

ABSTRACT

In some areas in Indonesia there are still many areas that fall into the scope of 3T, namely, Frontier, Outermost, and Disadvantaged. One of the areas included in the 3T area is the south coast of Java Island, especially the Sukabumi Regency area. One of the areas recommended by PT Witel Telkom Sukabumi and a concern for SKSO development is Mekarsakti Village, Ciemas District, Sukabumi Regency.

The solution used to overcome this problem is to build a fiber optic communication system network infrastructure. By designing the backbone cable from STO Jampang Kulon to the mini-OLT located in the beach area. Then, from this design, the FO distribution cable design is built, by pulling the FO cable from the mini-OLT to the ONT device located at the user. So that it can fulfill internet network access for the Mekarsakti Village community.

In the construction of fiber optic communication system network infrastructure, the author conducts interviews and performs calculations so that the design can be implemented. From the results of interviews with the Mekarsakti Village community with an age range of 15 - 40 years, can be seen that the interest of the Mekarsakti Village community in the development of internet network access is 97%. The results of the calculation of PLB, RTB, SNR, Q-Factor, and BER, from both Backbone and Distribution designs show results that do not exceed the standards set by PT Telkom Indonesia and ITU-T, PLB with results not exceeding the minimum limit of PT. Telkom Indonesia -28 dBm, RTB does not exceed the 70% NRZ limit, SNR does not exceed the limit specified by ITU-T ≥ 10.79 dB, the Q-Factor value is close to the idea value of 6 and the BER value that must be met in the range of 10^{-9} to 10^{-12} , so that with the results of these calculations both designs can be implemented.

Keywords: Mekarsakti Village, STO, mini-OLT, FO