Investigation Into The Development Of Location Based Services

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The Problem

Some location based service require an aggregation infrastructure to support the devices using the service. Because of the infrastructural support, the services do not leverage the capabilities of the mobile devices.

Purpose

The purpose of this research is to explore the possible execution level of location based services on a mobile device (mobile phone) in order to achieve maximum portability. This project seeks to establish how the source of the location information (GPS, Cell Tower Triangulation, WiFi triangulation) partition this class of LBS

Location Information Provider (GPS, Cellphone Tower,etc)

Location Content Provider (Aggregation Infrastructure)

(Multiple platform devices)

Execution Levels

J2ME

There are two levels where we are investigating: application level and SIM level. On the application level where the LBS is dependent on the infrastructure (OS, etc) on the device. The J2ME Location API provides device's location, orientation, creation and maintenance of landmarks.

On the SIM level application is executed as Java Card applets that is run by the SIM card infrastructure. Restricted by the resources available on the SIM card. APDU commands executed by the card are passed between device and card.
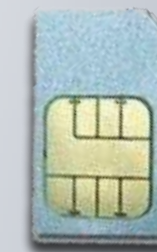
Solution / Results

An example service that is executed on the mobile device's application level and a similar service executed by the SIM card. The services will give results on tradeoffs between the functionality and portability of placing the service on the different levels. The results will also provide information about the type of services that can be executes on the different level on the device, depending on location information available to the service. The services will be evaluated on different platforms including the Symbian OS, Andriod and iPhone OS.

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