

ABSTRACT

The development of telecommunications technology has undergone a significant transformation over time. In Indonesia, the era of 4G technology has seen the implementation of 4G LTE broadband networks in the 900 MHz and 1800 MHz frequency bands, accelerating the adoption of more advanced wireless technologies.

Today, 5G technology has become a major focus in telecommunications development, offering much higher data transmission speeds compared to previous generations. This technology uses millimeter waves to achieve throughput of more than 100 Mbps under high mobility conditions, and even more than 1 Gbps under low mobility conditions. As a packet-switched based wireless network, 5G offers wide coverage and high throughput, which makes it an important platform for future technological innovations.

In this final project, simulations will be carried out with 2 scenarios. Scenario I is to simulate the measurement of the specified parameters using a simcard network during the data download process. While Scenario II is to simulate the measurement of the specified parameters using the Telkomsel network during the data download process.

Based on the simulation results, it is known that in scenario I, the average value of SS-RSRP reaches -72.856 dBm with a throughput of 80.3 Mbps. Meanwhile, in scenario II, the average value of SS-RSRP was recorded at -86.58 dBm with a throughput of 153.55 Mbps. The throughput comparison results from scenario I simulations with 3GPP standards show a mismatch due to a significant difference. However, in the scenario II simulation, the throughput results are close to the 3GPP standard, so it can be concluded that the Baicells device used in the simulation refers to the 3GPP standard.

Keywords: 5G Open RAN, Throughput, 3GPP Standard.