## ABSTRACT

*In the previous RAN architecture, namely on 2G, 3G and 4G networks, the concept used was the monolithic concept. In its implementation, the monolithic concept applies several interactions between logistics nodes that occur in one unit. This makes the performance of the unit so heavy. Since the advent of New Radio (NR) studies on 5G networks, it is felt that the separation of gNodeB (node logistics NR) between Central Units (CU) and Distributed Units (DU) will bring flexibility. For the flexibility of a network, what is done includes the division of tasks in each unit so that the unit focuses on the work given. Therefore, this study will evaluate the design of the RAN system with the separation method between the central unit (CU) and distribution unit (DU) which will be implemented for the 5G Standalone network using OpenAirInterface by deploying the network using the containerization method.*

*The author simulates both the monolithic concept and the concept of CU/DU separation on a standalone 5G network that is deployed to a local host. After doing the simulation, the writer evaluates it by analyzing and identifying the Quality of Service of the deployed network by looking at the impact generated from the network. Quality of Services parameters measured are throughput, packet loss, delay, and jitter.*

*The results of this final project show that the CU/DU separation concept used in the 5G OpenAirInterface network produces 25,51% greater throughput when compared to the monolithic concept. The CU/DU concept is proven to be more efficient in performing downlinks compared to the monolithic concept. The results of throughput, delay and jitter on the CU/DU concept are better than the monolithic concept.*


*Keywords: CU/DU, 5G Network, Containerization, Quality of Service, RAN.*