

MANET PROTOCOLS IN REAL ENVIRONEMENT

Ana Hoxha¹, Anisa Lushi², Genta Ranxha³

¹PLUS Communication, Albania. Email: ana.hoxha@plus.al

²National Agency for Information Society. Email: anisa.lushi@akshi.gov.al

³PLUS Communication, Albania. Email: genta.ranxha@plus.al

Abstract

Mobile Ad Hoc Network (MANET) is a collection of two or more devices or nodes or terminals with wireless communications and networking capability that communicate with each other without the aid of any centralized administrator. These nodes can dynamically form a network to exchange information without using any existing fixed network infrastructure functioning as a node and as a router at the same time. The network topology in a MANET usually changes with time; hence a dynamic routing protocol is needed for these networks to function properly. The goal of routing protocol is to efficiently construct a route between a pair of nodes with minimum routing overhead and bandwidth consumption. Since MANETs are not currently deployed on a large scale, research in this area is mostly simulation based. Among other simulation parameters, the mobility model plays a very important role in determining the protocol performance in MANET. Thus, it is essential to study and analyze various mobility models and their effect on MANET protocols. In this paper, a comparison between AODV and DSR is used to study the performance of the best mobility model. Beside the commonly used Random Waypoint model and its variants, it has been also discussed various models that exhibit the characteristics of temporal dependency, spatial dependency and geographic constraint like Gauss Markov, Manhattan Grid and Reference Point Group Mobility (RPMG). BONNMOTION is used to change the network parameters as network size and movement velocity in order to decide on the best mobility model. Further the correctness of the best mobility model is investigated by the assessment of performance parameters like packet delivery ratio (PDR), overhead, and energy good put, using NS-2 simulator.

Keywords: *MANET, AODV, real mobility models.*