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A Single Access Point Based Traffic Control System with Passive Measurement

4
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Abstract:
The nature of wireless radio enables the unwanted anomaly users beyond the service area grabbing the bandwidth and lowering the throughput of the normal users in the service area. Conventional cryptographic solutions such as WPA and WPA2 have been cracked by many means. Existed non-cryptographic solutions require non-trivial costs such as multiple APs, special antenna, or fingerprint server. This paper focuses on designing an easy-to-use traffic control system. First, we propose an RSS window scheme to gain less fickle RSS value. Second, we design Libra, a dynamic traffic control scheme based on realtime passive measurement. Libra limits the traffic of invader users and protects the normal users' priority of using the channel. Finally, the scheme is deployed on a pervasive AP with OpenWrt system, as an additional tool to enhance the WiFi security. Benefiting from the user friendliness, the user can install the system just as installing a pervasive wireless router.

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traffic control system, single access point, user friendliness, WiFi security, OpenWrt system, pervasive AP, Libra, RSS value, RSS window scheme, passive measurement

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