ABSTRACT

Voice over Internet Protocol (VoIP) is a technology that uses the Internet Protocol to provide voice communications electronically and in real-time. VoIP technology is a telecommunications technology which commonly used today, where the costs for the technology infrastructure is much cheaper than telecom technologies. VoIP Server can be implemented on an enterprise level, office, campus or housing, either through an Internet connection or via a local network.

In this final project, the author build VoIP server on a laptop using softswitch Elastix as a VoIP server and softphone X-Lite as an application so that the server and client are able to communicate using local network. The tools used in this study are a Laptop, PC, Wireless Router, Headphones and smartphone. VoIP implementations use only IPv4 server, the operating system used on the client is windows 7 and the system doesn't include security aspect.

System testing will be conducted at the end of progress, which includes server-client network interconnection 1 (PC) to client 2 (smartphone) test and measuring and testing of QoS (Quality of Service) to measure for packet loss, delay and throughput.

By using VoIP server, mobile devices are able to communicate to each other without cost, so it is proven that the usage of VoIP is efficiently reducing cost to minimum.

Keywords: VoIP *Server*, Elastix, Softphone, QoS (*Quality of Service*)