

Hermes: LBS Support with J2ME Technology

(Diploma Thesis Extended Abstract)

Nikos Giatrakos

Laboratory of Information Systems
Department of Informatics, University of
Piraeus, Hellas

URL: <http://isl.cs.unipi.gr/db>
E-mail: ngiatrakos@gmail.com

September 2006

In recent years, mobile devices (i.e cell phones, PDAs etc) have radically evolved to serve as a powerful tool in our hands. Not only have they tremendously changed the way we communicate with each other, but also they urged us to reconsider the way traditional services could be offered. Moreover, they act as an enabler of a new era of services and facilities readily available on demand. Among them, Location Based Services (LBSs) emerged as the aftermath of adding GPS functionality to the aforementioned microdevices. Examples of LBSs involve routing, emergency response, target tracking etc.

The purpose of this thesis was threefold. First, we aimed at reviewing existing research and industry activity in the area of LBSs. Second, we proceeded in the investigation of a general purpose architectural framework which could serve as the infrastructure for LBS support. Third, using that framework we implemented a prototype LBS as a paradigm for future enhancements.

As regards the implementation issues, we took advantage of Oracle Spatial support to build a real road network of Athens city. Furthermore, we used Oracle's Middleware support to publish a J2ME web service accessible from microdevices. Eventually, we utilized Oracle Wireless and Network Analysis Libraries to provide a prototype LBS that hints users' all paths/shortest path to a certain destination.