

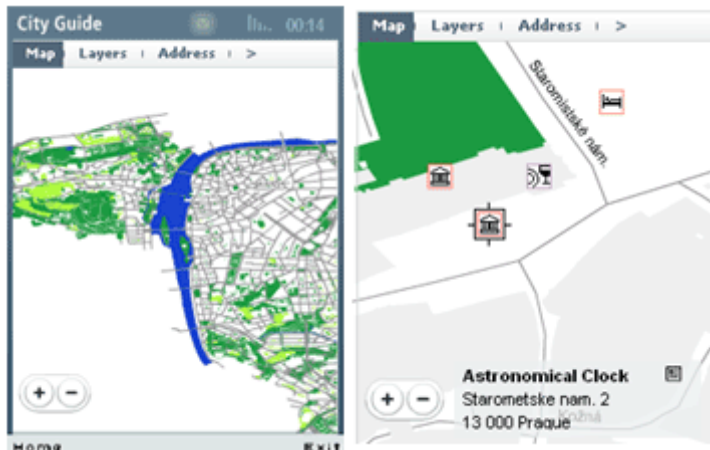
Mobile City Guide for Prague – Christian Halbach

I realized the Mobile City Guide as a prototype for my diploma thesis. The objective was to design and implement an information system which allows tourists to consume location- and context-aware multimedia services on mobile devices.

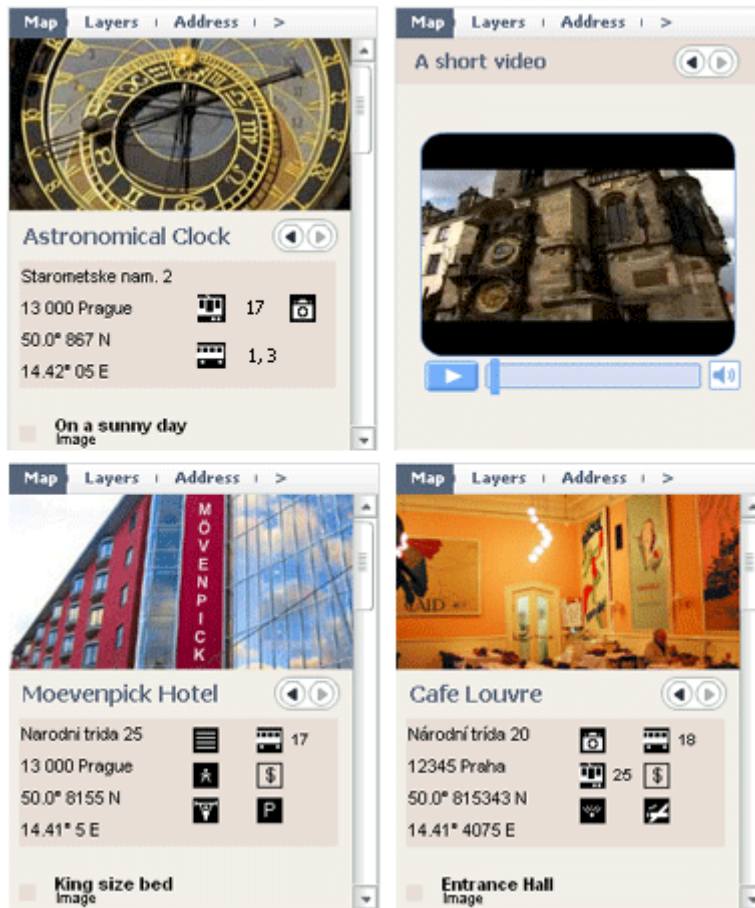


The prototype of the system implements functionalities for:

- generating dynamic and adaptive digital vector maps of Prague,
- displaying points of interests, objects, and events on the maps,
- providing personalized, streamed multimedia for each point of interest,
- searching for routes and addresses,
- visualizing tours and routes on the map,
- GPS-localization,
- sharing messages and GPS-data with other users in real time,
- displaying other users on a map and exchanging meeting points,
- and visualizing interactive multimedia information about Prague.



Target devices for the prototype must have support for Flash Player 6, Flash Lite 1.1 or J2ME (MIDP 2). They should also have a working online connection over a wireless network. For GPS-Localization there's some sort of GPS-receiver needed. This could be e.g. a Bluetooth-receiver. Some Smartphones include an A-GPS chip. The system supports Motorola's GPS API and the JSR 179 Location API for J2ME.



The backend consists of an Application Server, Map Server, Route Server, Streaming Server and MultiUser Server. The service-oriented system design ensures, that each service-response is converted into an ideal format for every different devices. Binary protocols and object oriented programming principles make the client applications fast and reliable.



Data sources are xml, web services and relational databases. The architecture of the server components is still very flexible, because it was build on successful design patterns. Different components can be reused and easily exchanged. Some components could also be implemented as a Enterprise Java Bean with container managed persistence in an extened version, later. Other components and functionalities can be added, in no time. This leaves room for implementing new service channels.

