ABSTRACT

Development of internet has exponential quality into *IP based access network* that support many services and strive for a high of QoS *(Quality of Service)*. VoIP *(Voice over Internet Protocol)* technology is a solution that will change function of PSTN. Protocol in VoIP communication is growth from H.323 by ITU-T into SIP (*Session Initiation Protocol*) by IETF. Because of demand of great network, it need a protocol technique that secure QoS,i.e. RSVP (*Resource Reservation Protokol*).

In this final task, performance analysis of VoIP communication using SIP as *signal*ing protocol is done. Beside this, it uses RSVP protocol to look a reliability of QoS's increase. Performance's parameters that are used in this final task are *Delay*, *Jitter*, and *Packet Loss*.

Result that can be taken from RSVP application in VoIP SIP communication is signifier improvement of performance from *delay*, *jitter*, and *packet loss* than without using RSVP. *Delay* improvement in using *codec* G.711, dan G.729 are 39.8592901ms, 23.65566238ms. Beside this, value of packet loss that have been gotten, using RSVP can minimize its percentage ± 50 %. From simulation result, it can be look that resource reservation cause VoIP likes *connection oriented*.

Keyword : VoIP, SIP, RSVP, *Delay*, Jitter, Packet Loss.