ABSTRACT

The surge of smartphone users who need to access real-time data to make some

NodeB someday will experience overload, forcing service providers to expand their

networks. The expansion of the network to cope with this problem, one of which is to

implement 2nd carrier in each sector on nodeB. 2nd carrier implementation of the

simulation analysis on UMTS / HSDPA on the research carried out on one of the network

operators in Indonesia, PT. XL Axiata TBK used to increase the area of coverage and

quality of a nodeB throughput.

In this thesis, an analysis of existing areas followed by some sort *NodeB* which

have high utilization by looking at the parameters of Power, Code, and Channel Element,

but without changing the parameters of the simulation tests performed on the expansion of

network planning software to implement 2nd carrier Atoll the NodeB that have high

utilization, and by using two scenarios for comparison.

From the analysis of the research that has been done, the value obtained from the

simulation coverage. There is no difference between scenarios I and II in terms of the

signal level as it uses the same power. From the simulation results obtained throughput for

voice service, the average value of DL / UL in the scenario I reach 373 kbps, while in the

second scenario reaches 363 kbps. Then, in the Mobile Internet Access service, the average

value of DL and UL in the first scenario is 2538 kbps and 423 kbps, while in the second

scenario reaches 3179 kbps and 529 kbps. This suggests that the second scenario is better

than the scenario I have in addition to throughput superior mobile internet access around

600kbps, more efficient use of power also because the sharing of the carrier.

Keywords: UMTS, HSDPA, utilization, expansion, NodeB, Power, Code, Channel Element.