ABSTRACT

Device to Device communication has been proposed in LTE-Advanced as an important solution that enables to significantly increase the network throughput and reduce the traffic load in the core network. D2D communication can reuse cellular resource than use uplink and downlink resource via base station.

With the characteristic above, LTE-Advanced networks are being developed to provide mobile broadband services for the 4G cellular wireless systems. D2D is a promising technique to provide wireless peer-to-peer services and enhance spectrum utilization in the LTE-Advanced networks. However, D2D transmission can cause significant interference values on major cellular networks when sharing of radio resources between the two networks.

Such interference can be avoided by reducing the resource allocation approproately through the coordination of eNodeB. In this final task, the method used is running a simulation of resource allocation using round robin algorithm and heuristic algorithm. After that, comparing the results from both algorithms.

From the simulation results, heuristic algorithm has better average user throughput, fairness, and spectral efficiency compared to round robin algorithm. Using heuristic algorithm, average user throughput index is 3,28 Mbps compared by round robin algorithm average user throughput index is 2,8 Mbps.

Keywords: *D2D Underlaying LTE-Advanced, Resource allocation, heuristic, round robin*