Using the Open Web Platform for Thematic Mapping in a Geo-Webservices Environment

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Keywords: Web-based cartography, Webservices; Open Web Platform;

Abstract

In this paper we describe the use of the Open Web Platform for creating thematic maps from data that is available from geo-webservices.

At ITC, we are interested in facilitating the production of maps from spatio–temporal data to a format suitable for internet dissemination, automatically and directly. To achieve that, we look specifically into the possibilities of the loose coupling of distributed geo-webservices with interactive vector maps. For that we need maps to be generated on-the-fly from the data, without conversion or pre-processing needed. This is necessary because the map generation should fit in an interoperable GeoData Infrastructure.

Following the current development of the Web, a logical step was to look for map viewer components based on the Open Web Platform. The primary goal of the the Open Web Platform is to create a comprehensive range of advanced, open Web standards (W3C 2012), enabling us to create web applications without the need for proprietary technology.

As a use case, we decided to work on the National Atlas of the Netherlands map viewer. The current experimental third edition of the Dutch National Atlas was our first attempt to implement a digital atlas client as part of the Netherlands Geodata Infrastructure (NGDI), a project described in Kraak et al. (2009). Its map viewer was pragmatically based on existing components, implemented using the proprietary Adobe Flash technology. To convert this viewer to the Open Web Platform, we used the D3 Javascript API, which allows you to bind arbitrary data to a Document Object Model (DOM), and then apply data-driven transformations to the document (Bostock et al. 2011). The resulting map viewer uses SVG and HTML5 to offer interactive map views of socio-economic data from the NGDI.

In the paper, we describe our set-up (see figure 1) in terms of performance, compatibility and adherence to standards, flexibility and extensibility.

References


URL: http://vis.stanford.edu/papers/d3