ABSTRACT

OpenBTS (Open Base Transceiver Station) and IP Multimedia Subsystem is a new technology at this time. OpenBTS is an open source implementation that enables mobile communication technology with GSM (Global System for Mobile Communication) is the cost is quite cheap compared to the price of BTS (Base Transceiver Station) that could reach billions of dollars, while the IP Multimedia Subsystem is a Next Generation Network technology that is able to provide services multiservice, where traditional technology began to migrate to this technology.

Research carried out aiming to implement and analyze of the system to be built. In the final project will be constructed network OpenBTS interconnected network of IP Multimedia Subsystem in order to communicate between the user OpenBTS with userIP Multimedia Subsystem especially for voice communication. On systems OpenBTS own use asterisk as softswitch, for IP Multimedia Subsystem use Open IMSCore as softswitch, and then can be analyzed performance and quality of voice services using Software TEMS Investigation for analysis of transmission on OpenBTS and Software Wireshark to measure QoS on service IPMultimedia Subsystem.

Of these implementations will be analyzed and tested with the transmission parameter such as RxLevel, RxQuality, Speech Quality Indicator as well as the QoS parameters of delay, jitter, packet loss, throughput for system interconnection between OpenBTS and IP Multimedia Subsystem for voice service. Looking at the results it can be concluded that the measurements for the transmission and QoS parameters of the interconnection standards are good. With the value of the average RxLevel in the range of-53.21dBm to -51.25dBm, RxQuality in the range of range 0 (BER <0.2%). As well as for its own QoS generate delay =<150ms, jitter=<50ms, packet loss=<15 %.

Keyword : *OpenBTS, Softswitch, Asterisk, IP Multimedia Subsystem, OpenIMSCore*