

## **ABSTRACT**

### **TELECOMMUNICATION NETWORK PLANNING USING OPTICAL FIBRE COMMUNICATION SYSTEM ON PALAP RING PROJECT – SUMATERA RING**

Sumatera Ring is one of the 7 ring that is planned by government in Palapa Ring project, which is started to build by government in early 2008. The purpose of Palapa Ring is to connect cities in Indonesia, from Sabang to Merauke, using optical fiber communication system, and shaped ring network. Optical fiber communication system used, considered that optical fiber has less attenuation. Besides, optical fiber also has wide bandwidth, so that in long term planning, optical fiber will be the main choice of long distance communication.

In this final task, Sumatera Ring is planned by using optical fiber communication system as a network backbone to connect the whole capital cities in Sumatera. Also, Sumatera Ring can fulfill the demand traffic in Sumatera.

In Sumatera Ring planning, STM-64 integrated with DWDM is used as the choice of SDH technology. Also, EDFA is needed in every sublink. Furthermore, DCF is used to compensate dispersion that caused by the distance in every sublink is more far than maximum distance limited to dispersion.