

ABSTRACT

Disaster recovery network (DRN) services are needed to minimize the number of victims and facilitate the evacuation since the network helps to spread information faster and accurate. This thesis conduct perform initial study for routing algorithm of mobile cognitive radio base station (MCRBS) in DRN. To achieve maximum performance, MCRBS requires a routing algorithm by connecting several devices being active during a disaster as helpers by considering the distance and receive signal power level of each device. MCRBS routing is designed to choose the shortest (indicated by the strong signal strength) and the reliable (indicated by the low bit-error-rate (BER) routes).

To achieve maximum performances, this thesis uses routing algorithm based on threshold parameter optimized that maximize number of routes and minimum BER. For successful real field implementation, the node position is assumed to be randomly located and simulated using the computer simulations.

The result of this thesis are on the possible routes number obtained from threshold power and required BER. These result are expected to be the reference of future development of routing, for example, involving aeronautics system such as drone to make the DRN extend able.

Words: Routing, Mobile Cognitive Radio Base Station, Threshold, Pathloss Exponent, Bit Error Rate (BER), Disaster Recovery Network.