

## **ABSTRACT**

*Surabaya is a large city as well as the capital of the East Java province. As the capital of the province, it is certain that there will be a large population, income sector, and technology needs that are growing rapidly. With a large population, the use of 5G networks will be increasingly needed in the future. 5G NR technology promises unprecedented speed and performance. However, to realize its potential, efficient frequency allocation and license fees are important.*

*This study will assess the license cost of frequency spectrum for 5G in Surabaya city with the frequency value of middle band 40 of 2.3 GHz. By using Top-Down calculation, OER is then evaluated for its effectiveness using the sensitivity analysis method. As a result, this research will provide new lb and lp values that are expected to be recommendations for licensing prices in the next few years.*

*From this research, the results obtained for coverage are 98 sites. While the results of the capacity are 1 educational site, 2 residential sites, 3 industrial sites and 6 sites for commercial. The results of the license fee calculation use 100 MHz bandwidth as the highest reference of the N40 band or 2.3 GHz at a price of Rp35,316,007.69 The results of the effectiveness analysis are based on the financial ability of PT Smartfren, Tbk to pay 14.5% of revenue and get the optimum point of the N40 band is 0.228 at 100 MHz bandwidth at a price of Rp1,689,875,679,153.13.*

**Keywords:** *5G NR, Licensee fee, sensitivity analysis*