

# Improved Mobility Model Performance using Wireless Ad Hoc Network

**Manvendra Singh<sup>1</sup>, Ashish Gupta<sup>2</sup>, Anuradha Pathak<sup>3</sup>**  
Research Scholar, Department of Electronics & Communication<sup>1</sup>  
Assistant Professor, Department of Electronics & Communication<sup>2,3</sup>  
Nagaji Institution of Technology and Management, Gwalior, India

**Abstract:** *This paper has reported an improved process for an optimized and effective node management model for mobile wireless ad hoc networks. The improved technique is based on optimized and route maintenance of the network. The proposed method aims to overcome the problem when the movement of nodes happens during the routing process. Mobility Models' performance has been estimated using parameters like Packet Delivery Ratio (PDR), Average Latency, Throughput, etc., using NS-3.0.*

**Keywords:** MANET, Mobility models, Mobility sample, NS-3.0, Performance.

## REFERENCES

- [1] Network simulator Homepage. <https://www.nsnam.org/release/ns-3.0-pre-releases/>
- [2] Althunibat, S., Badarneh, O.S., Mesleh, R.: Random waypoint mobility model in space modulation systems. IEEE Commun. Lett. 23(5) (2019).
- [3] Soltani, M.D., Purwita, A.A., Zeng, Z., Chen, C., Haas, H., Safari, M.: An orientation based random waypoint model for user mobility in wireless networks. In: IEEE International Conference on Communications Workshops, ICC, Dublin, Ireland, Ireland (2020)
- [4] Bhusal, N.: A review on impact of mobility model of routing protocols in ad-hoc network. ISTPJ. Res. Electr. Electron. Eng. (ISTP-JREEE). In: 1st International Conference on Research in Science, Engineering & Management (IOCRSEM) (2014)
- [5] Manzoor, A., Sharma, V.: A survey of routing and mobility models for wireless ad hoc network. SSRG Int. J. Comput. Sci. Eng. 46–50 (2015)
- [6] Ribeiro, A., Sofia, R.C.: A survey on mobility models for wireless networks. SITI Technical Report SITI-TR-11-01, February (2011)
- [7] Pullin, A.: Techniques for Building Realistic Simulation Models for Mobile Ad Hoc Network Research. Ph.D. thesis, Leeds Beckett University, Leeds, UK (2014)
- [8] Shukla, A.K., Jha, C.K., Arya, R.: A simulation study with mobility models based on routing protocol. In: Proceedings of Fifth International Conference on Soft Computing for Problem Solving, pp. 867–875 (2016)
- [9] Bai, F., Helmy, A.: A survey of mobility models. In: Wireless Ad-hoc Networks, pp. 1–30 (2004)
- [10] Agashe, A.A., Bodhe, S.K.: Performance evaluation of mobility models for wireless ad hoc networks. In: Proceedings of the IEEE First International Conference on Emerging Trends in Engineering and Technology, pp. 172–175 (2008).
- [11] Carofoglio, G., Chiasserini, C.F., Garetto, M., Leonard, E.: Route stability in MANETs under the random direction mobility model. IEEE Trans. Mobile Comput. 8(9), 1167–1179 (2009).
- [12] Shukla, A.K., Kapil, M., Garg, S.: Int. J. Eng. Res. Ind. Appl. (IJERIA). 5(III), 1–10 (2012). ISSN 0974-1518
- [13] Vetrivelan, N., Reddy: Impact and performance of analysis of mobility models on stressful mobile WiMax environments. Int. J. Comput. Netw. Secur. (IJCNS) 2 (2010)
- [14] Gerharz, M., de Waal, C.: BonnMotion—A Mobility Scenario Generation Tool. University of Bonn [Online].
- [15] Bekmezci, Sahingoz, O.K., Temel, S.: Flying Ad-Hoc Networks (FANETs): a survey. Ad-Hoc Netw. 11(3), 1254–1270 (2013)