class of Service in OFDM Network

—The major challenge in the wireless communication networks is the efficient utilization of the limited resources while maintaining the target quality of service (QoS). In this paper we propose a new algorithm for joint uplink and downlink resource allocation in an OFDM wireless network. In the new algorithm we take both best effort and real traffic classes of service into consideration. The total utility function formulated takes into account both channel quality as well as time delay experienced in both directions. The formulated non-convex problem is solved using dual optimization techniques. The simulation results obtained demonstrate the effectiveness of the proposed joint uplink and downlink allocation scheme.