

## ABSTRACT

Life quality improvements recently are the urge in the increment of human needs in more sophisticated, fast, reliable, safer communication and information. In order to fulfill those needs, transmission system which has more reliability and capacity are demanded. Fiber optic, as one of many kinds transmission medium, has superiorities compared to other medium, it can be the exact alternative to overcome those demand.

Nowadays PT. Telkom Tbk is running business to keep expanding the High Performance Back Bone fiber optic transmission link allover Indonesia. HPBB T21 topology on Kalimantan and Sulawesi right now is point-to-point, so if a problem occurred on a single point, the overall link performance will be effected.

In this Final Task for Bachelor degree, the planning process of fiber optic sea cable transmission system for Sangatta (Kalimantan) – Towale (Sulawesi) is discussed in order to complete the Banjarmasin – Balikpapan – Samarinda Bontang – Sangatta (T21 Kalimantan ) existing backbone network, also Banjarmasin – Makassar (SKKKL S-U-B) become ring topology.

This planning is using Dense Wavelength Division Multiplexing technology (DWDM) which includes the determination of landing point location, sea cable route, link budget calculation, rise time budget and the selection of supporting device, so the effective and reliable performance network is expected to get.