







## 5. Conclusion

A method that easily assigns a few nodes as candidate gateways that are on the routing path between the selected basic nodes can be implemented. Evaluation of throughput for each candidate node can be done and then the node with maximizing the system throughput is selected as the gateway. This reduces the need for solving a complex optimization problem which includes a large number of parameters and involves heavy computation load.

## References

- [1] Wei Liu; Nishiyama, H.; Kato, N.; Shimizu, Y.; Kumagai, T., "A novel gateway selection method to maximize the system throughput of Wireless Mesh Network deployed in disaster areas," Personal Indoor and Mobile Radio Communications (PIMRC), 2012 IEEE 23rd International Symposium on , vol., no., pp.771,776, 9-12 Sept. 2012.
- [2] I. F. Akyildiz, X. Wang, and W. Wang, "Wireless mesh networks: a survey," *Comput. Netw. ISDN Syst.*, vol. 47, no. 4, pp. 445-487, 2005.
- [3] P. H. Pathak and R. Dutta, "A survey of network design problems and joint design approaches in wireless mesh networks," *IEEE Communications surveys & tutorials*, vol. 13, no. 3, Third Quarter 2011.
- [4] PanuAvakul, Hiroki Nishiyama, Nei Kato, Toshikazu Sakano, and Atsushi Takahara, "A Performance Evaluation of Multiple MDRUs Based Wireless Mesh Networks," *IEEE 79th Vehicular Technology Conference (VTC 2014 Spring)*, Seoul, Korea, May 2014.
- [5] Quang Tran Minh; Kien Nguyen; Borcea, C.; Yamada, S., "On-the-fly establishment of multihop wireless access networks for disaster recovery," *Communications Magazine, IEEE* , vol.52, no.10, pp.60,66, October 2014.
- [6] J. Jun and M. Sichitiu, "The nominal capacity of wireless mesh networks," *IEEE Wireless Communications.*, vol. 10, no. 5, pp. 8-14, Oct. 2003.
- [7] N. Akhtar and K. Moessner, "On the nominal capacity of multi-radio multi-channel wireless mesh networks," *Computer Communications*, vol. 31, no. 8, May 2008.
- [8] V. Bhandari and N. Vaidya, "Connectivity and capacity of multi-channel wireless networks with channel switching constraints," *26th IEEE International Conference on Computer Communications. INFOCOM 2007*. Anchorage, Alaska, USA, pp. 785-793, May 2007.
- [9] B. Aoun and R. Boutaba, "Max-min fair capacity of wireless mesh networks," in *Proc. of the 3rd IEEE International Conference on Mobile Ad-hoc and Sensor Systems*, Oct. 2006
- [10] P. Gupta and P. Kumar, "The capacity of wireless networks," *Information Theory, IEEE Transactions on*, vol. 46, no. 2, pp. 388-404, Mar. 2000.
- [11] BounpadithKannhavong, Hidehisa Nakayama, Abbas Jamalipour, Yoshiaki Nemoto, and Nei Kato, "A Survey of Routing Attacks in MANET," *IEEE Wireless Communications Magazine*, Vol. 14, No. 5, pp. 85-91, Oct. 2007.
- [12] J. Jun, P. Peddabachagari, and M. L. Sichitiu, "Theoretical maximum throughput of IEEE 802.11 and its applications," in *Proc. Second IEEE International Symposium on Network Computing and Applications. NCA 2003*, Cambridge, MA, pp. 249-256, Apr. 2003.