

## ABSTRACT

*The complexity of the network increases, according to the needs of the existing network. This inhibits the increase in network traffic. The bigger network, more devices and many configuration processes are needed.*

*Software Defined Network (SDN) is a new concept in computer networks where the network control function (control plane) is separated from the data forwarding function (data plane) that was previously in the conventional network control plane function and the data plane function are still in the same device. In the SDN network architecture, network control is centralized, the control is carried out by a piece of software called Controller. Open shortest path first (OSPF) is a routing protocol that has the ability to adapt to changes in network schemes / topology quickly in a large network. The concept is in line with network architecture that is programmable such as SDN.*

*This final project simulates Software Defined Network with OSPF Routing Protocol and POX is performed as a Controller on the network topology of the Institut Teknologi Telkom Purwokerto, as well as analyzing its performance in terms of QoS parameters. OSPF protocol simulations can be performed on SDN networks with the results of measurements of throughput, delay and packet loss are still at the value that becomes the standard ITU-T G.1010 with background traffic flowing 25 Mbps to 100Mbps. Value of the jitter parameter only meets the ITU-T G1010 standard when background traffic is flowed at 25 Mbps.*

*Keywords: Software Defined Network, OSPF, Background Traffic, QoS.*