

Enhanced handover mechanism in long term evolution (LTE) networks

ABSTRACT

Over the past decade, there have been great interests in cellular and fixed radio access technologies for providing mobile, nomadic and fixed telecommunication services. The fast pace development of this technology and the challenges it presents due to the increasing number of user equipments and the demand to have the service on-the-go, have presented new challenges on base stations capability and the handover (HO) techniques. To address these challenges intensive researches are being carried out to define algorithms that can handle the HO decisions based on user equipment (UE) requirements and quality of service (QoS) expectations. This paper investigates the improvement steps for HO mechanisms in long term evolution (LTE) system which is being formally submitted as a candidate 4G system. LTE network is expected to support mobility with speeds of up to 500 km/h, when the HO will then become more frequent and fast. The basis of the approach is to reduce the number of unnecessary HOs. The strengths and weaknesses for each algorithm are discussed, and conclusions are subsequently made.

Keyword: Gnip-pong handover (HO); Handover margin (HOM) time-to-trigger (TTT); Handover/handoff (HO); Long term evolution (LTE); User equipment (UE)