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| **Abstract:** |  |
| This paper describes the velocity adaptive vertical handoff algorithm on multi-frequency band wireless systems (V-MFVHO: Velocity adaptive Multi Frequency Vertical HandOff) in order to achieve the homogeneous handoff decision strategy. WiMAX Forum has published three licensed spectrum profiles: 2.3 GHz, 2.5 GHz and 3.5GHz. These frequency bands operated by WiMAX coexist on the same service area. In heterogeneous wireless networks, the problem is complicated since there are many differences cell coverage due to the frequency band, traffic conditions, data rate, and moving speed of MS (Mobile Station). This paper clarifies the design a scheme for selecting the candidate cells to satisfy the QoS requirements from each MS using the estimation of the location and the velocity of each MS by back-propagation neural network and the traffic and RSSI (Received Signal Strength Indicator) conditions of MS for each cell allocated for different frequency bands. | |