Channel Re-assignment in Wireless Mesh Networks based on Link Load Estimation

Abstract

A channel assignment scheme for multi-radio WMNs (Wireless Mesh Networks) to provide high-throughput paths especially for the highly loaded node with the best connectivity to the gateway (e.g. in terms of highest rate, lowest interference or both) is provided in this paper. We observed the flows on the links and data packets at each wireless access point in an existing wireless mesh backbone from logs files of traffic flows generated at gateway level. After observing, we estimate the traffic load for each network link using load estimation algorithm. We provide the links having maximum load to minimum interference channel i.e. non-interference channel based on IEEE 802. 11. The performance evaluation shows that by using the proposed channel assignment, the network performance is improved.

References

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- IEEE Standard for Information Technology - Telecommunications and information exchange between systems - Local and metropolitan area networks specific requirement Part 15. 4: Wireless Medium Access Control (MAC) and Physical Layer (PHY) Specifications for Low-Rate Wireless Personal Area Networks (WPANs), 802. 15. 4-2007.

Index Terms

Computer Science

Wireless
Keywords
wireless mesh networks  Multichannel  Multi-interface  load estimation  channel assignment