

ABSTRACT

Sumatera High Performance Back Bone (HPBB) is a fiber optic transmission system network extends on Sumatera Island. It generally uses DWDM technology with point to point configuration. Therefore, PT. TELKOM established a new fiber optic transmission system network called 'JASUKA Ring'. Appropriate to its name, it is established with ring configuration to connect Java, Sumatera, and Kalimantan Island. JASUKA Ring which extends on Sumatera Island uses the new and existing fiber optic. The existing fiber optic used the HPBB Sumatera.

This project is to plan transmission link of Padang-Batu Raja by using DWDM. This project will use element from HPBB Sumatera network which is not used effectively because of Ring JASUKA. In this plan, it will compare two types of optical fiber, SSMF and NZDSF. From that two kinds of optical fiber, it will be analyzed which optical fiber is more suitable to use in this planning. Besides, it will be analyzed non-linearity effect of DWDM usage.

From the analysis and the calculation, it can be concluded that NZDSF fiber is more suitable than SSMF fibre in this planning. From the final configuration of transmission network system for Padang-Batu Raja link, HPBB Sumatera network element which can be used is not enough yet to meet the specification required by this planning. So, new equipment is needed.