ABSTRACT

As a disaster that triggers the occurrence of tsunami, earthquake is a natural disaster that can be as a predictable arrival disaster through some equipment under the control of the Meteorology, Climatology and Geophysics Agency. Magnitude of the damage caused by tsunami can often cause damage to the telecommunication network infrastructure. Integration of the existing equipment that serves to detect the arrival of the earthquake is the basis for developing communication systems that can connect the relevant agencies in order to minimize the number of losses and casualties.

Ad hoc network is a wireless network system that does not require a fixed network infrastructure. MANET or mobile Ad hoc network is a distributed system consisting of several mobile nodes that can communicate each other through radio communication system in a certain transmission range. Node movement on MANET causes the proccess of creating and terminating link among some nodes becomes unstable. Therefore, we need a routing protocol that can manage path selection of data transmission on MANET. This final task analyzed one of MANET routing protocol called protocol for unified multicasting trough announcement (PUMA) by using Network Simulator 2. Scenarios performed in this study include simulation of the number of node changes, wide area of node displacement and variating simulation time. Simulation results are reviewed with several parameters of Quality of Service: packet delivery ratio (PDR), throughput, and delay.

The result of the analysis shows that in the increasing number of node scenarios, more number of nodes causes the increase of throughput and the decrease of PDR and delay. In the test scenario of node displacement area, larger simulation area causes an increase in the three parameter value of the measurement. While in testing the node displacement speed scenario, the faster the movement of the node causes a decrease in the three parameter value of the measurement.

Keywords** : **Ad hoc, MANET, PUMA, QoS, PDR, throughput, delay.