ABSTRACT

The title of the Final Task is The Planning of TELKOMVIP Service Over Hybrid Fiber Coax (HFC) Network. The purpose is to plan and introduce HFC Network that can transfer TELKOMVIP service (*video, internet*, and *telephony*) to result an optimal network planning, have remarkable technical quality, and can be responsible. This Final Task consist of 5 chapter, and take place at Graha Sarana Duta Jakarta as an object of planning and processed with studying literature and field observation.

To increase services to customers as their demand of video, internet, and telephony access services, telecommunication operators are prosecuted to give their best services. Hence they needed such kind of planning in order that the existing HFC network can be used to transfer video, internet, and telephony access services. TELKOMVIP service and HFC network will be discussed at chapter II.

At chapter III is discussed about the method of planning an HFC network for TELKOMVIP service. It explain about basic principles of HFC network planning, calculating demand at every boundary fiber node service, technical specification that required, quality of service, and some requirement of HFC that regulated in Fundamental Technical Plan (FTP) TELKOM 2000.

Main topic of this Final Task discussed in Chapter IV, is about the planning of TELKOMVIP service over TELKOMVISION HFC network at Jakarta exactly at Graha Sarana Duta. At this chapter discussed about the planning of HFC network that refer to technical and business policy that already written in Grand Scenario and Business Plan of Probis Cable TV TELKOM. In this planning, first must know about general network data (such as demand, penetration level of services or system, homepassed, headend, fiber node, distribution hub, etc.) until the existing network. Thus performance of HFC network at some point which already chosen at fiber optic network or coaxial network to know the quality of planning which have held and also Bill of Quantity. Afterward calculate how, in order that this service can transfer over the HFC network with good performance and can be accepted by the custumers.

The conclusion and suggestion are given at chapter V. Some conclusion that can be given is the capacity (homepassed) per fiber node from an HFC network determined

by the upstream bandwidth that provided from HFC frequency spectrum, penetration intreactice service level and Quality of Service.

The result of input signal level in planning an HFC network at Kebon Jeruk - Graha Sarana Duta, for input signal level Distribution Hub = 5,35 dBm, input signal level Fiber Node = -0,93 dBm s/d 7,07 dBm. Both of the result have completed the TELKOM standard, for input signal level Distribution Hub >0 dBm, and input signal level Fiber Node –4 dBm s/d 4 dBm. Performance of coaxial network at Graha Sarana Duta (CNR, CSO, dan CTB) that obtained from two amplifier measurement result are : Amplifier A : CNR_{A1} = 46.2 dB, CNR_{A2} = 49.1 dB, CNR_{A3} = 47.0 dB, CSO_A = 65.3 dB, CTB_A = 58.9 dBc; Amplifier B : CNR_{B1} = 45.9 dB, CNR_{B2} = 48.9 dB, CNR_{B3} = 46.9 dB, CSO_B = 65.3 dB, CTB_B = 58.9 dBc. All result still complete the TELKOM standard specification (CNR >45 dB, CSO >52 dB, CTB >54 dBc)

In this Final Task still I find many obstacles especially about data of interactive service demand that provided, hence one suggestion that I expect is important, is to take a detail survey to potential locations to get well known the potential and characteristic of interactive service demand so the planning parameter such as penetration of interactive service level and quality of service (that often describe with possible percentage of interactive customers that can access interactive service simultaneously) can be known exactly.