

Abstract

The domain of wireless and mobile telecommunications has witnessed dramatic development during the last decade leading to the rapid spread of miniature but powerful mobile terminals. At the same time, Wireless Local Area Networks have evolved rapidly covering significant geographical areas (Hot Spots), within which a mobile end user requires continuous network access.

The development of location based services adapted to the wireless environment has to take into account its inherent particularities. The objective of such services are their ubiquitous provision to the end user despite the change of his location, the localization of the mobile terminal and the supply of user- and location-customized content.

In the scope of this thesis, a wireless LAN architecture providing seamless roaming capabilities was designed and realized and upon this infrastructure, location based services were developed and tested. In detail, the Dynamics HUT Mobile IP implementation was installed and set up. Based on the location information derived from the access points, an integrated application was built enabling the end user to communicate and collaborate with his colleagues, to receive personalized content according to his location and to locate the geographical position of other users in a GIS environment.

Keywords

Mobile IP, Wireless LAN, Location Based Services, Roaming, Handoff, Mobility, Routing, 802.11