

ABSTRACT

Currently, information and communication technology is experiencing rapid technological development. One of the technological developments that can be seen is Long Term Evolution (LTE) technology which can meet the needs of very fast information services and has a large bandwidth capacity. However, currently in Indonesia not all areas are reachable to get LTE services, for example the Kalimantan area to be precise in West Pontianak, East Pontianak and North Pontianak Districts. The implementation of LTE services is still not optimal because there are still several areas where LTE services have not been reached. Therefore, various actions are needed for the development of LTE networks in the surrounding area.

The purpose of this research is to design a Long Term Evolution Network using a frequency of 1800 Mhz. The parameters to be analyzed in this study include capacity and coverage design. Then simulated the design using Radio Planning Atoll software. This study aims to provide an overview of the site and take into account traffic users from the required network sites and will later focus on the sub-districts of West Pontianak, East Pontianak and North Pontianak.

The results of planning calculations and simulations required the number of sites required to be taken to 15 sites in West Pontianak, 11 sites in East Pontianak and 14 sites in North Pontianak. Floods form a signal quality saka as a result of capacity planning and coverage planning in West Pontianak District for an average RSRP of -60.08 dBm, an average SINR of 1.75 dB, and an average Throughput of 12.089 Mbps, East Pontianak kasedhiya . The average RSRP is -64.74dBm, the SINR is an average of 2.38 dB, and the average Throughput is 13.05 Mbps, and for North Pontianak the average RSRP is -66.9 dBm, the average SINR an average of 5.84 dB, and an average Throughput of 20.5 Mbps.

Keywords: LTE, Capacity Planning, Coverage Planning, West Pontianak District, East Pontianak District, North Pontianak District