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## Hard Handover Optimization in Mobile WiMAX Networks

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**Abstract:** The IEEE 802.16e (mobile WiMAX) standard supports the mobile stations (MS) mobility; this incurs one of the most challenging issues in IEEE802.16e which is the handover (HO). HO occurs when the MS migrates from one cell to another. Many approaches have been proposed for HO optimization techniques by reducing HO delay or by skipping unnecessary stages to avoid resource wastage. Some other approaches focuses on the pattern prediction of the MS to predict the next target base station (TBS) according to mobility pattern table, while other approaches try to adapt the handover threshold according to the velocity of the MS. The common goal between these approaches is reduction of latency and minimization of the handover delay. In this paper we propose a new approach to balance between these factors, i.e., trying to minimize HO delay and reduce the number of target base stations (TBS), thus minimize unnecessary scans to find a suitable TBS.