

## ABSTRACT

LTE is a continuous evolution in mobile network standards defined by 3GPP (Third Generation Partnership Project) which is the development of third generation (3G). One of the most important objects to be investigated to maintain the continuity of the voice communication process that occurs in LTE which is called the handoff. Handoff is an important process in the process of moving voice communications as the user moves while there is a movement of traffic channels from one frequency to another frequency. Handoff process required an appropriate handoff algorithm with respect to some specific parameters in order to maintain the quality of voice communication.

This research was carried out by observing the handoff by making an example model that is analyzed using mathematical equations on the Handoff Margin (HOM) and Time to Trigger (TTT) parameters and visualized in the form of simulation on Handoff Margin (HOM) and Time to Trigger (TTT). TTT and HOM parameters are the outputs of each simulation while RSRP, speed and angle as the inputs. HOM was measured in decibels and defined as the minimum received power or quality between the candidate cell and the serving cell required for triggering Handoff. TTT was measured in seconds and defined as the minimum conditions of HOM from handoff to triggered.

This research has a goal to see Handoff process in LTE systems. In the simulations performed, it was found that the minimum value of RSRP in ENodeB was always constant in -96.236 dBm condition, if given the same speed. The best TTT value was in condition of RSRP = -98 db, because in these conditions had a value of fastest TTT and maximal velocity point in condition of 464 km/h and the value of  $-6^0$  and  $66^0$  were the limit of coverage area of ENodeB in the form of hexagonal cells.

Keywords: LTE, Handoff, Time to Trigger (TTT), Handoff Margin (HOM)