

ABSTRACTS

Internet Service has become basic necessity for many segments, especially in urban areas, from year to year community have been using internet as communication tool for everyday. Internet access has high speed, practice, and cheap is demand that must be available by business agents in telecommunication world. This is what forms emergence of new technologies; one of them is PLC (Power Line Communications). *Power Line* is one of telecommunication network alternatives using electricity power network as medium for data transmission. Communication network using electrical channel network is called *Power Line Communication (PLC)*.

Service types are offered by PLC is high-speed internet service such as telephony (VoIP), portal, streaming, gaming; kWh Meter Recording Service (Automatics Meter Reading), PLN Billing Information Service and PLN Information Service.

In its implementation, PLC network must be considering the existing electrical cable network as its medium. Network topology for one area will be different from another area. There are some parameters that are used in topology decision, such as: PLC Equipment radius, subscriber spreading, and subscriber settlement types. Nowadays, PLC technology only can be used in incompact housing and low voltage. For compact housing, PLC technology can be implemented because accepted quality by subscriber is very low cause of big loss. In this final examination, we will concentrate for PLC access network planning, that is different from another technology system. PLC access network is beginning from Contractor Unit (Cu), Repeater (Rp) and Network Terminal (Nt). For access network planning, we take North Bandung Area as sample. Electrical network in North Bandung is divided for 15 areas and is specialized only one area (B area) as subject. North Bandung Area is urban area consists of housing, business, industrial, hotel affairs, and office affair, so PLC technology development have big enough prospect.

In this final examination, E1 (PCM-30) is used as dimension to forecast number of subscriber. E1 is digital transmission format for Europe, carrier signal E1 is 2 Mbps (32 channels for 64 Kbps, with 2 channels for signaling and synchronization).

Besides of technical analysis, we carry out market analysis is important part in network planning.