Abstract

This paper is a contribution to the mathematical modeling of an important element in Ad hoc networks: Hello message. A queuing system is introduced to model the hello message receptions at given node. Here, the customers are the Hello messages and the service is defined as the processing of these messages. The modeling in question allows us to study the maximum waiting time of Hello messages before their treatment in the reception node. Under the hypothesis that Hello messages arrive according to a Poisson process and by using the theory of random walks, we obtain the closed form expression of the maximum waiting time. We validate our approach by the simulation study.

References

Distribution of the Maximum Waiting time of a Hello Message in Ad hoc Networks


Index Terms

Computer Science

Wireless

Keywords

Ad Hoc Network Hello Message Random Walk Waiting Time Factorization Methods