

## **ABSTRACT**

Mobile telecommunications technology gradually evolved to support better services to users of telecommunication services. In the present era, mobile telecommunication services have a tendency toward convergence. This is in accordance with the demands of the telecommunications service users who want a variety of types of services that can be accessed in one particular platform. These users are also demanding better quality service. Convergence of these services requires the existence of a technology standard that can support it. 3GPP (3rd Generation Partnership Project) has released a mobile telecom technology standard called LTE (Long Term Evolution) is expected to accommodate the demands of customers so as to provide good quality service. To support this, LTE requires a mechanism that can support it. One is to apply the method of scheduling packets on each service. Packet scheduling is the unequal treatment of incoming packets according to the priorities of each scheduling algorithm.

At this final duty, conducted the research performance of LTE networks to support converged services by analyzing the value of QoS parameters such as throughput, delay, packet loss ratio (PLR), and fairness index (FI). To measure the QoS parameters, is carried out simulations based on the certain composition of mixed traffic between real time services (video, VoIP) and non-real time service (best effort) within using scheduling algorithm the log rule and the exponential rule in downlink direction.

The results of this final research showed that exponential rule algorithm is very well for giving throughput values to users when its compared with log rule. But exponential rule gave the delay values greater than log rule. For log rule, this algorithm gave the opposite result. Log rule gave users with smaller delay than exponential rule, but its throughput became lower than exponential rule. This indicates that both scheduling algorithms suitable for use on LTE networks within conditions of mixed traffic between real time and non-real time services. The usage of both scheduling algorithm can be adapted to the needs of traffic condition that needed.

Keywords: LTE, scheduling, QoS, log rule, exponential rule, mixed traffic