ABSTRACT

Sidoarjo Regency, with its diverse industrial sectors and more than 961 companies, has become a focal point in the demand for advanced technological infrastructure, especially internet networks, to support production activities. In the era of the Fourth Industrial Revolution, 5G technology is considered a primary platform to support industrial automation and the integration of smarter production systems, with a focus on broad connectivity and applications across various fields including manufacturing, warehousing, and logistics. The implementation of 5G NR networks in the industrial areas of Sidoarjo Regency, particularly utilizing the 700 MHz frequency, is a crucial step in supporting the vision of smart factories and enhancing production efficiency. Throughput analysis indicates favorable results with an average value of 1723.83014 mbps, showcasing optimal access with 100% coverage of the area. Additionally, SS-RSRP and SS-SINR demonstrate satisfactory performance with average values of -48.42 dBm and 73.05 dB respectively, covering the entire area comprehensively.

Keywords: *5G NR, 700 MHz Frequency, Industrial Area, Simulation Planning, Sidoarjo Regency*