Generalized Probability Model in a WPAN to Compute Handover Probabilities

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Abstract

In this work unsuccessful probabilities have been computed for WPAN environment. A new WPAN model has been proposed to reduce the unsuccessful handovers. The models of 2-AP, 3-AP, 4-AP and 5-AP are generalized into an n-AP model in computing the unsuccessful probabilities. Results are presented for different locations of the mobile device in a WPAN environment. It is also shown about the kind of model to be chosen depending upon the location of the mobile device in WPAN. The probabilities of unsuccessful handover that could happen unnecessarily, that has missed to happen and total probability of unsuccessful handover due to incorrect decision are plotted for different decision times and the minimum number of free channels required in each model for maximum successful handovers.

References

1. IEEE Std. 802.15.4-2003. 2003. Standard for Telecommunications and Information Exchange Between System - Local Area Metropolitan Area Networks - Specific requirements -
Wireless Medium Access Control (MAC) and Physical Layer (PHY) Specifications for Low Rate Wireless Personal Area Networks (WPAN).


Index Terms

Computer Science Wireless
Keywords

Unsuccessful handovers, WPAN probability modeling, decision time.