

## ABSTRACT

*The Long Term Evolution (LTE) 4G network users have difficulty accessing internet services (browsing, chatting, streaming, video calls and others) when the TransJakarta busway is moving on the busway corridor 12 (Pluit – Tanjung Priok). The difficulty of accessing internet services is due to several factors such as weak signal connections, limited LTE network cell capacity and limited LTE coverage area which is of particular concern for LTE network providers.*

*In this Final Project uses microcell network with frequency 1800MHz that the bandwidth partition methode (frequency reuse-m) usage with factor on m:2 and m:3 as an alternative to improve signal quality in the TransJakarta busway corridor 12 (Pluit – Tanjung Priok) area.*

*Based on the results of planning and simulation to improve signal quality (RSRP) and the approved area on corridor 12 (Pluit – Tanjung Priok), the total microcell needs 9 (nine) sites with a problematic number of halte to halte totalling 7 (seven) lines. The simulation results of the 7 (seven) troubled pathways have RSRP values that have met the target KPI with an average value  $RSRP \geq -90$  dBm and  $RSRP \geq -105$  dBm covering 100% area. Except for the bus stop Sunter Karya – Sunter Boulevard Barat covers 89 % of the area. SINR average value  $\geq 5$  dB covers 100 % area and throughput  $\geq 20.000$  Kbps covers 100 % area. The results of the use of bandwidth partition on line the Sunter SMP 140 – Sunter Karya – Sunter Boulevard Barat – Sunter Kelapa Gading has a average SINR value of 30,12 dB and temporarily without using a bandwidth partition of 17,41 dB.*

**Key Word** : Microcell, LTE 1800MHz, Busway TransJakarta, Reuse 3 Coverage, Capacity.