



Master Thesis in Computer Science

Traffic Information and Metadata Extraction from Real-time Geographic Sources



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Abstract

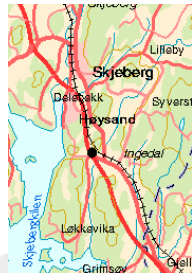
Mobile devices are everywhere, and are currently the cheapest, most rigid solution for mobile communication. We want to show that it is possible to deliver real-time traffic information provided by other mobile devices, thus creating a swarm of clients that exchange information in a georeferenced context, using open standards and consumer grade equipment. This information can be annotated by the user himself, and is uploaded to a central server for further processing.

We also show the possibility of extracting meaningful metadata about road segments and further do automatic extraction of event information that has not been reported by any participating client. In the same context we allow for the building of almost real-time maps of the road network in an area, providing high quality backdrops for further informal purposes. The hardware used consists of a java enabled mobile phone (a smartphone) and a widely available Bluetooth-enabled GPS, and is considered to be well deployed within the european consumer market.



A WMS backdrop enhanced with road information from a mobile client.

Current work



Speed
81.55 km/h

A compressed screen shot from a logged session, where a car is travelling along a local highway. While the speed could be measured at the car and then transferred to the receiving station, the whole process currently extracts this "hidden" information from the coordinates that are reported to the central. This is where the extraction of metadata is performed, and this process may be extended without any further deployment of clients.