ABSTARCT

The migration 4G to 5G networks is a development / advancement of the current

telecommunications technology. With the 4G network migration to 5G, several aspects of change

have show in its architecture. In the 4G network migration pattern to 5G the architecture are used is

EPC and 5G core where the development of the network is an update of the previous technology.

There are several configuration options for the network migration including options 3a and 7a where

these options have different cores, so it is necessary to know how the ideal values of each parameter

are generated. Both of these options are Non-Standalone (NSA) models.

In this research of final project, the comparison simulation conducted is to find out which is

the best of the two options at the time of simulation using simulink software. This comparison

analysis is done by designing the network architecture on NSA model options 3a and option 7a

by relying on the parameters set in Release 15 3GPP, so that when analyzing the comparison of

the two options it can help to find out how the quality of the 5G NSA network for options 3a and

7a when testing data.

Based on simulation analysis and comparison obtained from the simulation results is when

given a frequency value of 2300 MHz and 27500 MHz for each option, the value generated from

the simulink simulation is conform with the standard, for the results of the value of the SNR has

a good category that is> 10, 9 dB and both have the same value. Then the results of other

parameters such as jitter have shown results in the good category that is <75 ms and the best

value is 33 ms, while the delay and throughput in the very good category that is throughput has a

value> 100 bps and has the best value of 333.6 bps and delay <150 ms, the best result is 2.3 ms.

Keyword: Study of migration of 5G, EPC and 5G core networks, Non-standalone