

## ABSTRACT

*In Wireless network, when a handoff occurs, a network routing scheme is needed to support the handoff. Mobile IP (MIP) is developed to provide terminal mobility without changing IP addresses. The Session Initiation Protocol (SIP) is an application-layer protocol used for establishing and terminating multimedia sessions. SIP already supports personal mobility, and in order to support terminal mobility, minor changes need to be done.*

*In this final project, the performances of Voice over Internet Protocol (VoIP) with terminal mobility supported by MIP and SIP are comparatively studied. The three network topologies to be considered include: the neighbor, the star and the mesh. We also trace the various mobility behaviors, which depend on the location of the Mobile Host (MH), Correspondent Host (CH) and home network of the MH. The performance of VoIP are determined by the measured parameters of mean end-to-end delay, handoff delay, packet loss per handoff operation, and the percentage of packet loss during handoff operation.*

*The investigation results show that the triangular routing and encapsulation introduced by MIP have a strong effect on the traffic of the network. SIP generally performs better than MIP. However there is a case where MIP outperforms SIP. This happens when the location of the MH is far from its CH and induces a handoff to its nearby home network. As a results, the handoff time of SIP is higher than that of MIP. The performance of MIP and SIP mobility depends on the location of the MH, CH and home network of MH. When a MH moves near to its home network, MIP performs better than in case where a MH randomly moves. Network topology also play an important role on the performance of VoIP for each mobility behaviour. The type of network topology serves as an important factor in determining the distance of wired link between the MH, CH and the home network of MH.*