ABSTRACT

IP Multimedia Subsystem (IMS) is International standard released by Third Generation Partnership Project (3GPP) in the fifth release as control domain for multimedia services. IP Multimedia Subsystem (IMS) network can be used in core network for wireless network, such as wireless LAN with capable Quality of Service support. The necessity of QoS on IP Multimedia Subsystem (IMS) network is defined in a standard specified by 3GPP and is focused for QoS in backbone core network. One of them is MPLS technology.

Multi-Protocol Label Switching (MPLS) is a method of forwarding data through a network using information from the label attached to IP packet. There are some queueing mechanisms are used in the simulation such as Drop Tail (FIFO) queueing mechanism, Deficit Round Robin (DRR), and Random Early Detection (RED).

In this document, it will be analyzed the communication performance of Video Conference and Video on Demand in IP Multimedia Subsystem (IMS) network with user access network of Wireless LAN network which covers Quality of Service (QoS) parameters. They are throughput, delay, jitter, packet loss.

From the simulation, it is obtained that the best performance for video conference application using Random Early Detection (RED) queueing mechanism with 512 Kbps of bit rate are throughput 94.183399 Kbps, delay 116.8147 ms, jitter 44.988397 ms and packet loss 2.6206293 %. While for video on demand simulation, it is found that the best performance with Random Early Detection (RED) queuing mechanism are throughput 195.1415 Kbps, delay 48.18256 ms, jitter 13.74886 ms, packet loss 1.5195475%.