

## ABSTRACT

Realization of LAN network infrastruktur is uneasy, because we need to install the wire through the ceiling and drill the wall. Because of that we needs another LAN technology that easy to installed. PLC is another way to solve this problem, because it just using existing electrical wire, and had cover each room or building so we do not need to build new wire. This technology is very suitable to be impelemented in building that have a lot of floor because it can reach to another floor as long as there is still wire conected each floor.

ITTELKOM had a lot of building. Nowadays the technology that have been implemented were Wireless LAN and UTP LAN. But there are still lack with both technology, that are the signal of Wireless LAN cannot penetrate to the wall, and UTP LAN need more wire for a long distance so affect bigger investation cost. That's why in this Final Task will be discuss about the designing of LAN PLC network for ITTELKOM, as another easier alternative without need new wire.

The result of simulation and designing can be take as Qos parameter. From the simulation there is throughput which can give ITTELKOM user need(60Mbps) that is 97 Mbps. The biggest delay is 11,881 ms (Standard ITU-T 0-150 ms), packetloss 2,218% (standard packetloss requirement maksimal 5%). Thus the designing result is deserve to be implemneted in ITTELKOM.