ABSTRACT

One of the services on the internet that is bustling in use is a Closed Circuit Television (CCTV) based on Internet Protocol (IP). At the beginning of this CCTV network runs on a network system of Cable Television (CATV) and is one of the direct services provided by the CATV network itself. The system uses surveillance cameras placed at strategic locations with a monitoring system in each of these points. The development of CCTV technology that was originally used coaxial cable to the IP-based technology like no other today is that these services can be applied starting from the scope of local network/intranet to a vast Internet network.

Use of the Internet as a means of public networks also contain a security risk if we do not watch it properly. Internet network is open to the public so that issues of confidentiality and authentication of data sent is opened. One way to overcome this is to implement Virtual Private Network (VPN). VPN is a private network that can be used both in intranet and local network of public communication network, in this case the Internet, to enable some kind of tunneling protocol and security procedures.

This Final Task performed the comparative analysis of performance on the implementation of the VPN protocol in IP-based CCTV service. Protocols that compared for the performance quality are Internet Protocol Security (IPSec) and Secure Socket Layer (SSL). Analysis of quality in the network can be known through the process of adding background traffic on the VPN gateway, the addition of IP cameras, adding the number of active clients, and increase the codec bitrate of IP camera.

From the comparison of observations with the parameters of Quality of Service (QoS) in networks such as delay (one way delay), jitter, throughput, and packet loss can be seen that the use of SSL protocol to the VPN on IP CCTV service results lower quality values of performance compared with the IPSec protocol. This also occurs when configuring IP cameras using MJPEG or MPEG4 codecs. But overall, the value of these parameters are still eligible in international quality standards that have been set before.

***Keywords** : CCTV, VPN, IP, IPsec, SSL, QoS*