UNIVERSITI TEKNOLOGI MARA

SINR BASED ALGORITHM FOR VERTICAL HANDOVER BETWEEN WIMAX AND WI-FI NETWORKS

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of the requirements for the degree of
Master of Science

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AUTHOR'S DECLARATION

I declare that the work in the thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree of qualification.

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ABSTRACT

The great increase in user demand to roam among various wired and wireless communications networks without affecting the signal quality has attracted many researchers to investigate about the best handover decision criteria that promote seamless handover. IEEE 802.21 Media Independent Handover (MIH) standard can be considered the best candidate for handling both horizontal and vertical handover. In this work, we propose a new decision criteria based on MIH signalling between WLAN and WiMAX networks, which depend on the received Signal to Interference and Noise Ratio (SINR) instead of the traditional Received Signal Strength (RSS) criteria. In order to provide QoS inside the integrated network environment, the proposed Vertical Handover Decision (VHD) provides the knowledge of the achievable bandwidth from both networks by using the received SINR. Simulated-based outputs along with the analytical results have confirmed that our proposal offer better performance during the handover stage.

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