

## **ABSTRACT**

*This research carried out 5G network planning using the 2.6 GHz frequency in Ngaliyan District, using Automatic Cell Planning with Atoll 3.4 software. Research focuses on SS-RSRP, SS-SINR parameters. Urban Macro Propagation. There are four scenarios in this research, where the largest number of sites are in the downlink scenario, both in Outdoor to Outdoor and Outdoor to Indoor conditions. The number of sites in scenario 1 is 36 sites, scenario 2 is 23 sites, scenario 3 is 40 sites, scenario 4 is 25 sites. Signal quality is not always influenced by the number of sites, if the number of sites does not match the area covered then interference and noise will occur. The simulation results from the four scenarios show a good average SS-RSRP in scenario 3 Downlink Outdoor to Indoor, and a good average SS-SINR in scenario 2 Uplink Outdoor to Outdoor. The average SS-RSRP in scenario 1 is -61.17 dBm, the average SS-SINR parameter is -1.66 dB. Scenario 2 the average SS-RSRP is -62.35 dBm, and for the average SS-SINR it is -0.22 dB. In scenario 3 the average SS-RSRP parameter is -60.81 dBm, the average SS-SINR is -1.88 dB. In scenario 4 the average value for the SS-RSRP parameter produces -62.28 dBm, and the average value for the SS-SINR parameter is -0.64 dB.*

**Keywords : 5G NR, COVERAGE PLANNING, SS-RSRP, SS-SINR.**