

Extending Exploration and Navigation Capabilities of the Atlas of Switzerland

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The 3D national atlas application *Atlas of Switzerland – online* (Sieber et al. 2015) currently consists of over 160 thematic maps. Many of them contain multiple datasets over time which themselves are composed of over 400,000 map objects in total. Together with more than 20,000 geo objects (e.g. municipalities, mountains) the sheer amount of information is difficult to perceive, explore and navigate, especially for new users of the atlas.

The goal of this research is to enable users to grasp the breadth and depth of information in a digital thematic atlas, help them to easily find the information they are looking for and also enable them to explore and navigate through information over spatial, temporal and thematic dimensions.

With this contribution we will present how this challenge is being addressed by a situation analysis, the deduction of concrete measures, as well as the implementation of those suggested exploration and navigation capabilities in the atlas application itself, as also the underlying geodatabase and GIS pipeline.

The presentation will give an overview of how those capabilities were identified and implemented. As well as lessons learned during the research, the current state of the application (including a demo) and future work in this area.

In order to give a sense of what to expect, two current shortcomings and possible improvements are illustrated as examples.

Atlas Exploration – Textual and spatial Search Tools

Information contained in a thematic map is dynamically loaded, when the map is selected and displayed in the atlas. Prior to loading, it is not possible to explore this information either by the textual search nor through spatial exploration.

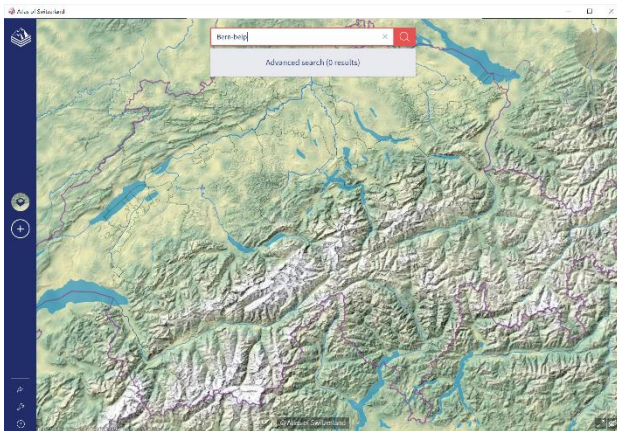


Figure 1. The airport Bern-Belp cannot be found, if there is no thematic map with airports present.

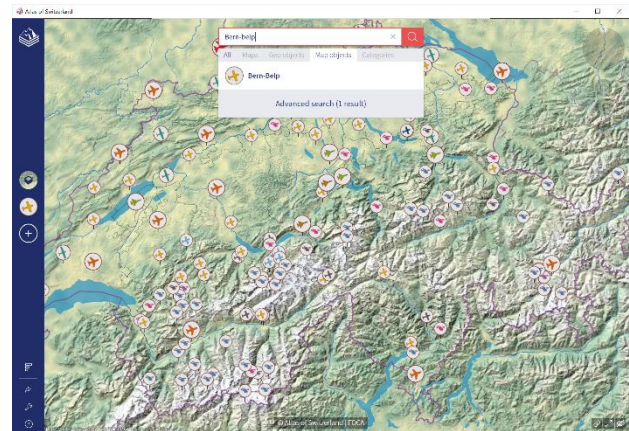


Figure 2. The airport Bern-Belp can be found as a map object, if there is a thematic map with airports present.

In order to address this shortcoming a new search index over all map objects will be introduced to the textual search. In addition, a spatial search tool will be implemented to allow the user to find those maps which contain map objects in the area the user was looking for.

Atlas Navigation – Interconnectivity of geo objects

When the user clicks on a geo object (e.g. a lake), information for this object is currently displayed inside a query box (as shown in Figure 3). This visualization allows only a small set of information being displayed.

If the user wants to find out which rivers flow into and out of this lake, he has to find and click on the rivers in order to see those names inside the query box.



Figure 3: All information is displayed inside the query box. No Navigation possible.

In order to address this shortcoming a detailed view for each class of geo object will be introduced. A detail view can be accessed by clicking on a link inside the query box. Detail views contain all information that is available for a geo object, as well as links to all other objects that are related to the subject of the detail view.

As in the example with the lake, there would be a list with all rivers flowing in and out of the lake. Each listed river is clickable and will lead the user to the detail view of that river. On the river detail view there would be a list of all lakes, towns, etc. being crossed by the river.

Those detail views would give much more space for displaying information about the objects. The interlinked network of detail views would allow the user to navigate and explore geo objects in a continuous manner, as known from a typical “Wiki”-application.

Topics:

T02 Atlases

T26 Use, User and Usability Issues