

ABSTRACT

LTE (Long Term Evolution) which is a 4G technology that is still in its infancy. In its progress need to be known for LTE network integrity in providing services with high mobility, so we need to discuss the handover process that occurs in LTE. Movement of the user in passing cell slices when the user moves to a different cell eNodeB require the radio channel relocation process. To support the success of the handover, overlap area is needed to support handover mechanisms which is changing a radio channel into the eNodeB with better signal power level so that the user not be in a poor received signal condition which can lead to communication breakdown and decrease the quality of network.

In this final project, had been researched the overlapping coverage necessity that required to support the process of handover for the user movement speed up to 120 km / hour by analyzing the handover parameter values such as Time To Trigger (TTT), Time Process (TP), and Handover Margin (HOM).

From the simulation results, can be seen that LTE guarantees handover proces up to user speed of 120 km / h on overlapping coverages ranging from 20 % to 70 % . Overlapping value 5 % coverage only supports a good handover process at speeds up to 60 km / h. Value overlapping coverage 10 % and 15 % only support a good handover process at speeds up to 90 km / h . TTT and TP values increased as the speed of the user in entering the cell slices . The fastest TTT and TP values occurs in overlapping coverage of 70 % which is from TTT = 0.029 s on the user velocity 120km/h up TTT = 0.707 s on the user velocity and range 5km/h TP = 0.169 s on the user velocity 120km/h to TP = 3.378 s on the user velocity 5km/h. With the increasing value of overlapping coverage increased the margin between the two signals with a range of 2,258 HOM dB - 2.893 dB (still within the standard range of 2 dB - 5 dB) that can speed up the process for handover decision can be seen from the declining value of TTT on pace each user and provide better conditions to support handover process because users will stay longer in achieving the minimum power level , can be seen from the increased value of TP .

Keywords : LTE, Handover, Overlapping coverage, TTT, TP, HOM