Abstract

WiFi is widely being researched to use it beyond its original purpose of short-range communication. These kinds of efforts are stimulated due to its mass production and cost-effectiveness. Wi-Fi-based Long Distance (WiLD) networks envisage changing the rural communication scenario particularly in the undeveloped nations. However, CSMA/CA, the de-facto MAC protocol of WiFi, is found to be ill-suited for WiLD networks. As a result, various TDMA-based MAC protocols are proposed in the literature as an alternative to CSMA/CA. The proposed protocols have shown significant performance improvement in such scenarios. In this paper, we propose a classification framework of WiLD MAC protocols based on their major characteristics. Using the classification framework, a survey on the MAC protocols proposed for WiLD networks is presented. The distinctive features of the TDMA MAC protocols are critically examined by pointing out their strengths and weaknesses in WiLD environment. In addition, this paper puts forward some state of art open research challenges in this area.

References
- Bhaskaran Raman and Kameswari Chebrolu. Design and Evaluation of a new MAC Protocol for Long-Distance 802.11 Mesh Networks. In the 11th Annual International

**Index Terms**

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CSMA/CA  MAC Protocol  TDMA  WiFi  WiLD Network