

## Fast Authentication Using User Path Prediction in Wireless Broadband Networks

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**Abstract :** Wireless Interoperability for Microwave Access (WiMAX) utilizes the IEEE 802.1X mechanism for authentication. However, this mechanism incurs considerable delay during handoffs. This delay during handoffs results in service disruption which becomes a severe bottleneck. To overcome this delay, our article proposes a key caching mechanism based on user path prediction. If the user mobility follows that path, the user bypasses the normal IEEE 802.1X mechanism and establishes the necessary authentication keys directly. Through analytical and simulation modeling, we have proved that our mechanism effectively decreases the handoff delay thereby achieving fast authentication.

**Keywords :** authentication, authorization, and accounting (AAA), handoff, mobile, user path prediction (UPP) and user pattern

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