

This thesis aims at quality of service provisioning mechanisms in wireless packet networks. The main target of the work is multiple hops wireless networks area in which the problem is more general than in access

networks. Theoretical part of the thesis analyses the problem and shows detailed insight of possible solutions. Practical part of the thesis focuses on more specific problem. Impacts of using different particular

mechanisms on link and network layers are studied here, considering wireless mesh networks based on IEEE 802.11b technology (WiFi). Simulation model MeshQoS is designed on the basis of discrete simulation system

OMNeT++. Inside this model, there are implemented two routing protocols – AODV defined by IETF and newly proposed hybrid opportunistic protocol OMR (OpportunisticMesh Routing). Results of experiments with this model helps to get the notion of the level of quality of services achievable in particular mesh networks configurations. They also show the positive effects of using opportunistic routing principle. In most scenarios OMR provide much lower latency, higher delivery probability and higher throughput.