

**Title:**

The Role of Software Defined Networks (SDN) in Traditional IEEE 802.11 Networks

**Abstract:**

High density Wi-Fi networks require load balancing, scalability, programmability and mobility support in order to ensure quality of service (QoS). In the traditional Wi-Fi networks, the wireless stations learn the access points (APs) load and make the association decisions themselves leading to uneven load distribution among the APs. Moreover, the unplanned installation of the APs lead to congestion in the wireless transmission. In order to induce new network functions, the hardware needs to be replaced which incurs extra cost. The new paradigm, software defined networking (SDN), has a centralized architecture, which allows to manage, measure and control high density IEEE 802.11 networks easily. The administrator has the ease to install new programming rules such as switch selection, access selection, route selection, flow table modification, link discovery and device management. The main aim of the workshop is to highlight research methods that focus on the open issues such as optimization of load using SDN, enhanced wireless transmission models using SDN, adaptive access selection either ready to send (RTS)/clear to send (CTS) or basic access, scalability of control plane, edge devices management in the forwarding plane, OpenFlow protocol updates, reduction of handoff times in WiFi networks using SDN as a solution to address the problem of Wi-Fi congestion among the OpenFlow enabled APs (OAPs) and SDN controllers. The authors can consider multi metrics criterion for association and reassociation to OAPs to achieve optimal throughput and minimum delays. The authors are encouraged to add emulation platforms along with large-scale low- cost testbed for performance evaluation. The results may be compared to the static or non-static schemes with latest trends in IEEE 802.11 networks.

**Scope and Topics:**

Potential topics include but are not limited to:

- ✧ Internet of Things and Its Applications
- ✧ Wireless Networks
- ✧ Load Balancing, Mobility and Routing
- ✧ Software Defined Networks
- ✧ Edge and Fog Computing
- ✧ OpenFlow protocols
- ✧ Pervasive and wearable computing and networking
- ✧ WLAN, WPAN, and other home/personal networking technologies...
- ✧ Security, Privacy and Trust issues in Wireless/Ad Hoc/Sensor Networks
- ✧ Experimental Prototypes and Testbeds for Wireless Networks
- ✧ Green wireless networks



- ✧ Machine Learning and/or Game Theoretical Models for Wireless Networks
- ✧ Cognitive Radio Networks, dynamic spectrum access and emerging applications and services

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