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Design and Implementation of Smart Access Point with Seamless Load Balancing Multiple Interfaces

Abstract:
With the burst of Wi-Fi equipped devices, one AP usually cannot meet user demands in densely populated environments. Association control and multiple-AP deployment are proposed to address this issue. However, published works all focus on the association control algorithms and overlook the importance of the AP system. In this report, we present the design and implementation details of such a system, SAP (Smart Access Point). This new system has lots of advantages, mainly, (i) it's easy to apply association control algorithms, (ii) it reduces switching overhead to minimum, nearly zero, (iii) it doesn't require any modification at user side. We implement SAP in MadWifi driver and demonstrate its functionalities and efficiency through experiments.