

# Prediction-Based Fast Handoff for Mobile WLANs<sup>1</sup>

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## ABSTRACT

As the demand for pervasive mobile wireless Internet grows, wireless Local Area Network (WLAN) is receiving a lot of attention because of its high data rate and low cost. However, WLAN uses a small cell size, which leads to cell discontinuity and frequent handoff, rendering fast mobility problematic. This paper proposes the prediction-based fast handoff scheme that supports broadband wireless access in fast moving vehicles. The scheme uses network mobility and the mobility characteristics of public vehicles to predict handoff. Thus, the WLAN itself moves as a moving unit using a handoff prediction and decision scheme. The proposed prediction-based scheme supports seamless handoff across continuous cells, and reduces packet loss across discontinuous cells. The scheme is applicable to mobile users who send and receive large volumes of wireless data on fast moving public vehicles, such as trains, buses and aircraft.

**Keywords:** Network mobility, Mobile network, Mobile IP, IPv6, WLAN, Handoff, Prediction

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