Geocentraleapps – an Integration Platform for a Spatially Enabled Society

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SUMMARY

The utilisation of spatial data outside the professional world has for long been difficult, since most citizens face difficulties searching, querying or using a specialised system. When somewhat complex data is published even modern Web-based tools lack of attention. We see two main drawbacks of present SDI's in Switzerland. Firstly, federal structures in Switzerland with – sometimes – different political entities responsible for the same topic make it very difficult for citizens to find the right information without appropriate prior knowledge. Secondly, relevant information is not only captured as spatial but also as "textual" data. The need for more encompassing data provision has been recognised in the preparatory work for the implementation of Cadastre 2014 in Switzerland where an integrated view of spatial data and legal text is required. Instead of following the traditional approach for the combination of legal information with spatial data by defining exchange models, pre-processing and copying data, we decided to pursue an approach in line with the concept of Spatially Enabled Society (FIG Report). Recognising the strength of specialised information systems and established processes for data maintenance the architecture should be a minimal complement of existing information system. This integration platform GeocentraleApps has two main components: middleware (server-side) and client. The datasets remain in their original environment thus achieving a clearly defined responsibility for each data object. Objects are accessed through web services so most current information is always used. The core element of GeocentraleApps is the integration engine in which arbitrary datasets are linked based on facts (common keys) or spatial and non-spatial ontologies using GDAL/OGR. In the OpenLayers-based client the integrated view are rendered as maps, dashboards, simple textual data or as combination of them. Because all presentations use the same data source interactions between the view ports allow for instance that the selection of a feature in one of the view is highlighted in all others too. The first implementation using GeocentraleApps is the realisation of Cadastre 2014 for two Cantons in Switzerland. In the trial period the validity of the concept and the effective operation of the implementation have been proved. The main advantages are the simplicity of data organisation (distributed systems), minimised processing needs, bi-directional querying capabilities (spatial – legal - spatial) and simple operation. Upcoming development will focus on data integration using directories, standardised rule sets (like GeoSPARQL) and component based view configuration.