

## **ABSTRACT**

Based on existing condition of the operators suggests that the capacity from the network of several operators have not been utilized optimally. The number of available capacity and allows the presence of unused new operators to provide a mobile communication service without the need to have their own radio spectrum nor infrastructure. Therefore, the proposed MVNO as technical and business models in increased revenue share for existing operators in the telecommunications business in the future.

To optimize existing condition of the operator network capacity exists, so in this paper proposed a network architecture for operators existing the sharing network with a new operator, which can improve network QoS for both existing operators and new operators network. Therefore, the proposed network configuration is sharing the network is not only in the core network but also on the sub-core network routing algorithm which uses a combination of algorithms in the sub-core EIGRP and OSPF network in the core network.

From the test results to a proposed new network configuration obtained improved QoS. Using OSPF algorithms to be increase throughput, decrease delay and packet loss is 8%, 13% and 9%, from the benchmark. To use

the EIGRP algorithm increase throughput, decrease delay and packet loss is 13%, 16%, and 40% from the benchmark. As for the combination algorithm OSPF\_EIGRP an increase in throughput, delay and packet loss decreased is 26%, 5% and 8% from the benchmark. For combination algorithm EIGRP\_OSPF increase throughput, decrease delay and packet loss is 21%, 19% and 22% from the benchmark. From the test results the authors proposed the use of combination OSPF\_EIGRP algorithms for sharing network at the core network and subcore network.

Keywords: *benchmarks, core network, EIGRP, OSPF, MVNO*